REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF PUBLIC WORKS AND INFRASTRUCTURE

TENDER DOCUMENT

FOR

THOHOYANDOU HIGH COURT: REPAIRS AND RENOVATIONS

AT

THOHOYANDOU HIGH COURT

TENDER NO.: PLK23/09

QUANTITY SURVEYORS
QS CONSULT AFRICA
PO Box 12749
Queenswood
0121
Tel: (012) 111 1998
Email: bongani@qsconsult.co.za

PRINCIPAL AGENT
QS CONSULT AFRICA
PO Box 12749
Queenswood
0121
Tel: (012) 111 1998
Email: bertus@qsconsult.co.za

NAME OF BIDDER: _____

TENDER AMOUNT: R.....

CLOSING DATE: **08 August 2023**
CLOSING TIME: **11h00am**

EXPANDED PUBLIC WORKS PROGRAMME

National Youth Service

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YOU ARE HEREBY INVITED TO TENDER TO THE GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA

PLEASE TAKE NOTE **TENDER NUMBER: PLK23/09**
CLOSING TIME: 11:H00am **CLOSING DATE: 08 AUGUST 2023**

TENDERS RECEIVED AFTER THE CLOSING TIME AND DATE ARE LATE AND WILL AS A RULE NOT BE ACCEPTED FOR CONSIDERATION

The **Tax Clearance Certificate for Tender Purposes** from the Receiver of Revenue and the **Tender Form** must be completed and signed in the original that is in ink. Forms with photocopied signatures or other such reproduction of signatures may be rejected.

TENDER DOCUMENTS MAY BE POSTED TO

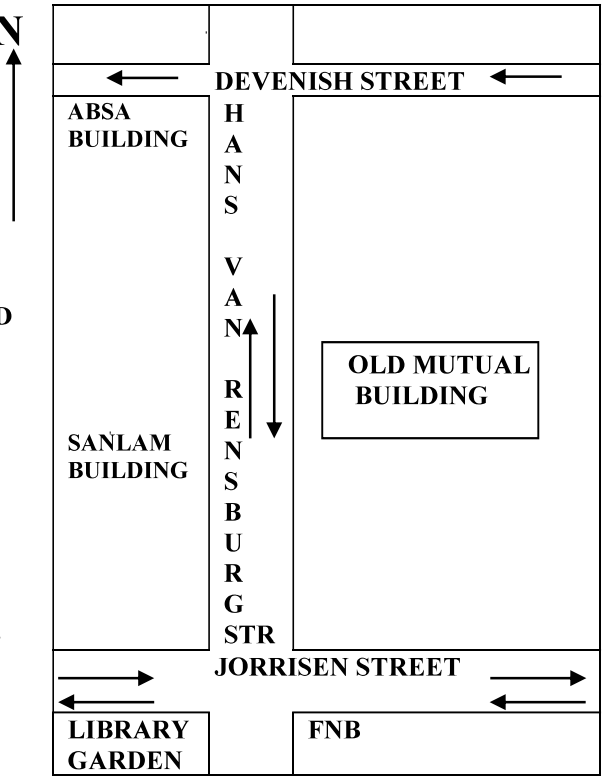
REGIONAL MANAGER
Department of Public Works
Private Bag X 9469
POLOKWANE
0700

ATTENTION: PROCUREMENT SECTION: ROOM 10, GROUND FLOOR

Tender documents that are posted must reach the Department of Public Works before the closing date of the tender.

OR

The tender documents may be deposited in the tender box which is identified as the tender box of the Department of Public Works which is located at 78 Hans van Rensburg Street, Old Mutual Building, Room 10, Ground Floor.



The tender box at the Regional Office: Department of Public Works: POLOKWANE is open **(Mondays to Fridays 07:30 – 12:15 / 13:00 – 16:00.)** However, if the tender is late, it will as a rule not be accepted for consideration.

Tenderers should ensure that tenders are delivered timeously to the correct address.

SUBMIT ALL TENDERS ON THE OFFICIAL FORMS - DO NOT RETYPE.
Tenders by telegram, facsimile or other similar apparatus will not be accepted for consideration.

SUBMIT EACH TENDER IN A SEPARATE SEALED ENVELOPE.

The Government Tender Bulletin is available on the Internet on the following web sites:

1. http://www.treasury.gov.za
2. http://www.gov.za/tenders/

VOLUME 1: TENDERING PROCEDURES

T1.1 Tender Notice and Invitation to Tender

PA-04 (EC): NOTICE AND INVITATION TO TENDER

THE DEPARTMENT OF PUBLIC WORKS AND INFRASTRUCTURE INVITES TENDERS FOR:

Project title:	Thohoyandou High Court: Repair and Renovations

Tender no:	PLK23/09	**Reference no:**	6054/0070
Advertising date:	14/07/2023	**Closing date:**	08/08/2023
Closing time:	11:00 am	**Validity period:**	84 Calendar days

1. REQUIRED CIDB GRADING

It is estimated that tenderers should have a CIDB contractor grading designation of ***7 GB*** *or* ***7 GB**** or higher.
** Delete "or select tender value range select class of construction works" where only one class of construction works is applicable*

It is estimated that potentially emerging enterprises should have a CIDB contractor grading designation of ***Not applicable Not applicable*** **PE** *or* ***Not applicable Not applicable*** **PE*** or higher.
** Delete "or select tender value range select class of construction works PE" where only one class of construction works is applicable*

2. RESPONSIVENESS CRITERIA

2.1 Substantive responsiveness criteria

Only tenderers who are responsive to the following substantive responsiveness criteria are eligible to submit tenders. Failure to comply with the criteria stated hereunder shall result in the tender offer being disqualified from further consideration:

1	☒	Only those tenderers who satisfy the eligibility criteria stated in the Tender Data may submit tenders.
2	☒	Tender offer must be properly received on the tender closing date and time specified on the invitation, fully completed either electronically (if issued in electronic format), or by writing legibly in non-erasable ink. (All as per Standard Conditions of Tender).
3	☒	Use of correction fluid is prohibited.
4	☒	Registration on National Treasury's Central Supplier Database.
5	☒	Submission of (DPW-07 EC): Form of Offer and Acceptance.
6	☒	Submission of DPW-09 (EC): Particulars of Tenderer's Projects.
7	☐	Submission of DPW-16 (EC): Site Inspection Meeting Certificate
8	☐	Submission of record of attending compulsory virtual bid clarification / site inspection meeting.
9	☐	Submission of DPW-21 (EC): Record of Addenda to tender documents
10	☒	The tenderer shall submit his fully priced Bills of Quantities / Lump Sum Document (complete document inclusive of all parts) together with his tender.

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11	☐	The tenderer shall submit his fully priced and completed sectional summary- and final summary pages with the tender.
12	☒	All parts of tender documents submitted must be fully completed in ink and signed where required
13	☒	Built environment qualification relating to construction building works of the company owner / foreman or Project Manager

2.2 Administrative responsiveness criteria

The Employer reserves the right to request further information regarding the undermentioned criteria. Failing to submit further clarification and/or documentation within seven (7) calendar days from request or as specifically indicated, will disqualify the tender offer from further consideration.

1	☒	Any correction to be initialled by the person authorised to sign the tender documentation as per PA 15.1 or PA 15.2 resolution of board/s of directors / or PA15.3 Special Resolution of Consortia or JV's .
2	☒	Submission of applicable (PA-15.1, PA-15.2, PA-15.3): Resolution by the legal entity, or consortium / joint venture, authorising a dedicated person(s) to sign documents on behalf of the firm / consortium / joint venture.
3	☒	Submission of (PA-09 (EC)): List of Returnable Documents
4	☒	Submission of (PA-11): Bidder's disclosure.
5	☒	Submission of (PA-16): Preference Points Claim Form in terms of the Preferential Procurement Regulations 2022
6	☒	Submission of (PA 40): Declaration of Designated Groups for Preferential Procurement.
7	☒	Submission of proof of Registration on National Treasury's Central Supplier Database (CSD).
8	☒	Submission of DPW-15 (EC): Schedule of proposed sub-contractors
9	☐	The tenderer shall submit his fully priced Bills of Quantities (complete document inclusive of all parts) within 14 days from request.
10	☒	Upon request, submission of fingerprints obtainable from local SAPS including any other additional documentation and information required for vetting purposes.
11	☐	Upon request, submission of a fully completed security clearance application form with supporting documentation and information as required. The security clearance form will be provided by the Employer for projects requiring a security clearance.
12	☒	The site meeting is compulsory to explain scope of work, CIDB Build program, CPG requirements and changes in the tender documents and pricing instructions in detail at site meeting as it impacts on the bidders' pricing.

3. Method to be used to calculate points for specific goals

☐ **For procurement transaction with rand value greater than R2 000, 00 and up to R1 Million (Inclusive of all applicable taxes) the specific goals listed below are applicable.**

Serial No	Specific Goals	Preference Points Allocated out of 20	Documentation to be submitted by bidders to validate their claim
1.	An EME or QSE which is at least 51% owned by black people.	10	ID Copy. or SANAS Accredited BBBEE Certificate/ Sworn Affidavit. or

			CSD Report. or CIPC (Company registration)
2.	Located in a specific Local Municipality or District Municipality or Metro or Province area for work to be done or services to be rendered in that area.	2	Office Municipal Rates Statement. or Permission to occupy from local chief in case of rural areas (PTO). or Lease Agreement
3.	An EME or QSE which is at least 51% owned by women	4	ID Copy or CSD Report or CIPC (Company Registrations)
4.	An EME or QSE which is at least 51% owned by people with disability.	2	Medical Certificate or South African Social Security Agency (SASSA) Registration or National Council for Persons with Physical Disability in South Africa registration (NCPPDSA)
5.	An EME or QSE which is at least 51% owned by youth.	2	ID Copy or CSD Report Or CIPC

☒

For procurement transaction with rand value greater than R1 Million and up to R50 Million (Inclusive of all applicable taxes) the specific goals listed below are applicable.

Serial No	Specific Goals	Preference Points Allocated out of 20	Documentation to be submitted by bidders to validate their claim
1.	An EME or QSE which is at least 51% owned by black people.	10	ID Copy. or SANAS Accredited BBBEE Certificate/ Sworn Affidavit. or CSD Report. or CIPC (Company registration)
2.	Located in a specific Local Municipality or District Municipality or Metro or Province area for work to be done or services to be rendered in that area.	2	Office Municipal Rates Statement. or Permission to occupy from local chief in case of rural areas (PTO). or Lease Agreement
3.	An EME or QSE which is at least 51% owned by women	4	ID Copy or CSD Report or CIPC (Company Registrations)

4.	An EME or QSE which is at least 51% owned by people with disability.	2	Medical Certificate or South African Social Security Agency (SASSA) Registration or National Council for Persons with Physical Disability in South Africa registration (NCPPDSA)
5.	An EME or QSE which is at least 51% owned by youth (Mandatory)	2	ID Copy or CSD Report Or CIPC

For procurement transaction with rand value greater than R50 Million (Inclusive of all applicable taxes) the specific goals listed below are applicable.

Serial No	Specific Goals	Preference Points Allocated out of 10	Documentation to be submitted by bidders to validate their claim
☐ 1.	An EME or QSE which is at least 51% owned by black people.	4	ID Copy. or SANAS Accredited BBBEE Certificate/ Sworn Affidavit. or CSD Report. or CIPC (Company registration)
2.	Located in a specific Local Municipality or District Municipality or Metro or Province area for work to be done or services to be rendered in that area.	2	Office Municipal Rates Statement. or Permission to occupy from local chief in case of rural areas (PTO). or Lease Agreement
3.	An EME or QSE which is at least 51% owned by women	2	ID Copy or CSD Report or CIPC (Company Registrations)
4. ☐	An EME or QSE which is at least 51% owned by people with disability (Mandatory) **OR**	2	Medical Certificate or South African Social Security Agency (SASSA) Registration or National Council for Persons with Physical Disability in South Africa registration (NCPPDSA)
5. ☐	An EME or QSE which is at least 51% owned by youth (Mandatory	2	ID Copy or CSD Report Or CIPC

		NB. (The use of this goal is mandatory however the BSC must select either one of the two and not both)			

4. Functionality criteria:

Note: *All bids involving the acquisition of engineering and construction works from cidb Grade 3 and above are subjected to functionality.*

Note: *Functionality will be applied as a prequalification criterion. Such criteria are used to establish minimum requirements where after bids will be evaluated solely on the basis of price and preference.*

Functionality criteria:	**Weighting factor:**
1. Workforce Contractor to provide proof of work force to execute the project. (Attach original certified trade test certificates and ID copies) a) Plumbers 2 and above 5 points 1 4 points b) Electrician 2 and above 5 points 1 4 points c) Mechanical (HVAC) 2 and above 5 points 1 4 points Failure to attach both trade test and ID copies will results in zero score.	20
2. Management 1 Similar Construction projects that have been completed for the amount exceeding R10 000 000 under taken and completed successfully in the last 10 years. (Attach practical or final certificates and also appointment letter indicating project value of R10 000 000.00 projects and above) 5 and above 5 points 4 projects 4 points 3 projects 3 points 2 projects 2 points 1 project 1 point Failure to attach relevant project and appointment letter indicating the amount will results in zero score	30

3. Management 2 Contractor to provide CV's and qualifications in built environment relating to construction building works (Engineers, Technologists, technicians, QS or Architect) with similar minimum experience of 3 years in the construction industry. a) Owner on ck (Engineer, Technologist, Technician, QS or Architect) = 5 points b) Project Manager or foreman (Engineers, Technologists, Technicians, QS or Architect) = 4 points Failure to attach both CV and certified qualification will results in zero score	30
4. Tenderers ability to provide a letter of intent for the provision of a guarantee a) A letter from a registered financial institution confirming the intent to provide a guarantee equivalent to 10% of the bidders price on form of offer = 5 points b) Should the bidder opt for any other options on the DPW 07 other than the 10% payment reduction will receive = 4 points c) (Payment reduction of 10% of the value certified in the payment certificate will not be scored). Failure to choose any security guarantee will results in zero score	20
Total	**100 Points**

(Weights for functionality must add up to 100. Weightings will be multiplied by the scores allocated during the evaluation process to arrive at the total functionality points)

Minimum functionality score to qualify for further evaluation:	50

(Total minimum qualifying score for functionality is 50 Percent, any deviation below or above the 50 Percent, provide motivation below)

5. BID EVALUATION METHOD

This bid will be evaluated according to the preferential procurement model in the PPPFA: (Tick applicable preference point scoring system)

☒ **80/20** Preference points scoring system	☐ **90/10** Preference points scoring system	☐ **Either 80/20 or 90/10** Preference points scoring system

In case where below/above R 50 000 000 is selected, the lowest acceptable tender will be used to determine the applicable preference point system.

6. ELIGIBILITY IN RESPECT OF RISK TO THE EMPLOYER:

Standard risk management assessment criteria in respect of tenders received for routine projects in the engineering and construction works environments:

Tender offers will be evaluated by an Evaluation Committee based on the technical and commercial risk criteria listed hereunder. Each criterion carries the same weight / importance and will be evaluated individually based on reports presented to the Bid Evaluation Committee by the Professional Team appointed on the project. A tender offer will be declared non-responsive and removed from any further evaluation if any one criterion is found to present an unacceptable risk to the Employer.

In order for the evaluation reports to be prepared by the Professional Team, the Tenderer is obliged to provide comprehensive information on form DPW-09 (EC). Failure to complete the said form will cause the tender to be declared non-responsive and removed from any further consideration. The Employer reserves the right to request additional information over and above that which is provided by the Tenderer on said form. The information must be provided by the Tenderer within the stipulated time as determined by the Bid Evaluation Committee, failing which the tender offer will *mutatis mutandis* be declared non-responsive.

6.1 Technical risks:

Criterion 1: Experience on comparable projects during the past 10 **years.**

The tendering Service Provider's experience on comparable projects during the past 10 years. The number of current and previous comparable projects performed by the Tenderer as per the evaluation report prepared by the Consultant Team, based on its research and inspection of a representative sample of the Tenderer's current and previous work as reflected on form DPW-09 (EC), as well as, if necessary, of any additional work executed by the Tenderer, not reflected on form DPW-09 (EC). Failing to provide contactable references will result in the tender offer will be *mutatis mutandis* declared non-responsive.

Aspects to be regarded as "comparable" includes (but may be extended according to circumstances): size of projects (measured against monetary value or other project quantifying parameters), nature of projects (building, engineering, high/low rise, etc.), locality/area of execution (site-specific influences, knowledge of local conditions, etc.), complexity of project, projects for similar client department irrespective of end purpose of buildings/facilities created or in progress of being created and time scales of projects (normal, fast track, etc.) and stage of its/their development.

Criterion 2: Contractual commitment and quality of performance on comparable projects during the past 10 **years.**

Adherence to contractual commitments and quality of performance of comparable current and previous projects performed by the Tenderer during the past 10 years as per the evaluation report prepared by the Consultant Team, based on its research and inspection of a representative sample of the Tenderer's current and previous work as reflected on form DPW-09 (EC), as well as, if necessary, of any additional work executed by the Tenderer, not reflected on form DPW-09 (EC). Failing to provide contactable references will result in the tender offer be *mutatis mutandis* declared non-responsive.

Aspects to be considered include, but are not limited to the following:

1. The level of progress on current projects in relation to the project programme or, if such is not available/applicable, to the contractual construction period in general;
2. The degree to which previous projects have been completed within the contractual completion periods and/or extensions thereto, and the extend of penalties imposed;
3. Project performance: time management & programming of works, timeous ordering of materials and appointment of subcontractors;
4. Financial management: payment to suppliers and cash flow problems;
5. Quality of workmanship: extent of reworks and timeous attention to remedial works;
6. Personnel resources: suitably qualified and experienced, turnover in site staff and labour force, specifically site manager and foreman;
7. Personnel management: extent of labour disputes and ability to resolving labour disputes amicably;
8. Sub-contractors: extent of turnover in subcontractors, general liaison and payment problems experienced;

9. Contract administration: contractual aspects such as complying to laws and regulations, insurances, security, submission of required documentation timeously, reaction to written contract instructions, appointments of subcontractors, etc. as can generally be expected in standard/normal conditions of contract.
10. Health & Safety: adherence to regulations and compliance, and number of transgressions & serious incidents.
11. Plant & equipment: sufficient resources on site and in time.
12. Delays: extent of causing delays, submission of claims timeously, and abuse of or exaggerated delay claims.
13. Final account: extent to which the contractor assisted in finalising the final account.

Criterion 3: Suitably qualified and appropriately experienced human resources

Allocation of suitably qualified and appropriately experienced human resources, both in respect of principals and/or other staff (contract manager, site agent, site foreman including other professional, technical and/or administrative) of the tendering Service Provider to the project, as proof that the tendering Service Provider will be able to react/respond appropriately to the Services required herein. The Company Organogram with CV's and certified ID's of all principals and employed workforce as well as proof of Professional Registration will be verified. Current and future workload of the tenderer in relation to capacity and capability will also be considered. The tenderer should demonstrate that he or she possesses the necessary professional and technical qualifications and -competence in relation to the scope of work and work to be undertaken.

Criterion 4: Attendance of compulsory bid clarification meeting, if applicable

If applicable, submission of confirmation of DPW-16.1 (PSB) attendance of compulsory bid clarification meeting or proof of attending the compulsory virtual meeting by a suitably qualified and experienced representative of the tenderer in terms of PA-04 (EC): Notice and Invitation to Tender.

6.2 Commercial risks:

The financial viability assessment evaluates the risk over the life of the construction period, as to whether the tenderer will be able to deliver the goods and services which are specified in the contract and / or be able to fulfil guarantees or warranties provided for in the contract in order to complete the project successfully for the amount tendered.

Aspects to be considered include but are not limited to, the respective rates tendered, bank rating, financial capability and capacity whether the tenderer has or has access to sufficient financial resources to deliver the goods or services described in the tender documentation (including fulfilling any guarantees or warranty claims), whether the tenderer is not subject to any current or impending legal action (either formal proceedings or notification of legal action) which could impact on the financial standing of the tenderer or the delivery of the goods or services, financial report from auditors as proof of current liquidity, and company or any parent company or investor guarantee/s and financial statements.

7. CONTRACT PARTICIPATION GOAL TARGETS AND CIDB B.U.I.L.D. PROGRAMME

The contractor shall achieve in the performance of the contract the following Contract Participation Goals (CPGs) as described in PG-01.2 (EC): Scope of Work and PG-02.2 (EC): Pricing Assumptions and in accordance with the feasibility study, which forms part of the specifications in the CPG Section of the Specification of this contract.

(a)	Minimum Targeted Local Manufacturers of Material Contract Participation Goal, in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.	**Applicable**
(b)	Minimum Targeted Local Building Material Suppliers Contract Participation Goal in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb	**Applicable**

	Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.	
(c)	Minimum Targeted Local Labour Skills Development Contract Participation Goal in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.	**Applicable**
(d)	**cidb BUILD Programme**: Minimum Targeted Enterprise Development Contract Participation Goal in accordance with the cidb Standard for Indirect Targeting for Enterprise Development through Construction Works Contracts, No 36190 Government Gazette, 25 February 2013, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.	**Applicable**
(e)	**cidb BUILD Programme:** Minimum Targeted Contract Skills Development Goal in accordance with the cidb Standard for Developing Skills through Infrastructure Contracts as published in the Government Gazette Notice No. 43495 of 3 July 2020, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.	**Applicable**

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(f)	DPWI National Youth Service training and development programme (NYS) – Condition of Contract.	**Applicable**
(g)	Labour Intensive Works – Condition of Contract.	**Not applicable**
(h)		**Select**
(i)		**Select**

8. COLLECTION OF TENDER DOCUMENTS

☒ Bid documents are available for free download on e-Tender portal www.etenders.gov.za

☒ Alternatively; Bid documents may be collected during working hours at the following address 78 Hans Van Rensburg Street, Polokwane, Procurement office no. 10. A non-refundable bid deposit of **R** 700.00 is payable (cash only) on collection of the bid documents.

9. SITE INSPECTION MEETING

A pre-tender site inspection meeting will **be** held in respect of this tender.
Attendance of said pre- tender site inspection meeting is **compulsory**

The particulars for said pre- tender site inspection meeting or virtual bid clarification / site inspection meeting. are:

Venue:	Thohoyandou High Court		
Virtual meeting link:	N/A		
Date:	26/07/2023	**Starting time:**	10:00 am

10. ENQUIRIES

Enquiries related to tender documents may be addressed to:

DPWI Project Manager:	Ms. F Tshidavhu	**Telephone no:**	015 291 6425
Cellular phone no:	071 679 8604	**Fax no:**	N/A
E-mail:	Fhumulani.Tshidavhu@dpw.gov.za		

11. DEPOSIT / RETURN OF TENDER DOCUMENTS

Telegraphic, telephonic, telex, facsimile, electronic and / or late tenders will not be accepted.

Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.

All tenders must be completed in non-erasable ink and submitted on the official forms – (forms not to be re-typed).

Tender documents may be posted to:		**Deposited in the tender box at:**
The Director-General Department of Public Works and Infrastructure Private Bag X 9469 POLOKWANE 0700 **Attention:** **Procurement section:** Room 10	**OR**	Department of Public Works & Infrastructure Old Mutual Building 78 Hans van Rensburg Street Ground floor

12. COMPILED BY:

Ms. F Tshidavhu		
Name of Project Manager	Signature	Date

T1.2 Tender Data

Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

DPW-03 (EC): TENDER DATA

Project title:	***Thohoyandou High Court: Repairs and Renovations***
Reference no:	*6054/0070*

Tender / Quotation no:	PLK23/09	**Closing date:**	*08/08/2023*
Closing time:	***11:00***	**Validity period:**	***12 Weeks (84 Calender days)***

Clause number:	
	The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Construction Procurement as per Government Notice No. 423 published in Government Gazette No. 42622 of 8 August 2019 and as amended from time to time. (see www.cidb.org.za). The Standard Conditions of Tender make several references to the Tender Data for details 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 to the clause marked "C" in the above mentioned Standard Conditions of Tender.
C.1.1	The employer is the Government of the Republic of South Africa in its Department of Public Works and Infrastructure.
C.1.2	For this contract the three volume approach is adopted. This procurement document has been formatted and compiled under the headings as contained in the CIDB's "Standard for Uniformity in Construction Procurement." The three volume procurement document issued by the employer comprises the following: Volume 1: Tendering procedures T1.1 - Notice and invitation to tender (PA-04 EC) T1.2 - Tender data (DPW-03 EC) Volume 2: Returnable documents T2.1 - List of returnable documents (PA-09 EC) C1.1 - Form of offer and acceptance (DPW-07 EC) C1.2 – Contract Data T2.2 - Returnable schedules Volume 3: Contract Part C1: Agreement and contract data C1.2 - Contract data (Part 1: Data provided by employer) (DPW-04 EC or DPW-05 EC) C1.3 - Form of guarantee (DPW-10.1 EC / DPW-10.3EC or DPW-10.2 EC/DPW-10.4 EC) Part C2: Pricing data C2.1 - Pricing Assumptions (PG-02.2 EC or PG-02.1EC) C2.2 - Bills of Quantities / Lump sum document (if not a returnable document) Part C3: Scope of work C3 - Scope of work (PG-01.2 EC or PG-01.1EC) Part C4: Site information C4 - Site information (PG-03.2 EC or PG03.1EC)

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C.1.4	The Employer's agent is:	
	Name:	***Fhumulani Tshidavhu***
	Capacity:	***Departmental Project Manager***
	Address:	***77 Hans van Rensburg Street, Polokwane, 0699***
	Tel:	***015 291 6425***
	Fax:	***N/A***
	E-mail:	***Fhumulani.Tshidavhu@dpw.gov.za***
C.2.1 **C.3.11**	**A. <u>ELIGIBILITY IN RESPECT OF CIDB REGISTRATION</u>:** The following tenderers who are registered with the CIDB, or are *capable of being so registered prior to the evaluation of submissions, are eligible to have their tenders evaluated (* tenderers who are capable of being so registered, or who have applied for registration but have not yet received confirmation of such registration, must provide, <u>with this tender</u>, acceptable documentary proof thereof): a) contractors who have 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 ***7 GB*** or ***7 GB***** class of construction work; and b) contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above: ***select*** Joint ventures are eligible to submit tenders provided that: 1. every member of the joint venture is registered with the CIDB; 2. the lead partner has a contractor grading designation in the ***6 GB*** or ***6 GB***** class of construction work; 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, or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations for a ***7 GB*** or ***7 GB***** class of construction work ** *Delete "or select tender value range select class of construction works" where only one class of construction works is applicable*
	A contract will be entered into with a tenderer who has in his employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff: ***Applicable***	

Tender no: PLK23/09

B. ELIGIBILITY IN TERMS OF PRE-QUALIFICATION CRITERIA FOR PREFERENTIAL PROCURMENT:

☐	A tenderer having stipulated minimum B-BBEE status level of contributor: ☐ Level 1 or ☐ Level 2 or ☐ Level 3
☒	☐ An EME or ☐ A QSE or ☐ An EME or QSE

C. INDICATE THE FUNCTIONALITY WEIGHTING APPLICABLE TO THIS BID:

Note: *All bids involving the acquisition of engineering and construction works from cidb Grade 4 and above are subjected to functionality.*

Note: *Functionality will only be applied as a prequalification criterion. Such criteria are used to establish minimum requirements where after bids will be evaluated solely on the basis of price and preference.*

Functionality Criteria	***Weighting Factor***
1. Workforce Contractor to provide proof of work force to execute the project. (Attach original certified trade test certificates and ID copies) a) Plumbers 2 and above 5 points 1 4 points b) Electrician 2 and above 5 points 1 4 points c) Mechanical (HVAC) 2 and above 5 points 1 4 points Failure to attach both trade test and ID copies will results in zero score.	20
2. Management 1 Similar Construction projects that have been completed for the amount exceeding R10 000 000 under taken and completed successfully in the last 10 years. (Attach practical or final certificates and also appointment letter indicating project value of R10 000 000.00 projects and above) 5 and above 5 points 4 projects 4 points 3 projects 3 points 2 projects 2 points 1 project 1 point Failure to attach relevant project and appointment letter indicating the amount will results in zero score	30
3. Management 2	

Contractor to provide CV's and qualifications in built environment relating to construction building works (Engineers, Technologists, technicians, QS or Architect) with similar minimum experience of 3 years in the construction industry. a) Owner on ck (Engineer, Technologist, Technician, QS or Architect) = 5 points b) Project Manager or foreman (Engineers, Technologists, Technicians, QS or Architect) = 4 points Failure to attach both CV and certified qualification will results in zero score	30
4. Tenderers ability to provide a letter of intent for the provision of a guarantee a) A letter from a registered financial institution confirming the intent to provide a guarantee equivalent to 10% of the bidders price on form of offer = 5 points b) Should the bidder opt for any other options on the DPW 07 other than the 10% payment reduction will receive = 4 points c) (Payment reduction of 10% of the value certified in the payment certificate will not be scored). Failure to choose any security guarantee will results in zero score	20
Total	**100 Points**

(Weightings will be multiplied by the scores allocated during the evaluation process to arrive at the total functionality points)

Minimum functionality score to qualify for further evaluation:	**50**

D. ELIGIBILITY IN RESPECT OF RISK TO EMPLOYER:

Standard risk management assessment criteria in respect of tenders received for routine projects in the engineering and construction works environments:

Tender offers will be evaluated by an Evaluation Committee based on the technical and commercial risk criteria listed hereunder. Each criterion carries the same weight / importance and will be evaluated individually based on reports presented to the Bid Evaluation Committee by the Professional Team appointed on the project. A tender offer will be declared non-responsive and removed from any further evaluation if any one criterion is found to present an unacceptable risk to the Employer.

In order for the evaluation reports to be prepared by the Professional Team, the Tenderer is obliged to provide comprehensive information on form DPW-09 (EC). Failure to complete the said form will cause the tender to be declared non-responsive and removed from any further consideration. The Employer reserves the right to request additional information over and above that which is provided by the Tenderer on said form. The information must be provided by the Tenderer within the stipulated time as determined by the Bid Evaluation Committee, failing which the tender offer will *mutatis mutandis* be declared non-responsive.

D.1 Technical risks:

Criterion 1: Experience on comparable projects during the past 10 years.

The tendering Service Provider's experience on comparable projects during the past 10 years. The number of current and previous comparable projects performed by the Tenderer as per the evaluation report prepared by the Consultant Team, based on its research and inspection of a representative sample of the Tenderer's current and previous work as reflected on form DPW-09 (EC), as well as, if necessary, of any additional work executed by the Tenderer, not reflected on form DPW-09 (EC). Failing to provide contactable references will result in the tender offer will be *mutatis mutandis* declared non-responsive.

Aspects to be regarded as "comparable" includes (but may be extended according to circumstances): size of projects (measured against monetary value or other project quantifying parameters), nature of projects (building, engineering, high/low rise, etc.), locality/area of execution (site-specific influences, knowledge of local conditions, etc.), complexity of project, projects for similar client department irrespective of end purpose of buildings/facilities created or in progress of being created and time scales of projects (normal, fast track, etc.) and stage of its/their development.

Criterion 2: Contractual commitment and quality of performance on comparable projects during the past 10 years.

Adherence to contractual commitments and quality of performance of comparable current and previous projects performed by the Tenderer on comparable projects during the past 10 years as per the evaluation report prepared by the Consultant Team, based on its research and inspection of a representative sample of the Tenderer's current and previous work as reflected on form DPW-09 (EC), as well as, if necessary, of any additional work executed by the Tenderer, not reflected on form DPW-09 (EC). Failing to provide contactable references will result in the tender offer be *mutatis mutandis* declared non-responsive.

Aspects to be considered include, but are not limited to the following:

1. The level of progress on current projects in relation to the project programme or, if such is not available/applicable, to the contractual construction period in general;
2. The degree to which previous projects have been completed within the contractual completion periods and/or extensions thereto, and the extend of penalties imposed;

	3. Project performance: time management & programming of works, timeous ordering of materials and appointment of subcontractors; 4. Financial management: payment to suppliers and cash flow problems; 5. Quality of workmanship: extent of reworks and timeous attention to remedial works; 6. Personnel resources: suitably qualified and experienced, turnover in site staff and labour force, specifically site manager and foreman; 7. Personnel management: extent of labour disputes and ability to resolving labour disputes amicably; 8. Sub-contractors: extent of turnover in subcontractors, general liaison and payment problems experienced; 9. Contract administration: contractual aspects such as complying to laws and regulations, insurances, security, submission of required documentation timeously, reaction to written contract instructions, appointments of subcontractors, etc. as can generally be expected in standard/normal conditions of contract. 10. Health & Safety: adherence to regulations and compliance, and number of transgressions & serious incidents. 11. Plant & equipment: sufficient resources on site and in time. 12. Delays: extent of causing delays, submission of claims timeously, and abuse of or exaggerated delay claims. 13. Final account: extent to which the contractor assisted in finalising the final account. **Criterion 3: Suitably qualified and appropriately experienced human resources** Allocation of suitably qualified and appropriately experienced human resources, both in respect of principals and/or other staff (contract manager, site agent, site foreman including other professional, technical and/or administrative) of the tendering Service Provider to the project, as proof that the tendering Service Provider will be able to react/respond appropriately to the Services required herein. The Company Organogram with CV's and certified ID's of all principals and employed workforce as well as proof of Professional Registration will be verified. Current and future workload of the tenderer in relation to capacity and capability will also be considered. The tenderer should demonstrate that he or she possesses the necessary professional and technical qualifications and -competence in relation to the scope of work and work to be undertaken. **Criterion 4: Attendance of compulsory bid clarification meeting, if applicable** If applicable, submission of confirmation of DPW-16.1 (PSB) attendance of compulsory bid clarification meeting or proof of attending the compulsory virtual meeting by a suitably qualified and experienced representative of the tenderer in terms of PA-04 (EC): Notice and Invitation to Tender. **D.2 Commercial risks:** The financial viability assessment evaluates the risk over the life of the construction period, as to whether the tenderer will be able to deliver the goods and services which are specified in the contract and / or be able to fulfil guarantees or warranties provided for in the contract in order to complete the project successfully for the amount tendered. Aspects to be considered include but are not limited to, the respective rates tendered, bank rating, financial capability and capacity whether the tenderer has or has access to sufficient financial resources to deliver the goods or services described in the tender documentation (including fulfilling any guarantees or warranty claims), whether the tenderer is not subject to any current or impending legal action (either formal proceedings or notification of legal action) which could impact on the financial standing of the tenderer or the delivery of the goods or services, financial report from auditors as proof of current liquidity, and company or any parent company or investor guarantee/s and financial statements.
C.2.7	For particulars regarding a pre-tender site inspection meeting, see Notice and Invitation to Tender T1.1

C.2.12	If a tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements. A tenderer may submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. Provided that the tenderer's main tender offer is according to specification and would under normal circumstances be recommended for acceptance, his alternative tender offer may also be considered for the purpose of the award of the contract. Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal. Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements. The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed. Alternative tender offer permitted: **Yes** ☐ **No** ☒
C.2.13.2	The list of Returnable Documents identifies which of the documents a tenderer must complete when submitting a tender offer. The tenderer must submit his tender offer by completing the Returnable Documents, signing the "Offer" section in the "Form of Offer and Acceptance" and delivering the Returnable Documents back to the Department.
C.2.13.5	The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are as per Notice and Invitation to Tender T1.1.
C.2.13.6 **C.3.5**	A two-envelope procedure will not be followed.
C.2.15	The closing time for submission of tender offers is as per Notice and Invitation to Tender T1.1.
C.2.16	The tender offer validity period is as per Notice and Invitation to Tender T1.1.
C2.16.3	Omit the wording of the last sentence for those projects which are subject to CPAP
C.2.18	The tenderer will be required to submit his fully priced Bills of Quantities / Lump Sum Document (complete document inclusive of all parts): ☒ Together with his tender; or ☐ The tenderer shall submit his fully priced and completed sectional summary- and final summary pages with the tender and thereafter submit the fully completed Bills of Quantities within fourteen (14) calendar days of the date requested to do so prior to the award of the contract.
C.2.19	Access shall be provided for inspections, tests and analysis as may be required by the Employer.
C.3.4.1 **C.3.4.2**	The location for opening of the tender offers, immediately after the closing time thereof shall be at: ***Polokwane Regional Office, 78 Hans van Rensburg street, Procurement office no. 10***
C.3.8	The words "responsive tender" and "acceptable tender" shall be construed to have the same meaning.

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C.3.9.3	Omit the wording and replace with the following: "Notify the tenderer of all errors, omissions and/or rate imbalances that are identified in the tender offer and request the tenderer to, within a stipulated time, accept the total of prices as corrected in accordance with C.3.9.4."
C.3.9.4	Omit the wording of the first sentence and replace with the following: "In cases where tender offers contain errors, omissions and/or rate imbalances, these are to be corrected as follows:"
C.3.9.4	Add sub paragraph c) to C.3.9.4, as follows: "c) If the tenderer does not accept the corrected tender offer, or cannot reach consensus with the Employer on a corrected tender offer, the tender is to be classified as not acceptable/non responsive and removed from further contention."
C.3.11.1	The procedure for the evaluation of responsive tenders is Method 2: Financial Offer and Preference.
C.3.13	Add the following to sub paragraph a), as follows: The tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004) as a person prohibited from doing business with the public sector;
C.3.17	Provide to the successful tenderer one copy of the signed contract document.

VOLUME 2: RETURNABLE DOCUMENTS

T2.1 List of Returnable Documents

Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

PA-09 (EC): LIST OF RETURNABLE DOCUMENTS

Project title:	***Thohoyandou High Court: Repair and Renovations***		
Tender / Quotation no:	PLK23/09	**Reference no:**	6054/0070
Receipt Number:			

1. RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

Note: Failure to submit the applicable documents will result in the tender offer being disqualified from further consideration.

Tender document name	Number of pages issued	Returnable document
Form of Offer and Acceptance (DPW-07 EC)	4 Pages	Yes
Submission of Bidder's disclosure (PA-11)	3 Pages	Yes
Resolution of Board of Directors (PA-15.1) *(if applicable)*	1 Page	Yes
Resolution of Board of Directors to enter into Consortia or JV's (PA-15.2) *(if applicable)*	2 Pages	Yes
Special Resolution of Consortia or JV's (PA-15.3) *(if applicable)*	3 Pages	Yes
Preference points claim form in terms of the Preferential Procurement Regulations 2017 (PA – 16.1)	5 Pages	Yes
Declaration Certificate for Local Production and Content for designated sectors (PA – 36 and Annexure/s C)	3	Yes
Fully completed Declaration of Designated Groups for Preferential Procurement (PA 40)	2 Pages	Yes
Registration on National Treasury's Central Supplier Database (CSD).	-	Yes
Particulars of Tenderer's Projects (DPW-09 EC)	2 Pages	Yes
Site Inspection Meeting Certificate (DPW-16 EC) (*if applicable*).	1 Page	No
Record of attending compulsory virtual bid clarification / site inspection meeting (if applicable).	1 Page	No
Record of Addenda to tender documents (DPW-21 EC)	1 Page	Yes
Proof of 30% Subcontracting participation and related documents in terms of the Preferential Procurement Regulations 2017 (*if applicable).*	N/A	N/A

* In compliance with the requirements of the cidb SFU Annexure G

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2. ADDITIONAL RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES
Note: Failure to submit the applicable documents will result in the Tenderer having to submit same upon request within a stipulated time and if not complied with, will result in the tender offer being disqualified from further consideration. [See also C.2.18 of the Standard Conditions of Tender]

Tender document name	Number of pages issued	Returnable document
Any additional information required to complete a risk assessment *(if applicable)*	-	Yes
Any correction to be initialled by the person authorised to sign the tender documentation as per PA 15.1 or PA 15.2 resolution of board/s of directors / or PA15.3 Special Resolution of Consortia or JV's .		
Submission of applicable (PA-15.1, PA-15.2, PA-15.3): Resolution by the legal entity, or consortium / joint venture, authorising a dedicated person(s) to sign documents on behalf of the firm / consortium / joint venture.		Yes

3. RETURNABLE DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT
Note: Failure to submit the applicable documents will result in the Tenderer having to submit same upon request within a stipulated time and if not complied with, will result in the tender offer being disqualified from further consideration. [See also C.2.18 of the Standard Conditions of Tender]

Tender document name	Number of pages issued	Returnable document
Schedule of proposed sub-contractors (DPW-15 EC) *(if applicable)*	1 Page	Yes
Particulars of Electrical Contractor (DPW-22 EC) *(if applicable)*	1 Page	Yes
Mechanical / Electrical / Security Work material and equipment schedules *(if applicable)*	32 + 101 Pages	Yes
Schedule for Imported Materials and Equipment (DPW-23 EC) *(if applicable)*	1 Page	Yes

4. OTHER DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT
(Insert a tick in the "Returnable document" column to indicate which documents must be returned with the tender)

Note: Failure to submit the applicable documents will result in the tender offer being disqualified from further consideration.

Tender document name	Number of pages issued	Returnable document
Priced Bills of Quantities / Lump Sum Document (complete document inclusive of all parts)	174+2+2 Pages	☒Yes ☐No
Fully priced and completed sectional summary- and final summary pages with the tender.	Pages	☒Yes ☐No

Tender / Quotation no: PLK23/09

Tender document name	Number of pages issued	Returnable document
insert document name	Pages	☐Yes ☐No
insert document name	Pages	☐Yes ☐No
insert document name	Pages	☐Yes ☐No

5. ADDITIONAL INFORMATION THAT MAY BE REQUIRED FOR TENDER EVALUATION PURPOSES

Legal Status of Tendering Entity: **If the Tendering Entity is:**	**Documentation to be submitted with the tender, or which may be required during the tender evaluation:**
a. A close corporation, incorporated prior to 1 May 2011 under the Close Corporations Act, 1984 (Act 69 of 1984, as amended)	Copies of the Founding Statement – CK1
b. A profit company duly registered as a private company. [including a profit company that meets the criteria for a private company, whose Memorandum of Incorporation states that the company is a personal liability company in terms of Section 8(2)(c) of the Companies Act, 2008 (Act 71 of 2008, as amended)].	Copies of: i. Certificate of Incorporation – CM1; ii. Shareholding Certificates of all Shareholders of the company, plus a signed statement of the company's Auditor, certifying each Shareholder's ownership / shareholding percentage relative to the total; and/or iii. Memorandum of Incorporation in the case of a personal liability company.
c. A profit company duly registered as a private company in which any, or all, shares are held by one or more other close corporation(s) or company(ies) duly registered as profit or non-profit company(ies).	Copies of documents referred to in a. and/or b. above in respect of all such close corporation(s) and/or company(ies).
d. A profit company duly registered as a public company.	Copy of Certificate of Incorporation – CM1, and a signed statement of the company's Secretary or Auditor confirming that the company is a public company.
e. A non-profit company, incorporated in terms of Section 10 and Schedule 1 of the Companies Act, 2008 (Act 71 of 2008, as amended).	Copies of: I the Founding Statement – CK1; and ii the Memorandum of Incorporation setting out the object of the company, indicating the public benefit, cultural or social activity, or communal or group interest.
f. A natural person, sole proprietor or a Partnership	Copy(ies) of the Identity Document(s) of: i. such natural person/ sole proprietor, or each of the Partners to the Partnership.
g. A Trust	Deed of Trust duly indicating names of the Trustee(s) and Beneficiary (ies) as well as the purpose of the Trust and the mandate of the Trustees.

Signed by the Tenderer

Name of representative	**Signature**	**Date**

C1.1 Form of Offer and Acceptance

Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

DPW-07 (EC): FORM OF OFFER AND ACCEPTANCE

Project title:	***Thohoyandou High Court: Repairs and Renovations***		
Tender / Quotation no:	PLK23/09	**Reference no:**	*6054/0070*

OFFER

The Employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:
Thohoyandou High court: Repairs and Renovations

The Tenderer, identified in the offer signature block, has 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.

By the representative of the Tenderer, deemed to be duly authorized, 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 TOTAL OFFER INCLUSIVE OF ALL APPLICABLE TAXES ("All applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies) IS:

Rand (in figures) **R** ……

Rand (in words)……

……

……

The amount in words takes precedence over the amount in figures. The award of the tender may be subjected to further price negotiation with the preferred tenderer(s). The negotiated and agreed price will be considered for acceptance as ***a firm and final offer***.

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 to the Tenderer before the end of the period of validity stated in the tender data, whereupon the Tenderer becomes the party named as the Contractor in the conditions of contract identified in the contract data.

THIS OFFER IS MADE BY THE FOLLOWING LEGAL ENTITY: (cross out block which is not applicable)

Company or Close Corporation: …… …… And: Whose Registration Number is: …… And: Whose Income Tax Reference Number is: …… CSD supplier number:……	**OR**	Natural Person or Partnership: …… …… Whose Identity Number(s) is/are: …… Whose Income Tax Reference Number is/are: …… .. CSD supplier number:……

*Any reference to words "Bid" or "Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".
**Any reference to the words "payment reduction" herein shall be construed to have the same meaning as the word "retention"

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AND WHO IS (if applicable):	
Trading under the name and style of: ……	
AND WHO IS:	
Represented herein, and who is duly authorised to do so, by: Mr/Mrs/Ms: ……... In his/her capacity as: …….	**Note:** **A Resolution / Power of Attorney, signed by all the Directors / Members / Partners of the Legal Entity must accompany this Offer, authorising the Representative to make this offer.**

SIGNED FOR THE TENDERER:

Name of representative	Signature	Date

WITNESSED BY:

Name of witness	Signature	Date

This Offer is in respect of: (Please indicate with an "X" in the appropriate block)
The official documents …… ☐
The official alternative …… ☐
Own alternative (only if documentation makes provision therefore) …… ☐

(N.B.: Separate Offer and Acceptance forms are to be completed for the main and for each alternative offer)

SECURITY OFFERED:

(a) the Tenderer accepts that in respect of contracts up to R1 million, a payment reduction** of 5% of the contact value (excluding VAT) will be applicable and will be deducted by the Employer in terms of the applicable conditions of contract

(b) in respect of contracts above R1 million, the Tenderer offers to provide security as indicated below:

(1) cash deposit of 10 % of the Contract Sum (excluding VAT) **Yes** ☐ **No** ☐

(2) variable construction guarantee of 10 % of the Contract Sum (excluding VAT) **Yes** ☐ **No** ☐

(3) payment reduction of 10% of the value certified in the payment certificate (excluding VAT) **Yes** ☐ **No** ☐

(4) cash deposit of 5% of the Contract Sum (excluding VAT) and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT) **Yes** ☐ **No** ☐

(5) fixed construction guarantee of 5% of the Contract Sum (excluding VAT) and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT) **Yes** ☐ **No** ☐

NB. Guarantees submitted must be issued by either an insurance company duly registered in terms of the Insurance Act [Long-Term Insurance Act, 1998 (Act 52 of 1998) or Short-Term Insurance Act, 1998 (Act 35 of 1998)] or by a bank duly registered in terms of the Banks Act, 1990 (Act 94 of 1990) on the pro-forma referred to above. No alterations or amendments of the wording of the pro-forma will be accepted.

*Any reference to words "Bid" or "Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".
**Any reference to the words "payment reduction" herein shall be construed to have the same meaning as the word "retention"

Tender / Quotation no: PLK23/09

The Tenderer elects as its *domicilium citandi et executandi* in the Republic of South Africa, where any and all legal notices may be served, as (physical address):

……

……

Other Contact Details of the Tenderer are:

Telephone No……. Cellular Phone No. ……

Fax No ……..

Postal address ……

Banker …… Branch……..

Registration No of Tenderer at Department of Labour ……

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 Agreement and contract data, (which includes this agreement)
Part C2 Pricing data
Part C3 Scope of work
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 as listed in the tender 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 agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The Tenderer shall within two weeks after 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. 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 (5) working days of the date of such receipt notifies the employer in writing of any reason why he/she cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

For the Employer:

Name of signatory	Signature	Date

*Any reference to words "Bid" or "Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".
**Any reference to the words "payment reduction" herein shall be construed to have the same meaning as the word "retention"

Tender / Quotation no: PLK23/09

Name of Organisation:	Department of Public Works and Infrastructure
Address of Organisation:	

WITNESSED BY:

Name of witness	Signature	Date

Schedule of Deviations

1.1.1. Subject:
Detail:

1.1.2. Subject:
Detail:

1.1.3. Subject:
Detail:

1.1.4. Subject:
Detail:

1.1.5. Subject:
Detail:

1.1.6. Subject:
Detail:

By the duly authorised representatives signing this agreement, the Employer and the Tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as 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 Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

*Any reference to words “Bid” or “Bidder” herein and/or in any other documentation shall be construed to have the same meaning as the words “Tender” or “Tenderer”.
**Any reference to the words “payment reduction” herein shall be construed to have the same meaning as the word “retention”

C2.2 Bills of Quantities

SECTION 1

PRELIMINARIES

MEANING OF TERMS “TENDER / TENDERER”

Any reference to the words “Tender" or "Tenderer" herein and/or in any other documentation shall be construed to have the same meaning as the words "Bid" or "Bidder"

BUILDING AGREEMENT AND PRELIMINARIES

The **JBCC** Principal Building Agreement (Edition 6.2 – May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described

The **JBCC** Principal Building Agreement **contract data for organs of state and other public sector bodies** forms an integral part of this **agreement**

The **JBCC** General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the **JBCC** Principal Building Agreement (Edition 6.2 – May 2018) shall be deemed to be incorporated in these **bills of quantities / lump sum document**, amended as hereinafter described

The **contractor** is deemed to have referred to the abovementioned documents for the full intent and meaning of each clause

The clauses in the abovementioned documents are hereinafter referred to by clause number and heading only

Where any item is not relevant to this **agreement** such item is marked N/A signifying "not applicable"

Where standard clauses or alternatives are not entirely applicable to this **agreement** such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the abovementioned documents

TENDERER’S SELECTIONS

Before submission of his tender the **contractor** is to complete the tenderer's selections in the **contract data for organs of state and other public sector bodies**

STRUCTURE OF THIS PRELIMINARIES BILL

Section A : A recital of the headings of the individual clauses in the aforementioned **JBCC** Principal Building Agreement

Section B : A recital of the headings of the individual clauses in the aforementioned **JBCC** General Preliminaries

Section C : Any special clauses to meet the particular circumstances of the project

PRICING OF PRELIMINARIES

Should the **contractor** select Option A in the **contract data for organs of state and other public sector bodies** for the adjustment of **preliminaries**, the amounts entered against the relevant items in these **preliminaries** are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T)

PRICING OF BILLS OF QUANTITIES

The **contractor** is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this **agreement**.

Items left unpriced will be deemed to be covered in prices against other items throughout these **bills of quantities** and no claim for any extras arising out of the **contractor's** omission to price any item will be entertained

Prices for all **construction equipment**, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary

VALUE ADDED TAX

Provision is made in the summary page of these **bills of quantities** / lump sum document for the inclusion of Value Added Tax (VAT)

SECTION A: PRINCIPAL BUILDING AGREEMENT

INTERPRETATION

A1.0 **DEFINITIONS AND INTERPRETATION**

Clause 1.0

The following definitions replace corresponding definitions or are added to the definitions in the JBCC PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018), whatever the case may be

ADVERSE WEATHER CONDITIONS: Adverse weather and inclement weather has the same meaning and used interchangeably and means any weather conditions i.e.: Rain, wind, snow, frost, temperature (cold or heat) that are not in the norm for the area where the construction takes place and during which no work is possible on site

AGREEMENT: The completed Form of Offer and Acceptance, the completed JBCC® Principal Building Agreement and contract data for organs of state and other public sector bodies, the contract drawings, the priced document and any other documents reduced to writing and signed by the authorised representative or representatives of the parties

CONSTRUCTION PERIOD: The period commencing on the date of possession of the **site** by the **contractor** and ending on the date of **practical completion**

CONTRACT PERIOD: The period commencing on the date of the letter of acceptance and ending on the date of final completion

COST FLUCTUATION shall mean contract price adjustment provision (CPAP) for the adjustment of fluctuation in the cost of labour, plant, material and goods as stated in the schedule

DEFAULT INTEREST: No Clause

GUARANTEE FOR CONSTRUCTION: A security in terms of the DPW's Guarantee for Construction form/s, obtained by the contractor from an institution approved by the employer [CD]

INTEREST: The interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be the rate as determined by the Minister of Finance from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No 1 of 1999) as amended, calculated as simple interest, in respect of debts owing to the State, and will be the rate as published by the Minister of Justice and Correctional Services from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No 55 of 1975) as amended, calculated as simple interest, in respect of debts owing by the State

LETTER OF ACCEPTANCE: The letter of formal acceptance of the Contractor's or Service Provider's Tender / Bid, issued and signed by the Employer

PAYMENT CERTIFICATE: A certificate issued at regular agreed intervals [CD] by the principal agent to the parties certifying the amount due and payable in terms of Clause 25.3

PRINCIPAL AGENT: The person or entity appointed by the **employer** and named in the **contract data for organs of state and other public sector bodies.** In the event of a **principal agent** not being appointed, then all the duties and obligations of a **principal agent** as detailed in the **agreement** shall be fulfilled by the employer's representative as named in the **contract data for organs of state and other public sector bodies**

TARGETED SUBCONTRACTORS: Subcontractors that must be appointed to a total of 30% or more of the contract sum, by the contractor, projects with a contract sum of the amount determined by the Minister in terms of the latest Preferential Procurement regulations, as may be amended from time to time.

F:..... V:..... T:..... Item

A2.0 **LAW, REGULATIONS AND NOTICES**

Clause 2.0

F:..... V:..... T:..... Item

A3.0 **OFFER AND ACCEPTANCE**

Replace Clause 3.3 with the following:
This **agreement** shall come into force on the date of **letter of acceptance** and continue to be of force and effect until the end of the **latent defects** liability period [22.0] notwithstanding termination [29.0] or the certification of **final completion** [21.0] and final payment [25.0]

F:..... V:..... T:..... Item

A4.0 **CESSION AND ASSIGNMENT**

Clause 4.0

Ref Clause 6.7 [CD] - Clause 4.2

Replace Clause 4.3 with the following:
Where a **contractor** cedes any right or any monies due to or to become due under this **agreement** as security in favour of a financial institution, the prior written consent of the **employer,** which consent shall not be unreasonably withheld, must be obtained

F:..... V:..... T:..... Item

A5.0 **DOCUMENTS**

Clause 5.0

Replace last sentence of Clause 5.2 with the following:
The original signed **agreement** shall be held by the **Employer**

Replace Clause 5.4 with the following:
The Bills of Quantities shall not be used as a specification of material and goods or methods unless so instructed by the Principal Agent. The contractor may not use the Bills of Quantities for purpose of ordering material. All dimensions and quantities must be determined on site before ordering. In the event of discrepancy between the drawings and Bills of Quantity, the drawings shall take preference

Replace Clause 5.5 with the following:
The parties may publish or disclose on any platform only the contract scope and contract amount

F:..... V:..... T:..... Item

A6.0 **EMPLOYER'S AGENTS**

Clause 6.0

Replace Clause 6.5 with the following:
Where the principal agent and/or an agent fails to act or is unable to act or ceases to be the principal agent or an agent in terms of this agreement, the employer shall appoint another principal agent and/or an agent

Add the following as Clause 6.7:
In terms of the clauses listed hereunder, the employer has retained its authority and has not given a mandate to the principal agent, notwithstanding other provisions in the contract. The employer shall sign all documents in relation to clauses 4.2, 14.1.4, 14.4.1, 14.6, 15.1.4, , 15.4.1, 23.1, 23.2, 23.3, 23.7, 23.8, 26.1, 26.7, 26.12

F:..... V:..... T:..... Item

A7.0 **DESIGN RESPONSIBILITY**

Clause 7.0

Replace first sentence of Clause 7.2 with the following:
Any design responsibility undertaken by a subcontractor shall not devolve on the contractor except for items that require specific component design and or compatibility design and or shop drawings and or the assembly thereof

F:..... V:..... T:..... Item

INSURANCES AND SECURITIES

A8.0 **WORKS RISK**

Clause 8.0

Replace Clause 8.4 with the following:
The **contractor** shall bear the full risk of damage to and/or destruction of the **works** by whatever cause during construction of the **works** and hereby indemnifies and holds harmless the **employer** against any such damage. The **contractor** shall take such precautions and security measures and other steps for the protection and security of the **works** as the **contractor** may deem necessary

F:..... V:..... T:..... Item

A9.0 **INDEMNITIES**

Clause 9.0

Add the following to the end of the first sentence of Clause 9.2.7:
"…. due to no fault of the **contractor**

9.2.9 No Clause

9.2.10 No Clause

Add the following as clause 9.3:
The employer's rights to claim damages for the contractor's omissions and actions will not be affected.

F:..... V:..... T:..... Item

A10.0 **INSURANCES**

Clause 10.0

Replace Clause 10.1 with the following:
The party responsible shall effect and keep the respective insurances [CD] in force, in favour of the employer as beneficiary , from the date of possession of the site until the issue of the certificate of practical completion and with an extension to cover the contractors obligations after the date of practical completion [8.2.2]

Add the following as Clause 10.1.5.1:
Hi Risk Insurance
In the event of the project being executed in a geological area classified as a "High Risk Area", that is an area which is subject to highly unstable sub-surface conditions that might result in catastrophic ground movement evident by sinkhole or doline formation the following will apply

Add the following as Clause 10.1.5.1.1 Damage to the works
The contractor shall, from the date of possession of the **site** until the date of the **certificate of practical completion**, bear the full risk of and hereby indemnifies and holds harmless the **employer** against any damage to and/or destruction of the **works** consequent upon a catastrophic ground movement as mentioned above. The **contractor** shall take such precautions and security measures and other steps for the protection of the **works** as he may deem necessary

When so instructed to do so by the **principall agent**, the **contractor** shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the **works** and to rebuild, restore, replace and/or repair the **works**, at the **contractor's** own costs

10.1.5.1.2 Injury to persons or loss of or damage to property
The **contractor** shall be liable for and hereby indemnifies and holds harmless the **employer** against any liability, loss, claim or proceeding arising at any time during the period of the contract whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of or caused by a catastrophic ground movement as mentioned above

The **contractor** shall be liable for and hereby indemnifies the **employer** against any and all liability, loss, claim or proceeding consequent upon loss of or damage to any moveable, or immovable property, or personal property, or property contiguous to the **site,** whether belonging to or under the control of the **employer** or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned above, which occurred during the period of the contract

10.1.5.1.3 Replace Clause with the following:
It is the responsibility of the **contractor** to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.1.5.1.1 and 10.1.5.1.2. Without limiting the **contractor's** obligations in terms of the contract, the **contractor** shall, within twenty-one (21) **calendar days**

of the date of letter of acceptance, but before commencement of the **works**, submit to the **employer** proof of such insurance policy.

10.1.5.1.4 Replace Clause with the following:
The **employer** shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred consequent upon the **contractor's** default of his obligations as set out in 10.1.5.1.1; 10.1.5.1.2 and 10.1.5.1.3. Such losses or damages may be recovered from the **contractor** or by deducting the same from any amounts still due under this contract or under any other contract presently or hereafter existing between the **employer** and the **contractor** and for this purpose all these contracts shall be considered one indivisible whole

10.2 Replace Clause with the following:
Where practical completion in sections is required [20.0), or where the works is for alterations and additions, the contractor shall effect and keep in force contract works insurance [10.1.1], supplementary insurance [10.1.2], public liability insurance [10.1.3] and where applicable, removal of lateral support insurance [10.1.4] and other insurances [10.1.5) in favour of the employer as beneficiary

10.6 No Clause

Add the following as Clause 10.11
In the event that an insurer dispute the amount of the claim to be paid to the employer, the contractor shall be liable to the employer for the difference between the claim (as determined by the employers QS appointed on the project) made by the employer and the amount that the insurer is willing to pay

F:..... V:..... T:..... Item

A11.0 **SECURITIES**

Add the following as to the relevant related Clauses as follows:

Add the following to Clause 11.1:

In respect of contracts with a contract sum up to R1 million, the security to be provided by the contractor to the employer will be a payment reduction of five per cent (5%) of the value certified in the payment certificate (excluding VAT).

In respect of contracts with a contract sum above R1 million, the contractor shall have the right to select the security to be provided in terms of C 1.0 Securities, as stated in the schedule. Such security shall be provided to the employer within fifteen (15) working days from commencement date. Should the contractor fail to select the security to be provided or should the contractor fail to provide the employer with the selected security within fifteen (15) working days from commencement date, the security in terms of C 1.0 Option C shall be deemed to have been selected.

The payment reduction of the value certified in a payment certificate shall be mutatis mutandis in terms of 25.12.1 - 25.12.5

11.1.1 No Clause

11.1.2 No Clause

11.2.2 No Clause

11.3 No Clause

Replace Clause 11.4.1 with the following:
Hand over the site to the contractor and withhold an amount equal to ten per cent (10%) of each interim payment certificate until practical completion is achieved. The value certified shall be subject to the adjustments in terms of 25.12.6 to 25.12.10.

11.5 No Clause

11.6 No Clause

11.7 No Clause

11.8 No Clause

11.9 No Clause

11.10 No Clause

Add the following as Clause 11.11:
Where the security as a cash deposit of ten per cent (10%) of the contract sum (excluding VAT) has been selected:

Add the following as Clause 11.11.1:
The contractor shall furnish the employer with a cash deposit equal in value to ten percent (10%) of the contract sum (excluding VAT) within fifteen (15) working days from commencement date. Failure to furnish the employer with a cash deposit within fifteen (15) working days Clause 11.4 will apply mutatis mutandis.

Add the following as Clause 11.11.2:
The employer shall be entitled to recover expense and loss from the cash deposit in terms of Clause 27.0 provided that the employer notifies the Contractor in which event the employer's entitlement shall take precedence over his obligations to refund the cash deposit security or portions thereof to the contractor.

Add the following as Clause 11.11.3:
Within fifteen (15) working days of the date of practical completion of the works the employer shall reduce the cash deposit to an amount equal to three per cent (3%) of the contract value (excluding VAT) and refund the balance to the contractor

Add the following as Clause 11.11.4:
Within fifteen (15) working days of the date of final completion of the works the employer shall reduce the cash deposit to an amount equal to one per cent (1%) of the contract value (excluding VAT) and refund the balance to the contractor.

Add the following as Clause 11.11.5:
On the date of payment of the amount in the final payment certificate, the employer shall refund the remainder of the cash deposit to the contractor.

Add the following as Clause 11.11.6:
The parties expressly agree that neither the employer nor the contractor shall be entitled to cede the rights to the deposit to any third party.

Add the following as Clause 11.12:
Where security as a variable construction guarantee of ten percent (10%) of the contract sum (excluding VAT) has been selected:

Add the following as Clause 11.12.1:
The contractor shall furnish the employer with an acceptable variable construction guarantee equal in value to ten per cent (10%) of the contract sum (excluding VAT) within fifteen (15) working days after issuance of the letter of acceptance. Failure to submit an acceptable variable construction guarantee within fifteen (15) working days Clause 11.4 will apply mutatis mutandis.

Add the following as Clause 11.12.2:
The variable construction guarantee shall reduce and expire in terms of the Variable Construction Guarantee form included in the invitation to tender.

Add the following as Clause 11.12.3:
The employer shall return the variable construction guarantee to the contractor within fourteen

(14) calendar days of it expiring.

Add the following as Clause 11.12.4:
Where the employer has a right of recovery against the contractor in terms of 27.0, the employer shall issue a written demand in terms of the variable construction guarantee.

Add the following as Clause 11.13:
Where security as a fixed construction guarantee of five per cent (5%) of the contract sum (excluding VAT) and a five per cent (5%) payment reduction of the value certified in the payment certificate (excluding VAT) has been selected:

Add the following as Clause 11.13.1:
The contractor shall furnish a fixed construction guarantee to the employer equal in value to five per cent (5%) of the contract sum (excluding VAT).

Add the following as Clause 11.13.2:
The fixed construction guarantee shall come into force on the date of issue and shall expire on the date of the last certificate of practical completion.

Add the following as Clause 11.13.3:
The employer shall return the fixed construction guarantee to the contractor within fourteen (14) calendar days of it expiring.

Add the following as Clause 11.13.4:
The payment reduction of the value certified in a payment certificate shall be mutatis mutandis in terms of 25.12.1 - 25.12.5.

Add the following as Clause 11.13.5:
Where the employer has a right of recovery against the contractor in terms of 27.0, the employer shall be entitled to issue a written demand in terms of the fixed construction guarantee or may recover from the payment reduction or from both.

Add the following as Clause 11.14.1:
Where security as a cash deposit of five per cent (5%) of the contract sum (excluding VAT) and a payment reduction of five per cent (5%) of the value certified in the payment certificate (excluding VAT) has been selected:

Add the following as Clause 11.14.2:
The contractor shall furnish the employer with a cash deposit equal in value to five per cent (5%) of the contract sum (excluding VAT) within fifteen (15) working days from commencement date. Failure to submit a cash deposit within fifteen (15) working days Clause 11.4 will apply mutatis mutandis.

Add the following as Clause 11.14.3:
Within fifteen (15) working days of the date of practical completion of the works the employer shall refund the cash deposit in total to the contractor.

Add the following as Clause 11.14.4:
The payment reduction of the value certified in a payment certificate shall be mutatis mutandis in terms of 25.12.1 - 25.12.5.

Add the following as Clause 11.14.5:
Where the employer has a right of recovery against the contractor in terms of 27, the employer may recover from the payment reduction or cash deposit or from both.

Add the following as Clause 11.15:
Where security as a payment reduction of ten per cent (10%) of the value certified in the payment certificate (excluding VAT) has been selected.

Add the following as Clause 11.15.1:
The payment reduction of the value certified in a payment certificate shall be mutatis mutandis in terms of 25.12.6 to 25.12.10.

Add the following as Clause 11.15.2:
The employer shall be entitled to recover expense and loss from the cash deposit in terms of 27.0 provided that the employer notifies the Contractor in which event the employer's entitlement shall take precedence over his obligations to refund the cash deposit security or portions thereof to the contractor.

Add the following as Clause 11.16:
Payments made by the guarantor to the employer in terms of the fixed or variable construction guarantee shall not prejudice the rights of the employer or contractor in terms of this agreement.

Add the following as Clause 11.17:
Should the contractor fail to furnish the security in terms of 11.2 the employer, in his sole discretion, and without notification to the contractor, is entitled to change the contractor's selected form of security to that of a ten per cent (10%) payment reduction of the value certified in the payment certificate (excluding VAT).

F:..... V:..... T:..... Item

EXECUTION

A12.0 **OBLIGATIONS OF THE PARTIES**

Clause 12.0

12.1.1 No Clause

Replace Clause 12.1.5 with the following:
Give possession of the site to the contractor within ten (10) working days after approval of the Health and Safety Plan or the issue of a construction permit by the Department of Labour, if applicable, after the contractor complied with the terms of 12.2.22

12.1.6 No Clause

12.1.8 No Clause

Replace Clause 12.2.2 with the following:
The priced Bills must be submitted to the Employer within fourteen (14) calendar days from date of request. Where the priced document contains errors or discrepancies and/or prices considered by the employer or principal agent to be imbalanced or unreasonable the employer or principal agent and the contractor shall adjust such prices without any change to the contract sum

Replace Clause 12.2.5 with the following :
Effect and keep in force insurances in favour of the employer as beneficiary where the contractor is responsible for providing insurances [10.0) [CD]

Replace Clause 12.2.13 with the following:
Designate a competent person full time on site to continuously administer and control the works on site and to receive and implement notices and contract instructions on behalf of the contractor

Add the following as Clause 12.2.22:
Within fourteen (14) working days of the date of the letter of acceptance submit to the principal agent an acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993)

Add the following as Clause 12.2.23:
The contractor shall within reasonable time inform the agents regarding inspection of the works before covering / closing [B 12.0]

Offices

The **contractor** shall provide, maintain and remove on completion of the **works** an office for the exclusive use of the **principal agent**, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times [12.2.18]

F:..... V:..... T:..... Item

Main notice board

The **contractor** shall provide, erect where directed, maintain and remove on completion of the **works** a notice board size 3 x 3m as type Drawing GEN 063, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick round outer edges and projecting 12mm from face of boarding and rounded on front edge. The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines dark green. All wording shall be inscribed in dark green as per the coat of arms for SA. All wording shall be inscribed in dark green painted sans serif lettering [12.2.18]

F:..... V:..... T:..... Item

A13.0 **SETTING OUT**

Clause 13.0

F:..... V:..... T:..... Item

A14.0 **NOMINATED SUBCONTRACTORS**

Clause 14.0

Ref Clause 6.7 [CD] - Clause 14.1.4

14.1.5 No Clause

Replace “principal agent ” with “employer” [6.7 [CD]] in Clause 14.4.1

Ref Clause 6.7 [CD] - Clause 14.6

F:..... V:..... T:..... Item

A15.0 **SELECTED SUBCONTRACTORS**

Clause 15.0

Ref Clause 6.7 [CD] - Clause 15.1.4 & Clause 15.5

15.1.5 No Clause

Replace Clause 15.1.2 with the following:
The principal agent shall call for tenders from a list of tenderers agreed between the contractor and the employer

Replace “principal agent ” with “employer” [6.7 [CD]] in Clause 15.4.1

F:..... V:..... T:..... Item

A16.0 **DIRECT CONTRACTORS**

Clause 16.0

F:..... V:..... T:..... Item

A17.0 **CONTRACT INSTRUCTIONS**

Clause 17.0

Replace Clause 17.4 with the following:
The contractor shall comply with and duly execute all contract instructions except any contract instruction for additional work issued after the date of practical completion other than making good physical loss and repairing damage to the works in terms of 8.0 and 21

Add the following clause as Clause 17.6:
Minutes of meetings shall not constitute a site instruction unless reduced to a written contract instruction issued by the principal agent in terms of this contract / agreement.

F:..... V:..... T:..... Item

COMPLETION

A18.0 **INTERIM COMPLETION**

Clause 18.0

F:..... V:..... T:..... N/A - -

A19.0 **PRACTICAL COMPLETION**

Clause 19.0

Replace Clause 19.5 with the following:
On issue of the only or last certificate of practical completion the employer shall be entitled to possession of the works and the site. On issue of the certificate of practical completion for a section, the employer shall be entitled to possession of such section

Add the following as Clause 19.8:
WORKS COMPLETION

(1) Within seven (7) calendar days of the date of practical completion the principal agent shall issue to the contractor a works completion list defining the outstanding work and defects apparent at the date of practical completion to be completed or rectified to achieve works completion.

(2) Where, in the opinion of the contractor, the works completion list has been completed the contractor shall notify the principal agent who shall inspect within seven (7) calendar days of receipt of such a notice. Where, in the opinion of the principal agent, the Works Completion list:

(2)(a) Has been satisfactorily completed, the principal agent shall forthwith issue a certificate of Works Completion to the contractor with a copy to the employer

(2)(b) Has not been satisfactorily completed, the principal agent shall forthwith identify the works completion list items that are not yet complete and inform the contractor thereof. The contractor shall repeat the procedure in terms of 19.8(2)

(3) Should the principal agent not issue a works completion list, in terms of 19.8 (1) or 19.8(2)(b), within seven (7) calendar days from the end of the inspection period, the contractor shall notify the employer and principal agent. Should the principal agent not issue such Works Completion list within seven (7) calendar days of receipt of such

notice, the employer may within seven (7) calendar days issue to the contractor a Works Completion list. Should the employer:

(3)(a) Not issue such works completion list within seven (7) calendar days, then the certificate of Works Completion shall be deemed to have been issued on the date of expiry of the initial notice period and works completion shall be deemed to have been achieved on such date

(3b) Issue a works completion list and the work on Works Completion list not have been completed or where further defects have become apparent, the employer shall forthwith identify such items on the updated works completion list and notify the contractor. The contractor shall repeat the procedure in terms of 19.8(2)(b) until such items have been completed to the satisfaction of the employer

(4) Should the works completion list not be completed to the satisfaction of the employer within a period of twenty one (21) working days of the issue first works completion list the contractor shall be liable to a daily penalty as described in B12.0

(5) The defects liability period in terms of 21.1 shall commence with the issue or deemed issue of the certificate of Works Completion in terms of 19.8(2)(a) or 19.8(3).

F:..... V:..... T:..... Item

A20.0 **COMPLETION IN SECTIONS**

Clause 20.0

Add the following as Clause 20.2.1.A
A certificate of Works Completion [19.8]

F:..... V:..... T:..... Item

A21.0 **DEFECTS LIABILITY PERIOD AND FINAL COMPLETION**

Clause 21.0

Replace Clause 21.1 with the following:
The defects liability period for the works shall commence on the calendar day following the date of works completion and end at midnight (00:00) ninety (90) calendar days from the date of works completion [CD] or when work on the list for completion has been satisfactorily attended to [21.6), whichever is the later (if we use works completion)

Replace Clause 21.6 with the following:
On the expiry of the ninety (90) calendar days defects liability period [21.1] for items not indicated as items with an extended liability as indicated in B14 and on receipt of the contractor's notice to the principal agent

And/or

On the expiry of the defects liability period as indicated in B14, for items indicated in B14 and on receipt of the contractor's notice to the principal agent, the principal agent shall:

(1) inspect the works And within ten (10) working days either issue a list for final completion detailing all outstanding work or defects that must be attended to, or rectified to achieve final completion or
(2) issue the certificate of final completion to the contractor with a copy to the employer for that part of the works where defects liability period has expired

21.6.1 Omit Clause

21.6.2 Omit Clause

Add the following as Clause 21.13:

The ninety (90) calendar days defects liability period for the works [21.1] is replaced with an extended defects liability period of three hundred and sixty-five (365) calendar days in respect of the listed applicable elements in B14

Add the following as Clause 21.14:
Penalties will be applied if the items on the completion list have not been attended to within a period of ninety (90) calendar days [21.1]. If additional defect items have being added to the list during this period, then the Principal Agent and Contractor will agree on a revised completion date. Failing in achieving the revised date will result in penalties being applied. [B12.0]

F:..... V:..... T:..... Item

A22.0 **LATENT DEFECTS LIABILITY PERIOD**

Clause 22.0

22.3.2 No Clause

F:..... V:..... T:..... Item

A23.0 **REVISION OF THE DATE FOR PRACTICAL COMPLETION**

Clause 23.0

Ref Clause 6.7 [CD] – Clause 23.1
Ref Clause 6.7 [CD] – Clause 23.2
23.2.13 No Clause

Replace Clause 23.3 with the following:
Further circumstances that delays practical completion due to any other cause beyond the contractor's reasonable control that could not have reasonably been anticipated and provided for which the contractor may be entitled to a revision of the date for practical completion, with or without an adjustment of the contract value as determined by the Employer [6.7 CD]

Ref Clause 6.7 [CD] - Clause 23.7
Ref Clause 6.7 [CD] - Clause 23.8

F:..... V:..... T:..... Item

A24.0 **PENALTY FOR LATE OR NON-COMPLETION**

Clause 24.0

Replace Clause 24.1 with the following:
Where the contractor fails to bring the works, or a section thereof, to practical-, works-, or final-completion by the applicable completion date [CD], or the revised applicable completion date, the contractor shall be liable to the employer for the penalty [CD]

Replace Clause 24.2 with the following:
Where the employer elects to levy such penalty the employer, or the principal agent on instruction from the employer, shall give notice thereof to the contractor. The principal agent shall determine the penalty due from the later of the date for practical- works-, or final-completion [CD], or the revised date for practical- works-, or final- completion, up to and including the earlier of:

Replace Clause 24.2.1 with the following:
The actual or deemed date of practical- works-, or final- completion, of the works, or a section thereof [23.7.1]

F:..... V:..... T:..... Item

PAYMENT

A25.0 **PAYMENT**

Clause 25.0

Replace Clause 25.2 with the following:
The principal agent shall issue at regular agreed intervals [CD] payment certificates, to the contractor with a copy to the employer, up to and including practical completion. Interim Payment certificates may be issued to the contractor between practical completion and the final payment certificate. A payment certificate may be for a nil or negative amount

Add the following to Clause 25.3:

25.3.12 Monthly Local content report,

25.3.13 EPWP / NYS payment register, labour reports and certified ID document of EPWP/ NYS beneficiaries, Contract between Contractor and EPWP/ NYS beneficiaries, attendance register. (if applicable)

25.3.14 Tax Invoice

25.3.15 Labour intensive report

25.3.16 Contract participation goal reports

25.5 No Clause

Replace Clause 25.6 with the following:
Materials and goods will only be certified and paid for upon providing proof of full payment to the supplier and proof of transfer of ownership from the supplier to the contractor by the contractor. Once paid, material and goods shall become the property of the employer and shall not be removed from site without the written authority of the Employer.

25.7.5 No clause.

Replace Clause 25.10 with the following:
The employer shall pay the contractor the amount stipulated in an issued payment certificate, correct in all material respects, within thirty (30) calendar days from the date of receiving the payment certificate, invoice and all other substantiating documentation for items certified in the payment certificate

Replace Clauses 25.12 to 25.12.3 with the following:
The value certified shall be subject to the following percentage adjustments :

(Clauses 25.12.1 to 25.12.5 shall be applicable to a contract sum up to R1 million. In the event of a contract sum more than R1 million for Options D & E (C 1.0 Securities [11.0]) Clauses 25.12.1 to 25.12.5 shall be applicable)

25.12.1 Where a security is selected in terms of C 1.0 Securities [11.0], the value of the works in terms of 25.1 and of the materials and goods in terms of 25.4 shall be certified in full. The value certified shall be subject to the following percentage adjustments:

25.12.2 Ninety-five per cent (95%) of such value in interim payment certificates issued up to the date of practical completion

25.12.3 Ninety-seven per cent (97%) of such value in interim payment certificates issued on the date of practical completion and up to but excluding the date of final completion

25.12.4 Ninety-nine per cent (99%) of such value in interim payment certificates issued on the date of final completion and up to but excluding the final payment certificate in terms of 26

25.12.5 One hundred per cent (100%) of such value in the final payment certificate in terms of 26 except where the amount certified is in favour of the employer. In such an event the payment reduction shall remain at the adjustment level applicable to the final payment certificate.

(Clauses 25.12.6 to 25.12.10 shall be applicable to a contract sum more than R1 million for Option C (C 1.0 Securities [11.0])

25.12.6 Where security is a payment reduction in term of C 1.0 Option C, value of the works in terms of 25.1 and materials and goods in terms of 25.4 shall be certified in full. The value certified shall be subject to the following percentage adjustments:

25.12.7 Ninety per cent (90%) of such value in interim payment certificates issued up to the date of practical completion

25.12.8 Ninety-seven per cent (97%) of such value in interim payment certificates issued on the date of practical completion and up to but excluding the date of final completion

25.12.9 Ninety-nine per cent (99%) of such value in interim payment certificates issued on the date of final completion and up to but excluding the final payment certificate in terms of 26

25.12.10 One hundred per cent (100%) of such value in the final payment certificate in terms of 26 except were the amount certified is in favour of the employer. In such an event the payment reduction shall remain at the adjustment level applicable to the final payment certificate

F:..... V:..... T:..... Item

A26.0 **ADJUSTMENT OF THE CONTRACT VALUE AND FINAL ACCOUNT**

Clause 26.0

Ref Clause 6.7 [CD] – Clause 26.1

Omit Clause 26.4.3

Ref Clause 6.7 [CD] – Clause 26.7

Replace Clause 26.10 with the following:
The principal agent shall prepare the final account in consultation with the employer and issue the final account, to the contractor within sixty (60) working days of the date of practical completion

Ref Clause 6.7 [CD] – Clause 26.12

F:..... V:..... T:..... Item

A27.0 **RECOVERY OF EXPENSE AND/OR LOSS**

Clause 27.0

Replace Clause 27.1.2 with the following:
Interest due to late payment only

Replace Clause 27.1.4 with the following:
Interest due to late payment only

27.1.5 No Clause

Replace Clause 27.5 with the following:
Where the employer decides to recover an amount due in terms of 27.2 from a construction guarantee, cash deposit or retention money held as security, the employer shall issue a written demand to the contractor before recovering the amount. Should such amount not be paid to the employer within fourteen (14) calendar days of the date of notice by the employer, the employer may recover such an amount from the security

Add the following as Clause 27.6:
Where a provisional sequestration or provisional liquidation order has been granted or where an order has been granted which commences sequestration, liquidation, bankruptcy, receivership, winding-up or any similar effect, against the contractor or this agreement is cancelled in terms of 29, the employer may issue a demand to the guarantor in terms of the construction guarantee or advance payment guarantee held as security

F:..... V:..... T:..... Item

SUSPENSION AND TERMINATION

A28.0 **SUSPENSION BY THE CONTRACTOR**

Clause 28.0

28 No Clause
28.1 No Clause
28.1.1 No Clause
28.1.2 No Clause
28.1.3 No Clause
28.1.4 No Clause
28.1.5 No Clause
28.2 No Clause
28.3 No Clause
28.4 No Clause

F:..... V:..... T:..... Item

A29.0 **TERMINATION**

Clause 29.0

Add the following as Clause 29.1.4:
The contractor's estate has been sequestrated, liquidated or surrendered in terms of the insolvency laws in force within the Republic of South Africa

Add the following as Clause 29.1.5:
The contractor has engaged in corrupt or fraudulent practices in competing for or in executing the contract

Add the following as Clause 29.1.6:
Honour his obligations in terms of Clauses 10.1.5.1.3, 11.4.1 and 12.2. sub Clauses 5, 6, 8, 9, 10, 11, 12, 13, 15, 16, 19, 20, 22.

Replace Clause 29.7 with the following:
The employer, on notice to the contractor, may recover damages from the contractor from the date of termination including, but not limited to, additional costs incurred in the completion, consultant cost, rental of alternative accommodation, invitation of completion tenders, salaries of officials and safeguarding the site, of the remaining work [25.3.7; 27.1.3]

Replace Clause 29.9 with the following:
The employer has the right of recovery against the contractor, where applicable, [CD] from:

The guarantee for construction (variable) until the final payment has been made;

or

The guarantee for construction (fixed) until the date of practical completion;

or

The payment reduction until the final payment is made;

or

The cash deposit made as security until the final payment is made

29.14.1 No Clause

29.14.3 No Clause

29.14.4 No Clause

29.14.5 No Clause

29.14.6 No Clause

29.14.7 No Clause

29.15 No Clause

29.16 No Clause

29.17.3 No Clause

29.17.6 No Clause

29.21.5 No Clause

29.22 No Clause

29.23 No Clause

29.25.3 No Clause

29.25.4 No Clause

29.27 No Clause

F:..... V:..... T:..... Item

DISPUTE RESOLUTION

A30.0 **DISPUTE RESOLUTION**

Clause 30.0

Replace Clause 30.2 with the following:
Where such disagreement is not resolved within ten (10) working days of receipt of such notice it shall be deemed to be a dispute and shall be submitted to Mediation as a first method of

dispute resolution failing which the parties will resort to Litigation

30.3 to 30.7.7 No Clauses

Replace Clause 30.8 with the following:
The parties may, by agreement and at any time before Litigation, refer a dispute to mediation, in which event:

30.8.1 No Clause

Replace Clause 30.8.2 with the following:
The appointment of a mediator, the procedure, and the status of the outcome shall be agreed between the parties

Replace Clause 30.8.3 with the following:
Regardless of the outcome of a mediation the parties shall bear their own costs concerning the Mediation and equally share the costs of the mediator and related expenses

Replace Clause 30.9 with the following:
Institution of Litigation shall be commenced and process served within three (3) year from the date of existence of the dispute, failing which the dispute shall lapse

30.10 No Clause

30.12 No Clause

F:..... V:..... T:..... Item

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B4.2	**Enclosure of the works**		
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B8.4 **Communication facilities**

F:..... V:..... T:..... Item

B9.0 **PRIME COST AMOUNTS**

B9.1 **Responsibility for prime cost amounts**

F:..... V:..... T:..... Item

B10.0 **ATTENDANCE ON SUBCONTRACTORS**

B10.1 **General attendance**

The **contractor** shall at his own expense provide the following general attendance on the **subcontractors**:

Access to the **site** and places where the subcontract work is to be carried out, including the reasonable use of any temporary personnel hoists erected by the **contractor**

The provision of water and lighting and single phase electric power to a position within 50 metres of the place where the subcontract work is to be carried out but excluding water, fuel and power for commissioning of any installation

The provision of an area for the **subcontractor** to establish temporary office accommodation and workshops and for the storage of plant and materials

The use of erected scaffolding belonging to the **contractor**, in common with others having the like right, while it remains erected on the **site**

The use, at reasonable times by arrangement of the **contractor's** erected hoisting equipment

F:..... V:..... T:..... Item

B10.2 **Special attendance**

F:..... V:..... T:..... Item

B11.0 **GENERAL**

B11.1 **Protection of the works**

F:..... V:..... T:..... Item

B11.2 **Protection/isolation of existing works and works occupied in sections**

F:..... V:..... T:..... Item

B11.3 **Security of the works**

F:..... V:..... T:..... Item

B11.4 **Notice before covering work**

F:..... V:..... T:..... Item

B11.5 **Disturbance**

The **contractor** shall keep the **site**, structures, etc well watered during operations to prevent dust and shall provide and erect and remove on completion of the **works** all necessary temporary dust screens all to the satisfaction of the **principal agent**

F:..... V:.....T:..... Item

B11.6 **Environmental disturbance**

F:..... V:..... T:..... Item

B11.7 **Works cleaning and clearing**

F:..... V:..... T:..... Item

B11.8 **Vermin**

F:..... V:..... T:..... Item

B11.9 **Overhand work**

F:..... V:..... T:..... Item

B11.10 **Tenant installations**

F:..... V:..... T:..... Item

B11.11 **Advertising**

F:..... V:..... T:..... Item

SECTION C: SPECIFIC PRELIMINARIES

Section C contains specific preliminary items which apply to this contract except where N/A (Not Applicable) appears against an item

C1.0 **CONTRACT DRAWINGS**

* Select relevant paragraph and delete whichever is not applicable depending on whether the contract is based on a **bills of quantities** or lump sum document

* The drawings issued with the tender documents do not comprise the complete set but serve as a guide only for tendering purposes and for indicating the scope of the work to enable the tenderer to acquaint himself with the nature and extent of the **works** and the manner in which they are to be executed

* A full set of drawings is issued with the tender documents indicating the full scope of the work to enable the tenderer to acquaint himself with the nature and extent of the **works** and the manner in which they are to be executed

Should any part of the drawings not be clearly understood by the tenderer he shall, before submitting his tender, obtain clarification in writing from the **principal agent**

F:..... V:..... T:..... Item

C2.0 **PREAMBLES**

The document "Construction Works: Specifications: General Specification (PW371-A) Edition 2.1" is obtainable on the Department's website (http://www.publicworks.gov.za/ under "Consultants Guidelines"), and shall be read in conjunction with the **bills of quantities** / lump sum document and be referred to for the full descriptions of work to be done and materials to be used

The document "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.2" is issued together with the drawings and shall be read in conjunction with the drawings and the **bills of quantities** / lump sum document

F:..... V:..... T:..... Item

C3.0 **TRADE NAMES**

Wherever a trade name for any product has been described in the **bills of quantities** / lump sum document, the tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the **principal agent** being obtained prior to the closing date for submission of tenders

If prior written approval for an alternative product is not obtained, the product described shall be deemed to have been tendered for

F:..... V:..... T:..... Item

C4.0 **IMPORTED MATERIALS AND EQUIPMENT**

Where imported items are listed in the tender documents, the tenderer shall provide all the information called for, failing which the price of any such item, materials or equipment shall be excluded from currency fluctuations. (refer to Schedule of Imported Materials and Equipment DPW-23(EC) to be completed by tenderer)

Notwithstanding any provisions elsewhere regarding the adjustment of contract prices, the price of any item, material or equipment listed in terms of this clause shall be excluded from the Contract Price Adjustment Provisions (if applicable)

F:..... V:..... T:..... Item

C5.0 **VIEWING THE SITE IN SECURITY AREAS**

The **site** is situated in a security area and the tenderer must arrange with the unit commander or other responsible officer to obtain permission to enter the **site** for tendering purposes

F:..... V:..... T:..... Item

C6.0 **COMMENCEMENT OF WORKS IN SECURITY AREAS**

As the **works** falls within a security area the **contractor** must give the unit commander or other responsible officer notice before commencement of the **works**. Should the **contractor** fail to make such arrangements, admission to the **site** may be refused and any additional costs will be for the **contractor's** account

F:..... V:..... T:..... Item

C7.0 **ENTRANCE PERMITS TO SECURITY AREAS**

As the **works** falls within a security area the **contractor** shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under the control of the Defence Force, Police or chief security officer

F:..... V:..... T:..... Item

C8.0 **SECURITY CHECK OF PERSONNEL**

The **principal agent** may require the **contractor** to have his personnel and workmen, or a certain number of them, security classified

In the event of the **principal agent** requesting the removal of a person or persons from the **works** for security reasons, the **contractor** shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the **works** and the **site** and/or to any document or information relating to the **works**

F:..... V:..... T:..... Item

C9.0 **PROHIBITION ON TAKING OF PHOTOGRAPHS**

In terms of article 119 of the Defence Act, 44 of 1957, it is prohibited to sketch or to take photographs of any military site or installation or any building or civil works thereon or to be in possession of a camera or other apparatus used for taking of photographs except when authorized thereto by or on behalf of the Minister

The same prohibition is also applicable to all correctional institutions in terms of article 44.1(e) of the Correctional Services Act 8 of 1959

F:..... V:..... T:..... Item

C10.0 **HIV/AIDS AWARENESS**

It is required of the **contractor** to thoroughly study the HIV/AIDS Specification (PW 1544) of the Department that must be read together with and is deemed to be incorporated under this Section of the **bills of quantities** / lump sum document. Provision for pricing of HIV/AIDS awareness is made under items C10.1 to C10.5 hereafter and it is explicitly pointed out that all

requirements of the aforementioned specification are deemed to be priced hereunder, as the said items represent the only method of measurement and no additional items or extras to the contract in this regard shall be entertained

The **contractor** must take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the **principal agent**, notwithstanding the provisions of Clause A 25.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress **payment certificate** until the **contractor** provides satisfactory proof of compliance. The **contractor** shall not be entitled to any compensation of whatsoever nature, including **interest**, due to such delay of payment

C10.1 **AWARENESS CHAMPION**

Selection, appointment, briefing and making available of an Awareness Champion including provision of all relevant services, all in accordance with the HIV/AIDS Specification

F:..... V:..... T:..... Item

C10.2 **AWARENESS WORKSHOPS**

Selection and appointment of a competent Service Provider approved by the **principal agent**, provision of a Service Provider Workshop Plan and a suitable venue, conducting of awareness workshops by means of traditional and/or modern multi-media techniques, including follow-up courses, making available all tuition material and performing assessment procedures, all in accordance with the HIV/AIDS Specification

F:..... V:..... T:..... Item

C10.3 **POSTERS, BOOKLETS, VIDEOS, ETC.**

Provision, displaying, maintaining and replacing when necessary of four plastic laminated posters, booklets and educational videos, etc. for the duration of the **construction period**, all in accordance with the HIV/AIDS Specification

F:..... V:..... T:..... Item

C10.4 **ACCESS TO CONDOMS**

Provision and maintenance of condom dispensers fixed in position, including male and female condoms, replenishing male and female condoms on a daily basis as required for the duration of the **construction period**, all in accordance with the HIV/AIDS Specification

F:..... V:..... T:..... Item

C10.5 **MONITORING**

Monitoring HIV/AIDS awareness of workers, providing the **principal agent** with access to information including making available all reports, thoroughly completed and reflecting the correct information, for the duration of the **construction period** and close out, all in accordance with the HIV/AIDS Specification

F:..... V:..... T:..... Item

C11.0 **OCCUPATIONAL HEALTH AND SAFETY ACT**

The **contractor** shall comply with all the requirements as set out in the Construction Regulations, 2014 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993)

It is required of the **contractor** to thoroughly study the Health and Safety Specification that must be read together with and is deemed to be incorporated under this Section of the **bills of quantities** / lump sum document

The **contractor** must take note that compliance with the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is compulsory. In the event of partial or total non-compliance, the **principal agent**, notwithstanding the provisions of Clause A25.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress **payment certificate** until the **contractor** provides satisfactory proof of compliance. The **contractor** shall not be entitled to any compensation of whatsoever nature, including **interest**, due to such delay of payment

Provision for pricing of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is made under this clause and it is explicitly pointed out that all requirements of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained

F:..... V:..... T:..... Item

C12.0 **EMPLOYMENT AND TRAINING OF YOUTH WORKERS ON THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) INFRASTRUCTURE PROJECTS: NATIONAL YOUTH SERVICE (NYS)**

The **contractor** shall comply with all the requirements as set out in the "Additional Specification SL: Employment and Training of Youth Workers on the Expanded Public Works Programme (EPWP) Infrastructure Projects: National Youth Service (NYS)" as attached to these **bills of quantities /** lump sum document

The **contractor** shall identify a minimum number of youth workers from a priority list, and shall employ them at the statutory labour rates for a minimum period and train them, all as per the aforementioned specification and as elsewhere measured in these **bills of quantities /** lump sum document

The **contractor** shall liaise and co-ordinate with the **employer** and the EPWP Training Service Provider with regard to the priority list, the selection of youth workers, and the employment and training of the identified youth workers

The **contractor** shall avail the services of an adequately qualified foreman specifically for the EPWP-NYS youth workers, to act as their construction supervisor. The foreman will be responsible for continually monitoring the progress of the youth workers and for addressing questions and issues that may arise from the youth workers

Separate items which will be subject to remeasurement have been included elsewhere in these **bills of quantities /** lump sum document to cover the direct costs associated with the employment and training of the youth workers. Any additional requirements in respect of the aforementioned specification are deemed to be priced hereunder and no additional claims in this regard shall be entertained

F:..... V:..... T:..... Item

C13.0 **IMPLEMENTATION OF LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS UNDER THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP)**

The **contractor** shall comply with all the requirements of the "Code of Good Practice for Employment and Conditions of Work for Special Public Works Programmes" issued in terms of the "Basic Conditions of Employment Act, 1997 (Act No 75 of 1997)" and the related "Ministerial Determination", for the employment of locally employed temporary workers on a labour-intensive infrastructure project under the Expanded Public Works Programme (EPWP)

The **contractor** shall maintain daily records with regard to the workers employed and shall, on a monthly basis, submit a report to the **principal agent** in the prescribed format. Compulsory

indicators such as the project budget, actual project expenditure, number of job opportunities created, demographic characteristics of workers employed, minimum daily wage rate, number of person-days of employment created and number of training person-days, shall be included in said report, all as defined in the "Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP)"

Provision for pricing of compliance with the aforementioned is made under this clause and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained

F:..... V:..... T:..... Item

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	SECTION 1 **PRELIMINARIES**			
	CARRIED TO FINAL SUMMARY	**R**		

SUBTOTALS:	R	c
Category: Fixed R		
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Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 1				
	ALTERATIONS (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	REMOVAL OF EXISTING WORK				
	Breaking down and removing brickwork etc				
1	Half brick wall	m2	21		
2	One brick wall	m2	100		
	Taking down and removing concrete composite structure (on elevated walkway)				
3	Q-deck bond lock composite decking (LI)	m2	140		
	Taking out and removing existing aircon and building up openings in brick walls including making good facebrick on one side and cement plaster on other side (making good paintwork elsewhere)				
4	Aircon 600 x 600mm high	No	1		
	Carried to Collection			R	

	Taking out and removing doors and ironmongery including steel door frames from brickwork, make good and prepare the affected brickwork to receive new steel door frames.				
5	Timber single door 813 x 2032mm high	No	1		
	Taking out and removing doors including ironmongery from steel frames				
6	Timber single door 762 x 2032mm high	No	18		
7	Timber single door 813 x 2125mm high	No	8		
8	Timber single door 1511 x 2125mm high	No	3		
9	Timber single door 1900 x 2125mm high	No	2		
	Taking down and removing roofs, floors, panelling, ceilings, partitions, etc				
10	Corrugated iron roof covering (LI)	m2	1,136		
11	Gypsum plasterboard ceilings including cornices, timber brandering, etc	m2	218		
12	Acoustic tile suspended ceilings including suspension grid, hangers, etc	m2	326		
13	Tile suspended ceilings and prepare the suspension grid, hangers, etc for re-use.	m2	1,199		
14	Drywall partitioning 3685mm high including doors, ironmongery, glazed borrowed lights, etc	m	18		
15	Fibre cement wall cladding	m2	2		
16	Fibre cement cladding around columns	m2	223		
17	228 x 9mm Fascia and barge boards	m	10		
18	Ridge capping for prepare for new (LI)	m	64		
19	Hip capping and prepare for new (New elsewhere measured)	m	156		
20	Headwall flashing and prepare for new (New elsewhere measured)	m	9		
	Carried to Collection			R	

21	Raking valley gutter and prepare for new (New elsewhere measured)	m	61		
	Taking out and removing joinery fittings etc				
22	Timber skirtings from brickwork	m	1,167		
23	Timber window pelmet	m	128		
24	Kitchen cupboards 600mm	m	5		
25	Pin board size 1500 x 1200mm	No	3		
26	Reception counters, size 1 500 x 900mm high	No	1		
	Taking out/off and removing sundry metalwork				
27	Steel balustrades, 1100mm high	m	140		
	Taking up and removing vinyl floor coverings, carpeting, etc,				
28	Existing vinyl floor covering including preparing screed for new vinyl floor covering	m2	661		
29	Existing floor carpet including preparing screed for new carpet to floors	m2	357		
30	Existing wall carpet including preparing plaster for new carpet to walls	m2	28		
31	Existing floor carpet including preparing screed for new vinyl floor covering	m2	23		
32	Existing vinyl skirting including preparing surface for new vinyl skirting/turn-up	m	259		
	Taking out and removing ironmongery				
33	Door stopper	No	26		
34	Lock set and door closer from aluminium door frame	No	1		
35	Towel rail not exceeding 1000mm long	No	1		
36	Toilet paper dispenser	No	27		
	Carried to Collection			R	

37	Paper towel dispenser	No	17		
38	Wall mounted bin	No	14		
39	Soap dispenser	No	17		
40	She bin	No	15		
41	Blinds size 900 x 2380mm high	No	5		
42	Blinds size 950 x 1700mm high	No	4		
43	Blinds size 1800 x 3315mm high	No	1		
44	Blinds size 1900 x 2380mm high	No	51		
45	Blinds size 2150 x 3315mm high	No	1		
46	Blinds size 2820 x 1700mm high	No	2		
47	Blinds size 4000 x 3315mm high	No	3		
48	Blinds size 5760 x 1700mm high	No	1		
	Taking out and removing ironmongery etc, setting aside for re-use and later refixing in new position				
49	Mortice lock and striking plate, etc. (complete ironmongery) from door	No	6		
50	Paraplegic grab rails	No	2		
	Refixing of existing ironmongery, etc (removal and setting aside elsewhere)				
51	Mortice lock and striking plate, etc. (complete ironmongery) from door	No	6		
52	Paraplegic grab rails	No	1		
	Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screeds, plaster, etc				
53	Internal plaster from walls and columns	m2	2,822		
	Carried to Collection			R	

	Hacking up/off and removing ceramic tile floor and wall finishes including removing mortar bed or backing and preparing concrete or brick surfaces for new screed, plaster or tile finishes				
54	Tiles to floors	m2	342		
55	Tiles to walls	m2	500		
	Taking out and removing existing sanitary fittings, etc including making good of all connections to receive new fittings and make good floor and wall finishes				
56	Basin mixer	No	7		
57	Vitreous china wash hand basin	No	5		
58	Vitreous china WC low level cistern	No	9		
59	Vitreous china wall hung urinal with flush valve	No	3		
60	Stainless steel sink and mixer	No	3		
61	Mounted electric water heater including drip tray	No	1		
62	Hand dryer	No	8		
	Taking out and removing glass and mirrors				
63	Glass from steel windows including cleaning out rebates and preparing for new glass	m2	15		
64	Glass from steel doors including cleaning out rebates and preparing for new glass	m2	1		
65	Glass from timber doors including cleaning out rebates and preparing for new glass	m2	2		
66	Mirror 600 x 900mm high from wall including making good white glazed tiling to receive new mirror	No	20		
67	Mirror 1100 x 1000mm high from wall including making good white glazed tiling to receive new mirror	No	2		
68	Mirror 800 x 1700mm high from wall including making good white glazed tiling to receive new mirror	No	6		
	MAKING GOOD OF FINISHES ETC				
	Carried to Collection			R	

	Making good screed				
69	Floors in patches	m2	2		
	Making good window cills (to match existing), by taking out and removing damaged window cills and replace with similar				
70	Window cills in patches	m	173		
	Making good existing suspended ceiling, etc. (to match existing), by replacing damaged and missing ceiling panels, fix panels that are not seating on the tees properly and fix grid system, incl. shadow line, etc. (clean dust and stains off ceiling panels is measured elsewhere)				
71	Ceilings in patches	m2	164		
	OPENINGS THROUGH EXISTING WALLS ETC				
	Breaking out for and forming plain openings through brick walls including necessary precast concrete lintels and making good facebrick on one side and plaster on other side and into reveals and with (making good paintwork elsewhere)				
72	Opening for ventilator 500 x 500mm high overall through 230mm brick wall	No	1		
	SERVICING, REPAIRING, RE-FIXING, CLEANING, ETC OF EXISTING WORK				
	Breaking out existing aluminium window in partition wall for new aluminium window and making partitioning wall on both sides				
73	Aluminium window size 1200 x 1000mm high	No	5		
	Servicing and repairs to existing steel windows frames (repainting and re-glazing measured elsewhere)				
74	Servicing existing windows by removing existing putty and cleaning the glass and frames, frames must be free from dust, rust, oil and dirt before painted with primer and applying new putty and refixing the glass window pane (all in accordance with architects instructions)	m2	358		
	Carried to Collection			R	

75	Servicing existing windows ironmongery by cleaning, replacing and re-fixing all necessary bolts, catches, handles, etc.	m2	358		
	Servicing and repairs to existing door and door frames, etc. (replacing, repainting and re-glazing measured elsewhere)				
76	Servicing existing door frame by cleaning frame and glass fan or side lights, frames must be free from dust, rust, oil and dirt before painted with primer and applying new putty and refixing the glass fan and side lights (all in accordance with architects instructions)	m2	190		
77	Servicing existing door ironmongery by cleaning, replacing and re-fixing all necessary hinges, locks, handles, etc.	No	100		
	Repair chipped and cracks concrete prison cell bench and cleaning the concrete thoroughly, all according to the Architects instructions				
78	600mm Prison cell concrete bench	m	12		
	Repair cracks in floors by cleaning the concrete floor thoroughly around the cracks. Repair hairline cracks in concrete with Portland cement grout and water. Add just enough water to the cement to form a thick paste. Moisten the old concrete along the hairline crack with water for several hours before adding the grout, no water should be standing on the surface when the grout is applied. After the hairline crack has been moistened and thoroughly cleaned, apply the grout with a putty knife or pointing trowel. Force the grout into the crack as much as possible. Then smooth it off so it is level with the original concrete. Allow the patched area to dry about two hours. Then, cover the area with a piece of plastic sheeting or a board. Keep the area covered for about five days. Lift the covering once each day and sprinkle the area with water. (Floor cracks to be indicated by Architect on site)				
79	Repair cracks in floors	m	7		
	Carried to Collection			R	

	Repair structural cracks in walls by removing plaster 500mm around the crack, clean the crack, place wire mesh (chicken mesh) over the crack overlapping 300mm on both side of the patch crack, plaster the wall, apply plaster primer, one coat of universal undercoat and two final coats of emulsion paint (Structural cracks to be indicated by Architect on site)				
80	Repair structural cracks in walls	m	65		
	Repair acoustic timber slates wall, by realigning or replacing any protruding or damaged 38x38mm timber infill strips and including acoustic back board, etc. all according to Architect instructions (painting measured elsewhere)				
81	Acoustic timber slated walls	m2	96		
	Remove existing timber plank/piece and install a new one to abut the window frame and flush with the edges of the window reveal and firmly fixed to the wall and paint the plank size 1900mm x 1200mm high, all according to Architect instructions (painting measured elsewhere)				
82	Timber plank fixed into window opening size 1900 x 1200mm high	No	19		
	Repair timber balustrade, all according to Architect instructions (painting measured elsewhere)				
83	Timber Balustrade	m	40		
	Carried to Collection			R	

	Polishing existing natural anodised aluminium frames on both sides by detaching all burglar bars and other retrofit fixings and sand aluminium surface using 800-grit sandpaper. Use a firm touch and continue sanding until the aluminium appears perfectly smooth. Attach a buffing pad to a hand buffing machine and turn it on. Slowly move the buffing pad in circular motions along the entire aluminium surface, and then wipe the aluminium with a soft cloth. Apply a commercial aluminium polish or anodized aluminium polish to the aluminium surface. This is will be the final polish. Squeeze a dollop of the polish onto a soft cloth and rub it in circular motions across the surface. Follow this by scraping the exposed brick surface with your bolster to remove high spots and pieces of crumbling mortar (all in accordance with Architects instructions)				
84	Polishing existing natural anodised aluminium frames	m2	186		
	Clean existing face brick wall by removing all smudges, seal all holes with the mortar which matches the existing mortar on the wall (all in accordance with Architects instructions)				
85	External face brick walls	m2	3,749		
	Clean existing floor surfaces (necessary repairs shall be made to match existing all in accordance with Architects instructions)				
86	Existing epoxy floors	m2	62		
	Clean and seal existing floor surfaces by thoroughly washing down and allow to dry completely before sealant is applied (necessary repairs shall be made to match existing and floor to be sealed all in accordance with Architects instructions)				
87	Existing tiled floors	m2	118		
88	Existing vinyl floors	m2	795		
	Cleaning and servicing existing light fittings in concrete ceilings (all in accordance with Architects instructions)				
89	Remove existing light fitting carefully, clean the fitting and re-install	No	6		
	Carried to Collection			R	

	Cleaning and servicing existing suspended ceilings, including light fittings (all in accordance with Architects instructions)				
90	Cleaning existing suspended ceiling panels and ceiling grid, shadow line, light fittings, etc.	m2	655		
	Clean, strip old paint and make the necessary repairs and re-paint existing toilet partitioning system, including doors (all in accordance with Architects instructions)				
91	Toilet partition system, including doors	m2	69		
	Clean and make the necessary repairs to the existing vinyl laminated partitioning system, including doors (all in accordance with Architects instructions)				
92	Vinyl laminated partition system, including doors	m2	89		
	Cleaning existing stainless steel and remove oxidized stains and surface rust by using a cleaner that contains oxalic acid in strict accordance to manufacturer's specification (all in accordance with Architects instructions)				
93	Existing stainless steel cash transfer tray	No	1		
94	Existing stainless steel paraplegic grab rails	No	3		
95	Existing stainless steel towel rails	No	1		
96	Existing stainless steel condom dispenser	No	1		
	Cleaning and servicing existing sanitary fittings by removing all stains, etc. and replacing any damaged and/or missing components, re-seal, etc. (all in accordance with Architects instructions)				
97	Water fountain (Prison cell)	No	6		
98	WC (Prison cell)	No	6		
99	Vitreous china WC low level cistern	No	21		
100	Vitreous china wall hung urinal with flush valve	No	6		
101	Vitreous china wash hand basin	No	20		
	Carried to Collection			R	

Section No. 2

Bill No. 1

Alterations

COLLECTION

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Total Brought Forward from Page No.	32		
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Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 2				
	MASONRY (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	BRICKWORK				
	Sizes in descriptions:				
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
	Face bricks:				
	Bricks shall be ordered timeously to obtain uniformity in size and colour				
	Pointing:				
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.				
	SUPERSTRUCTURE				
	Brickwork of NFP bricks in class II mortar:				
1	Half brick walls (LI)	m2	26		
	Carried to Collection			R	

2	Half brick walls in beamfilling	m2	13		
3	One brick walls (LI)	m2	109		
	BRICKWORK SUNDRIES				
4	Extra for building brickwork for 230mm wide sill set sloping and slightly projecting (LI)	m	2		
	Brickwork reinforcement				
5	75 mm Wide reinforcement built in horizontally (LI)	m	101		
6	150 mm Wide reinforcement built in horizontally (LI)	m	272		
	Prestressed fabricated lintels				
7	100 x 70 mm Lintels in lengths not exceeding 3 m long (LI)	m	3		
	MOVEMENT JOINTS ETC				
	Joint forming material in movement joints				
8	Polysulfide sealant around window and door surrounds	m	768		
	Expansion joints with bitumen impregnated softboard between vertical concrete and brick surfaces				
9	10mm Joints not exceeding 300mm high (LI)	m	9		
	FACE BRICKWORK				
	Face Bricks (PC Amount R 7,000.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints				
10	Extra over brickwork for face brickwork (LI)	m2	54		
	Brick-on-edge header course copings, sills, etc of (PC Amount R 7,000.00 per thousand bricks delivered to site excl. VAT) pointed with square recessed horizontal and vertical joints				
11	220mm Wide sill set sloping and slightly projecting	m	2		
	Carried to Collection			R	

Section No. 2

Bill No. 2

Masonry

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	43		
	44		

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Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 3				
	WATERPROOFING (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMP PROOFING OF WALLS AND FLOORS				
	Inject selected damp proofing chemical to form an artificial damp proof course to cure rising damp, all in accordance with manufacturers' specifications				
1	inject selected damp proofing chemical to form an artificial damp proof course to cure rising damp	m2	159		
	Two coats "ABE" or other equally approved wall seal				
2	Waterproof to walls and floors	m2	325		
3	Waterproof to concrete ceilings	m2	31		
	WATERPROOFING TO ROOFS, BASEMENTS, ETC				
	Carried to Collection			R	

	4mm "Derbigum SP" or other equally approved fully bonded waterproofing				
4	On flat roofs	m2	72		
	Carried to Collection			R	

Section No. 2

Bill No. 3

Waterproofing

COLLECTION

	Page No		Amount
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	47		

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Item No			Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 4				
	ROOF COVERINGS ETC (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0.58mm Thick "Safintra Saflok 700 Colorplus AZ150" or other equally approved interlocking roof sheeting fixed to steel or timber purlins and ridge/eave purlins Saflok 700 clips which are fastened to steel or timber purlins with approved wafer head self-tapping fasteners, all in accordance with the manufacturer's recommendations				
1	Roof coverings with pitches not exceeding 25 degrees	m2	1,136		
2	Ridge capping 550mm girth, three times bent along girth and notched on site to suit roof profile (to match existing)	m	64		
3	Hip capping 550mm girth, three times bent along girth and notched on site to suit roof profile	m	156		
4	Counter flashing (Code FK77) 185mm girth, three times bent along girth.	m	9		
5	Headwall flashing 375mm girth, two times bent along girth and notched on site to suit roof profile	m	9		
	Carried to Collection			R	

6	Raking valley gutter 610mm, three times bent along girth	m	61		
7	Drip flashing (Code: FK76) 231mm girth, bent three times along girth	m	271		
	ROOF AND WALL INSULATION				
	"Aerolite" or other equally approved insulation				
8	50mm "Think Pink" or other equally approved insulation laid taut over purlins and/or in accordance with ,manufacturers' recommendations	m2	1,136		
	Carried to Collection			R	

Section No. 2

Bill No. 4

Roof Covering

COLLECTION

	Page No		Amount
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	50		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 5				
	CARPENTRY AND JOINERY (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	Particle board:				
	Particle board shall comply with the following specifications: a) SABS 1300 Particle board: exterior and flooring type b) SABS 1301 Particle board: interior type				
	Joinery:				
	Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc				
	Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes				
	Fixing				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete				
	Carried to Collection			R	

	Decorative laminate finish:				
	Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish				
	EAVES, VERGES, ETC				
	Pressed fibre cement				
1	228 x 9mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	10		
	SKIRTINGS				
	Approved wrought meranti skirting				
2	Standard 19 x 100mm Meranti skirting with pencil round, plugged.	m	1,126		
	DOORS ETC				
	Solid doors with "Masonite" 3mm covering to both sides concealed hardwood edges all round, hung to steel frames				
3	40mm Door 813 x 2125mm high	No	30		
4	40mm Door 762 x 2125mm high	No	8		
5	40mm Door 762 x 2125mm high	No	8		
6	40mm Door 762 x 2032mm high	No	2		
7	40mm Door 1900 X 2125mm high	No	2		
	Solid doors with "Mahogany" 3mm covering to both sides concealed hardwood edges all round, hung to steel frames				
8	40mm Door 1900 X 2125mm high	No	3		
	FITTINGS				
	Carried to Collection			R	

	The following in Reception Counter				
9	20mm Thick Quartz reception desk top with polished finish, 20mm thick supporting edge strips laminated under all exposed edges of top glued with pre-coloured polyester resin and all exposed edges to be full bullnose, fixed to supports using dabs of 100% clear silicone adhesive at 200-300mm centre along supports with all joints filled with matching polyester resin glue. The overall size of the counter is 4000mm long, 1476mm wide and 1112mm high. The reception desk to include four drawers. The description is to be read in conjunction with the following drawing:				
	(Joinery/ Details/Drawing - 25649/Joinery/512)	No	1		
	Interior type particle board with Formica veneer				
10	32 mm Formica worktop 600mm wide post formed one side	m	6		
11	Cut 32mm Formica work top to fit double bowl sink 1500 x 435mm	No	2		
	The following in modular timber cupboards, counters, duty stations, desks etc as per Cupboard Connections Specification (P.O. Box 140, Haenertsburg, 0730 Tel/Fax (015) 276 4708 or 4709) - or other equally approved				
	Carried to Collection			R	

	Carcasses of 16mm thick particle board with both faces white melamine with white masonite backs. Shelving of 16mm particle board, both faces white melamine and front edge edged in white PVC. Doors of 16mm particle board with postformed vertical edges and laminated in Renolit. Tops of 32mm particle board with postformed leading edges and laminated in High Pressure Decorative Laminate. All butt edges and edges against walls to be sealed in Silicone sealant. Hinges to be "Hettich" or other equally approved. Drawer runners to be metal 500mm series with nylon runners - FR602 or other equally approved. All units complete with doors, handles, hinges, cupboard door locks, barrel bolts and shelves. Floor units complete with kickplates. (Formica tops measured elsewhere)				
12	Floor cupboard type F900 900 x 580 x 900mm high with, sides, bottom, shelf, back and double hinged door including handles (Top measured elsewhere) (Joinery Detail/Drawing - 25649/Joinery/510)	No	4		
13	Floor cupboard type, size 620 x 580 x 900mm high with, sides, bottom, shelf, back and double hinged door including handles (Top measured elsewhere) (Joinery Detail/Drawing - 25649/Joinery/510)	No	1		
14	Floor cupboard type, size 350 x 580 x 900mm high with, sides, bottom, shelf, back and single hinged door including handles (Top measured elsewhere) (Joinery Detail/Drawing - 25649/Joinery/510)	No	1		
15	Floor cupboard type, size 450 x 580 x 900mm high with, sides, bottom, five shelves and handles and back (Top measured elsewhere) (Joinery Detail/Drawing - 25649/Joinery/510)	No	2		
	Carried to Collection			R	

Section No. 2

Bill No. 5

Carpentry and Joinery

COLLECTION

	Page No		Amount
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	54		
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Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 6				
	CEILINGS, PARTITIONS AND ACCESS FLOORING (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	Descriptions:				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere				
	Proprietary suspended ceilings				
	Note:Electrical light fittings, diffusers, panels, etc generally are "lay in" units of the same dimensions as the suspension grid described and allowance must be made accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof)				
	Carried to Collection			R	

SUSPENDED CEILINGS

Proprietary suspended ceilings

Note:

Electrical light fittings, diffusers, panels, etc generally are "lay in" units of the same dimensions as the suspension grid described and allowance must be made accordingly for their support inclusive of any flexibility insetting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof)

User note:

a) The above note to be included in the bills of quantities after confirmation of the basic design of the ceilings, lighting, air conditioning, etc

NAILED UP CEILINGS

9.5mm Gypsum flush plastered plasterboard screwed to screw up ceiling with screws spaced 150mm centres and cross tees at 500mm centres in one direction only. All joints to be covered with tape and the whole finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer

1	Ceilings including 38 x 38mm sawn softwood brandering at 450mm centres	m2	218		
2	Extra over ceiling access panels comprising 635 x 635 mm white epoxy coated aluminium T-frame and 580 x 580 epoxy coated steel pan, bottom hinged with cam lock	No	1		
	Gypsum plasterboard cornices				
3	75mm Coved cornices	m	23		
	Carried to Collection			R	

	SUSPENDED CEILINGS				
	600 x 600 x 15mm High biologically absorbable mineral wool ceiling tiles. Visible surface has an 100% polyester textile, fire retardant, maize plastic surface coating colour white and the back of tiles covered with glass tissue with natural edges, on pre-painted galvanized exposed tee suspension system including main and cross tees, necessary hangers, grids, etc. installed according to manufacturer's specifications. Color white 500, nearest NCS colour sample S0500-N				
4	Ceilings suspended exceeding 1m and not exceeding 2m below steel purlins at 1500mm centres (trusses at 1200mm centres)	m2	1,199		
	Cornices to suspended ceilings				
5	25mm Shadowline trim, powder coated white fixed to wall at 300mm centres with plug and screw	m	1,363		
	Acoustic Suspended Ceilings				
	Biologically absorbable mineral wool ceiling tiles, size 1200/600 x 600 x 15mm with square edge and white painted finish, laid on fire rated exposed demountable suspension system, comprising galvanized main tees and cross tees with main tees suspended by means of galvanized hangers at centres not exceeding 1200mm, and all installed to manufacturers' instructions				
6	Supply and install acoustic ceilings to pre-painted galvanised steel exposed tee suspension system to suite, including all necessary hangers, sub grid and fixings.	m2	326		
	PARTITIONS ETC				
	Carried to Collection			R	

	BPB Gypsum GypRoc or other equally approved Standard - 40 db (½ hour fire rating) Ultrasteel Stud Drywall consisting of stud and track system with 51mm Drywall Ultrasteel studs positioned at 600mm centres fixed into 51mm wide top and bottom track clad on both sides with 12,5mm thick taper edged Rhinoboard fixed with 25mm Drywall screws at 220mm centres and all corners fixed with Drywall Cornerbeads and all joints to be taped and jointed as per manufactuer's specifications.				
7	Partitioning 3685mm high with bottom track plugged and top track fixed to suspended ceiling tees	m	38		
8	Extra over partition 3685mm high for vertical abutment	No	2		
9	Extra over partition 3685mm high for corner	No	1		
10	Extra over partition 3685mm high for T-Section	No	1		
	Doors				
11	Extra over partition for 40mm semi-solid flush door 813 x 2032mm high with Cherry wood veneer on both sides and hardwood edge strips fixed to vertical edges, hung to and including standard natural anodised aluminium door frame with one and a half pairs of 100mm nylon washered aluminium hinges and additional studding, trimming, etc including one pair "Dorma" 121 lever handles on rose, one "Dorma" D036S cylinder lock, one "Cisa" 08510.10.12 double cylinder and one "Dorma" DDS-NP-018 or other equally approved doorstop	No	4		
	Carried to Collection			R	

Section No. 2

Bill No. 6

Ceilings, partitions and access flooring

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	57		
	58		
	59		
	60		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate		Amount
	SECTION 2: BUILDING WORKS					
	BILL NO. 7					
	FLOOR COVERINGS, PLASTIC LININGS, ETC (LI)					
	This trade is Labour Intensive (LI)					
	PREAMBLES					
	For preambles see "Specification of materials and methods to be used - PW 371"					
	SUPPLEMENTARY PREAMBLES					
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Principal Agent					
	FLOOR COVERINGS					
	Rubber anti-slip strips					
1	Rubber anti-slip strips to floors	m	8			
	Belgotex or other equally approved "Serengeti" floor carpets, with 300mm black borders to floors					
2	Floor carpets	m2	357			
	"Floorworx" or other equally approved 300 x 300 x 2.0mm thick Superflex fully flexible vinyl floor tiles in colour Blue Sky (Product Code: MS172) laid in accordance to manufacturers specifications					
3	On floors	m2	684			
4	100mm Vinyl skirtings	m	259			
	Carried to Collection				R	

	Heavy duty entrance carpet/mat (Cost Price R 2 500.00(net)/mat, delivered on site, and excluding labour, waste and VAT)				
5	Walk-off entrance carpet	No	1		
	WALL LININGS				
	Belgotex or other equally approved "Serengeti" floor carpets, with 300mm black borders to floors				
6	Carpets: On walls	m2	28		
	12mm Thick Fibre cement wall cladding fixed to light-weight steel structure to specialist's details				
7	12mm Fibre cement wall cladding	m2	2		
8	12mm Fibre cement cladding around steel columns	m2	223		
	SKIRTINGS, NOSINGS, ETC				
	"M•Trim" or other equally approved floor trim, nosings etc				
9	Brass anodised 20 x 10,5mm high aluminium carpet gripper straight (Code : ACTGSE100.B), plugged and counter sunk screwed into cement screed with stainless steel screws.	m	35		
10	Aluminium dividing/edge strip	m	10		
	"Genesis" or other equally approved heavy duty aluminium stair nosing (Product Code: NHD05) to stairs				
11	Aluminium tile-in stair nosing bedded in tile adhesive while tiles are laid.	m	17		
	Carried to Collection			R	

Section No. 2

Bill No. 7

Floor Coverings, Plastic Lining, etc

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	62		
	63		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 8				
	IRONMONGERY (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	Finishes to ironmongery:				
	Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AS Anodized silver AB Anodized bronze AG Anodized gold ABL Anodized black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded				
	NOTE: Where references to items have been made by trade name, the Tenderers are invited to tender on other or equal approved items				
	HINGES, BOLTS, ETC				
	"Dormakaba" or other equally approved				
1	150mm Satin chrome flush bolts with bolts with heel (Code:DFB-SC-180/150 SC)	No	10		
2	Adjustable roller bolt (Code:DBC-SS-022)	No	5		
	Carried to Collection			R	

3	100mm Galvanized barrel bolt with keep fixed to metal	No	4		
	"EN-SUITE" LOCKS				
	"Dormakaba" or other equally approved				
4	Code D032D SS Bathroom dead lock	No	15		
5	Code D036S Euro profile cylinder sash lock and stainless steel forend	No	44		
6	Code D037D SS Euro profile cylinder dead lock	No	92		
7	Code DWC-006 Stainless steel water closet indicator with 79mm turn knob for physically impaired.	No	18		
8	Code D038R NP Rebate conversion kit for euro profile lock	No	5		
9	Code DDC206301MK Nickel plated 63mm five pin euro-profile master-keyed knob double cylinder	No	92		
10	Code DKC206301MK Nickel plated 63mm five pin euro-profile master-keyed knob cylinder	No	44		
	HANDLES				
	"Dormakaba" or other equally approved				
11	Code SH875CYL Satin finish solid stainless steel spring loaded lever handles	Pairs	136		
12	Code DPH301C BTB Stainless steel "D" shaped straight back-to-back pull handles	Pairs	7		
13	Code DPH301C BT Stainless steel "D" shaped straight back-to-back pull handles	Pairs	7		
14	Code DRP-SS-023 Stainless steel ring flush pull handle, size 62x44mm	Pairs	7		
	PUSH PLATES AND KICKING PLATES				
	"Dormakaba" or other equally approved				
15	Push plate size 150 x 300 x 1.2mm (Code: DPP-430-BL-SF) to have six countersunk holes for screwing	No	14		
	Carried to Collection			R	

	DOOR CLOSERS				
	"Dormakaba" or other equally approved				
16	Mechanical hold open cam action slide channel door closure pull side door leaf fixing, push side transom fixing (Code: TS91B HO - SL)	No	7		
17	Mechanical non-hold open cam action slide channel door closure pull side door leaf fixing, push side transom fixing (Code: TS91B HO - SL)	No	15		
	LETTERS, NAMEPLATES, ETC				
	"Dormakaba" or other equally approved				
18	150 x 150mm Standard stainless steel gents pictogram code DSS-130M	No	5		
19	150 x 150mm Standard stainless steel ladies pictogram code DSS-131F	No	5		
20	150 x 150mm Standard stainless steel disabled persons pictogram code DSS-133P	No	1		
21	150 x 150mm Standard stainless steel TEA CUP pictogram code DSS-135 TC	No	3		
22	150 x 150mm Standard stainless steel FIRE HOSE REEL pictogram code DSS-145 FHR	No	1		
23	150 x 150mm Standard stainless steel FIRE EXTINGUISHER pictogram code DSS-146 FE	No	1		
	PELMETS AND CURTAIN TRACKS				
	Perforated Silver aluminium venetian blind, with 25 x 0,21mm thick slats including 25 x 25mm high matching aluminium powder coated top and bottom tracks with stainless steel separator pins, cordlock and roller pins, blinds to be fitted according to Architect specification				
24	Window opening size 900 x 2380mm high	No	5		
25	Window opening size 950 x 1700mm high	No	4		
26	Window opening size 1800 x 3315mm high	No	1		
	Carried to Collection			R	

27	Window opening size 1900 x 2380mm high	No	51		
28	Window opening size 2150 x 3315mm high	No	1		
29	Window opening size 2820 x 1700mm high	No	2		
30	Window opening size 4000 x 3315mm high	No	3		
31	Window opening size 5760 x 1700mm high	No	1		
	BATHROOM FITTINGS				
	"Franke" or other equally approved				
32	Wall mounted stainless steel folded paper towel dispenser, overall size 300 x 270 x 340mm high with a capacity of 300-400 towels and cylinder lock with standard key, plugged and screwed to the wall with stainless steel screws	No	17		
33	Wall mounted stainless steel recessed waste disposal bin, overall size 396 x 270 x 520mm high, with a capacity of 45 litres and cylinder lock	No	14		
34	Wall mounted stainless steel sanitary towel disposal bins, overall size 304 x 205 x 134mm deep, with a capacity of 6 litres, plugged and screwed to the wall with stainless steel screws	No	15		
35	Wall mounted stainless steel soap dispenser, size 304 x 100 x 134mm deep with a replaceable and refillable 1 litre container, cylinder lock with standard key, plugged and screwed to the wall with stainless screws	No	17		
36	Wall mounted stainless steel 2 roll toilet roll holder, size 304 x 156 x 141mm deep for 2 rolls maximum 108mm diameter with spindle system and cylinder lock with standard key, plugged and screwed to the wall with stainless steel screws	No	27		
37	Wall mounted stainless steel automatic hands free hand dryer, size 284 x 202 x 248mm deep with 2 vandal proof lock screws and key wrench, plugged and screwed to the wall with stainless steel screws, 200W motor connected to 230/240 volt power supply, with a 5 year warranty	No	8		
	Carried to Collection			R	

	Stainless steel paraplegic rails				
38	Stainless steel rear grab rail around cistern, plugged	No	1		
39	Stainless steel side grab rail, plugged	No	1		
	SUNDRIES				
	"Dormakaba" or other equally approved				
40	Rubber door stop	No	10		
	"Dormakaba" or other equally approved				
41	DDS-NP-018 Nickel plated floor stop	No	168		
42	DPS-SS-032 Dust proof socket	No	5		
43	DHC-SS-031B Stainless steel hat and coat hook with rubber buffer.	No	1		
44	DCE-002 Escutcheon on rose bathroom	Pairs	7		
	SHELVES ETC				
	The following in book shelves				
45	Book shelves made of 16mm Thick particle board with post formed edges and laminated both sides, with a 200mm high kickplate at the bottom. The overall size of the book shelf, 2000mm wide x 350mm deep x 2200mm high, with four shelves at 400mm centres. The description is to be read in conjunction with the following drawing: (Drawing number 25649/Joinery/511).	No	16		
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC.				
	Pinning Boards				
46	Wall mounted pin board overall size 1500x1200mm, mounted with complete fixing components and secured in position to brickwork	No	3		
	Carried to Collection			R	

Section No. 2

Bill No. 8

Ironmongery

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	65		
	66		
	67		
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	69		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 9				
	METALWORK (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	For preambles see "Model Preambles for Trades"				
	Primer:				
	All surfaces of steelwork to be painted with one coat approved factory primer before leaving the workshop of the Manufacturer and all scratches, chips or blemishes to be made good on site after erection. All rates tendered must make provision for this as no claim will afterwards be entertained.				
	Bolts, etc.:				
	Descriptions of bolts shall be deemed to include nuts and washers.				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete.				
	Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described.				
	Carried to Collection			R	

	Rebates of door frames Frames are, unless otherwise described, double rebated and suitable for 40 mm thick doors.				
	Rebates of door frames: Frames are, unless otherwise described, double rebated and suitable for 40 mm thick doors.				
	Striking plates for door frames: Unless otherwise described all striking plates to be of chromium plated type.				
	STEEL HANDRAILS, BALUSTRADES, ETC				
	Stainless steel balustrade (Prime Cost of R 1000/m delivered to site, excluding labour and VAT)				
1	Stainless steel balustrade	m	140		
	PRESSED STEEL DOOR FRAMES				
	1.6mm Rebated frames suitable for one brick walls				
2	Frame for door 813 x 2032mm high	No	1		
	ALUMINIUM WINDOWS, DOORS, ETC				
	Note: Tenderers are referred to architect's drawings annexed to these bills of quantities for tender purposes				
	Purpose made powder coated natural anodized aluminium windows , factory glazed with 6.5mm laminated clear safety glass according to SABS regulations and plugged to brickwork or concrete				
3	Window type 6, size 800 x 1025mm high	No	1		
4	Window type AL1, size 1200 x 1500mm high	No	1		
	VENTILATOR				
5	500 X 500mm high ventilator	No	1		
	Carried to Collection			R	

Section No. 2

Bill No. 9

Metalwork

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	71		
	72		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 10				
	PLASTERING (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	Preparatory work for textured finishes:				
	Textured finishes to be applied to plaster (plaster elsewhere)				
	All surfaces are to be inspected and approved by the Representative/Agent before any work is commenced with				
	Prices for textured finishes:				
	Prices are to include for all priming, preparatory work, etc.				
	PVC acrylic waterbased and PVC resin bonded textured finish:				
	All specialist plaster wall finishes are to be applied to the satisfaction of the Representative/Agent and executed by an approved firm of specialists, all strictly in accordance with the materials supplied and methods employed by the Manufacturer				
	EPOXY				
	Carried to Collection			R	

	Approved anti-corrosion epoxy coating to steel columns in strict accordance with the manufacturer's instructions				
1	Steel columns and beams	m2	330		
	SCREEDS				
	Cement plaster screeds wood floated on concrete				
2	25mm Thick on floors and landings (on cantilever slabs)	m2	53		
3	50mm Thick on floors and landings	m2	72		
	GRANOLITHIC				
	Untinted granolithic on concrete				
4	Concave skirting 250mm high (LI)	m	95		
	INTERNAL PLASTER				
	Gypsum skim plaster on concrete				
5	On walls	m2	68		
	Cement plaster on brickwork				
6	Walls	m2	2,839		
7	Narrow widths	m2	1		
	SPECIALIST PLASTER WALL COVERINGS				
	All specialist floor and wall coverings are to be executed in strict accordance with the manufacturer's instructions				
8	Waterproofed plaster to walls	m2	159		
	Carried to Collection			R	

Section No. 2

Bill No. 10

Plastering

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	74		
	75		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 11				
	TILING (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	Standards				
	All tiles must confirm to the relevant ISO standards and be fit for intended pupose				
	Descriptions				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	Unglazed clay tiles:				
	All tiles to be true and even in shape and free from cracks, chips, blemishes and other defects and to be factory sealed with an approved sealer . All tiles to de dipped in water for 24 hours immediately before fixing and are to be bedded in and including cement mortar, unless otherwise described, to true and even surfaces and grouted with 8 mm wide continuous joints in both directions, all strictly in accordance with the Manufacturer's instructions				
	Carried to Collection			R	

	Prices: Prices are to include for all square cutting and waste, cleaning off on completion and protection from injury. Areas are measured net to face of bare brickwork and concrete. Any additional area caused by the thickness of tiling and screed are to be allowed for in prices				
	WALL TILING				
	150 x 150mm "White Gloss" ceramic tiles fixed with adhesive to plaster in accordance with the manufacturer's instructions (plaster elsewhere) and flush pointed with tinted waterproof jointing compound				
1	On walls	m2	502		
	Listello "stair nosing" tiles (Cost Price R150.00(net)/m, delivered on site, and excluding labour, waste and VAT) fixed with adhesive to plaster (plaster elsewhere) and flush pointed with tinted jointing compound				
2	On tread edge of stairs	m	17		
	FLOOR TILES				
	Ceramic floor tiles (Cost Price R250.00(net)/m2, delivered on site, and excluding labour, waste and VAT) fixed with adhesive to existing power floated surface bed				
3	On floors	m2	59		
	600 x 600 x 8mm Full body porcelain floor tiles fixed with 2mm joints on tile cement to existing floors				
4	On floors	m2	282		
5	Skirting 150mm high	m	41		
6	600 x 300mm Boarder tile	m	82		
	Carried to Collection			R	

Section No. 2

Bill No. 11

Tiling

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	77		
	78		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 12				
	PLUMBING AND DRAINAGE (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	uPVC pipes and fittings:				
	Soil, waste and vent pipes and fittings shall be solvent weld jointed				
	Copper pipes:				
	Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground				
	Fixing of pipes				
	Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level				
	Carried to Collection			R	

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster

Excavations

No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling

"Soft rock" and "hard rock" shall be as defined in "Earthworks"

Laying, backfilling, bedding, etc. of pipes

Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

Carried to Collection R

	Flush pans				
	Flush pans shall have straight or side outlets and "P" or "S" traps as necessary				
	Stainless steel basins, sinks, wash troughs, urinals, etc.				
	Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable				
	Waste unions				
	Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings				
	RAINWATER DISPOSAL				
	Chromadek Gutter to manufacturers specifications				
1	150 x 120mm gutters	m	71		
2	Extra over 125 x 100mm eaves gutter for stopped end	No	4		
3	Extra over 125 x 100mm eaves gutter for outlet for 100mm pipe	No	10		
4	100mm Rainwater pipes	m	72		
5	Extra over 100mm rainwater pipe for bend	No	10		
6	Extra over 100mm rainwater pipe for shoe	No	10		
	SANITARY FITTINGS				
	"Vaal" or other equally approved				
7	Vaal Sanitaryware Daisy vitreous china semi close coupled washdown suite colour White, comprising 90º outlet open rim pan (code: 751400) and matching 9 litre front single flush cistern (code: 710532) including lid, fitments and flushpipe elbow, with heavy duty seat.	No	8		
	Carried to Collection			R	

8	Vaal Sanitaryware Daisy vitreous china lavatory basin colour White (code: 7008), size 510 x 400mm with two tapholes, including integrated overflow and chainstay hole bolted to wall with two x 10mm bolts (code: 8448Z0) and including Classic floor mounted pedestal (code: 7150) and sealed with silicone sealant where basin meets wall.	No	5		
9	Vaal Sanitaryware Protea Paraplegic white vitreous china floor mounted paraplegic washdown suite (product code 750200) comprising 90º outlet pan (product code 7502) and matching 9 litre cistern (product code 710631), including lid, fitments and purpose-made chromium plated side flush lever.	No	1		
10	Vaal Sanitaryware 415 x 275 x 315mm Flatback white vitreous china wall mounted urinal (product code 705326) including 38mm chromium plated domical grating (product code 8787Z0) and chromium plated top inlet spreader (product code 8543Z0) fixed on and including two hanger brackets (product code 8127Z0).	No	3		
	"Franke" or other equally approved				
11	Franke Curvline Model CVN622 Grade 304 18/10 polished stainless steel centre inset sink (Code: 312870), size 1500 x 435mm wide with two 370 x 340 x 162mm deep bowls, fitted onto cupboard (elsewhere specified) including 50mm waste fitting and PVC traps (traps elsewhere specified).	No	3		
	Sundries				
12	Testing drainage pipe system		Item		
	WASTE UNIONS ETC				
	"Cobra Watertech" or other equally approved				
13	32mm Basin waste union	No	5		
14	38mm Bath or sink waste union	No	6		
	TRAPS, ETC.				
	Carried to Collection			R	

	"Cobra" or other equally approved				
15	40 x 300mm Sink combination for double bowl with deepseal "P" trap	No	3		
16	40 x 32mm Cobra CAT No 320 CP Bottle trap complete	No	5		
	TAPS, VALVES, ETC				
	Brass				
17	15mm Fullway ballcock	No	16		
	"Cobra Watertech" or other equally approved				
18	Cobra Watertech Carina 15mm chrome square pattern pillar tap with aerator outlet and flanged backnut (Code: 114CA-15)	No	24		
19	Cobra Watertech Carina 15mm chrome wall mounted sink mixer with overarm swivel outlet, adjustable wall flanges and exposed connections (Code: 166/041CA and S-041)	No	3		
	SANITARY PLUMBING				
	PVC pipes				
20	50mm Pipes	m	17		
21	110mm Pipes	m	6		
	Extra over PVC pipes for fittings				
22	50mm Bend	No	3		
23	50mm Access Bend	No	19		
24	110 x 50mm Reducer	No	8		
25	110mm Pan connector	No	9		
	Sundries				
26	Testing waste pipe system		Item		
	Carried to Collection			R	

	WATER SUPPLIES				
	Extra over high density polyethylene class 16 pipes for fittings				
27	15mm Pipes chased into brick walls	m	81		
	Extra over class "O" copper pipes for capillary fittings				
28	15mm Fittings	No	57		
	Extra over class "0" copper pipes for brass compression fittings				
29	15mm Fittings	No	44		
	Copper overflow and service pipes				
30	15mm Service pipe 500mm girth	No	25		
	Sundries				
31	Testing water pipe system		Item		
	ELECTRIC WATER HEATERS				
	"Franke" or other equally approved				
32	10 Litre "KWIKBOIL 10S/S" wall mounted electric water heater including drip tray (code:KBSSTRAY)	No	4		
	Carried to Collection			R	

Section No. 2

Bill No. 12

Plumbing and Drainage

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	80		
	81		
	82		
	83		
	84		
	85		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 13				
	GLAZING (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	GLAZING TO STEEL WITH PUTTY				
	4mm Clear float glass				
1	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	4		
	6.38mm Laminated safety glass				
2	Panes exceeding 0,5m2 and not exceeding 2m2	m2	24		
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with bevelled edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs to brickwork or concrete				
3	Mirror 600 x 900mm high	No	20		
4	Mirror 1100 x 1000mm high	No	2		
5	Mirror 800 x 1700mm high	No	6		
	Carried Forward to Summary of Section No. 2			R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 14				
	PAINTWORK (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	Paint:				
	All paint, complete with undercoat, primer, etc., to be used strictly in accordance with the manufacturer's specification. Only paint which bears the described trade names will be permitted on site. No substitution will be allowed				
	NOTE: References to the following items have been made by trade name only, Contractors are invited to tender on other or equal approved items				
	All paints used should have a 7 year quality guarantee				

	PAINT WORK ETC TO NEW WORK				
	ON FLOATED PLASTER				
	Carried to Collection			R	

	PAINT TO PRISON CELL One coat "Plascon Plaster Primer" (UC56), and two coats "Plascon Super Universal Enamel" (NY/G) or other equally approved				
1	On internal walls	m2	184		
	One coat plaster primer, one undercoat and two coats Acrylic Emulsion paint				
2	On internal walls (LI)	m2	2,883		
	ON PLASTER BOARD				
	One coat alkali resistant primer, one undercoat and two coats acrylic emulsion paint				
3	On partitions	m2	114		
4	On ceilings (LI)	m2	218		
5	Facias and barge boards	m2	7		
	Prepare surfaces and remove all loose material. Apply one coat Plaster key, Gyproc Rhinolite skim plaster and two coats Plascon Acrylic PVA paint to new interior plasterboard or other equally approved				
	ON FIBRE-CEMENT				
	One coat alkali resistant primer, one undercoat and two coats acrylic emulsion paint				
6	On walls	m2	225		
	ON WOOD				
	Three coats clear varnish				
7	On doors	m2	224		
8	On skirtings, rails, etc not exceeding 300 mm girth	m	1,126		
	Carried to Collection			R	

PAINTWORK, ETC TO PREVIOUSLY PAINTED WORK

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Previously painted metal surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal. Rusted surfaces shall be cleaned and sanded down to bare metal.

Previously painted steel surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare steel. Rusted surfaces shall be cleaned and sanded down to bare steel.

Previously painted wood surfaces

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

Previously varnished wood surfaces

Surfaces shall be thoroughly sanded down. Blistered or peeling wood surfaces shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

ON FLOATED PLASTER

PAINT TO PRISON CELL One coat "Plascon Plaster Primer" (UC56), and two coats "Plascon Super Universal Enamel" (NY/G) or other equally approved

9	On internal walls	m2	184		

Carried to Collection R

	One coat plaster primer, one undercoat and two coats Acrylic Emulsion paint				
10	On internal walls (LI)	m2	3,767		
	Two coats Acrylic Emulsion paint				
11	On ceilings and beams (LI)	m2	47		
	ON PLASTER BOARD				
	Two coats Acrylic Emulsion paint				
12	On partitions	m2	109		
13	On ceilings (LI)	m2	4		
	ON METAL				
	Two coats high gloss enamel				
14	On doors (LI)	m2	23		
15	On door frames (LI)	m2	235		
16	On windows with burglar bars	m2	717		
17	On burglar bars (LI)	m2	52		
18	On columns and beams	m2	104		
19	On gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area) (LI)	m2	54		
	Two coats premium quality UV-resistant waterbased acrylic roof coating				
20	On ribbed roof and side cladding (measured on flat) (LI)	m2	2,529		
	ON STEEL MEMBERS				
	Two coats of acrylic paint				
21	On columns and beams	m2	330		
	ON WOOD				
	Carried to Collection			R	

	Two coats pure acrylic emulsion sheen paint				
22	On fittings (LI)	m2	45		
23	On skirtings, rails, etc not exceeding 300 mm girth	m	640		
	Two coats clear varnish				
24	On slated timber wall panelling	m2	191		
25	On skirtings, rails, etc not exceeding 300 mm girth	m	598		
	Three coats clear varnish				
26	On doors	m2	684		
27	On door frames	m2	14		
28	On timber balustrade	m2	79		
	Carried to Collection			R	

Section No. 2

Bill No. 14

Paintwork

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	88		
	89		
	90		
	91		
	92		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 15				
	PUMP HOUSE (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	EARTHWORKS				
	Excavation in earth not exceeding 2m deep				
1	Bases	m3	0.2		
2	Trenches	m3	3		
	Extra over all excavations for carting away				
3	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	2		
	Risk of collapse of excavations				
4	Sides of trench and hole excavations not exceeding 1,5m deep	m2	16		
	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density				
5	Backfilling to trenches, holes, etc	m3	0.2		
	Carried to Collection			R	

	Earth filling supplied by the contractor compacted to 93% Mod AASHTO density				
6	Under floors, steps, pavings, etc	m3	4		
7	G6 material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density	m3	9		
	Compaction of surfaces				
8	Compaction of ground surface under pavings etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	52		
	Soil insecticide				
9	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	73		
	UNREINFORCED CONCRETE				
	20MPa/19mm concrete				
10	Aprons	m3	2		
	25MPa/19mm concrete				
11	Bases	m3	0.1		
12	Strip footings	m3	1		
13	Surface beds	m3	3		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
14	Apron slabs to falls	m2	51		
	ROUGH FORMWORK (DEGREE OF ACCURACY II)				
	Carried to Collection			R	

	Rough formwork to sides				
15	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	22		
	MOVEMENT JOINTS ETC				
	Expansion joints with 10mm soft board between vertical concrete and brick surfaces				
16	10mm Joints not exceeding 300mm high	m	22		
	REINFORCEMENT				
	High tensile steel reinforcement to structural concrete work:				
17	10mm Diameter bars	t	0.12		
18	12mm Diameter bars	t	0.32		
	Fabric reinforcement				
19	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	29		
	DAMP PROOFING OF WALLS AND FLOORS				
	One layer of 250 micron "Consol Plastics Gunplas USB Green" or other equal approved waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape" or other equally approved tape				
20	Under surface beds	m2	29		
	PROFILED METAL SHEETING AND ACCESSORIES				
	0.58mm Thick "Safintra Saflok 700 Colorplus AZ150" or other equally approved interlocking roof sheeting fixed to steel or timber purlins and ridge/eave purlins Saflok 700 clips which are fastened to steel or timber purlins with approved wafer head self-tapping fasteners, all in accordance with the manufacturer's recommendations				
21	Roof coverings with pitches not exceeding 25 degrees	m2	32		
	STEELWORK				
	Carried to Collection			R	

	Welded columns in single lengths with flat section base, top, bearer and connection plates bolted to concrete				
22	IPE 140 Galvanized steel I-section column in lengths not exceeding 13m	t	0.10		
23	75 x 75 x 6mm - Galvanized (square hollow section) Columns	t	0.03		
	Welded beams in single lengths with flat section bearer and connection plates bolted to steel columns				
24	IPE 100 Galvanized steel I-section beams in lengths not exceeding 13m	t	0.09		
	Welded bracing etc with flat section connection plates bolted to steel				
25	Angle section bracing	t	0.05		
26	L-shaped cleat formed of 100 x 75 x 8mm flat section holed for bolt(s) and welded on	No	4		
	Purlins and girts welded to steel				
27	Lipped channel section purlins	t	0.15		
	Bolts and bases to columns, beams, etc				
28	225 x 225 x 12mm Base plate holed for bolts and welded on	No	4		
29	16mm Diameter U-shaped anchor bolt 350mm girth embedded in top of concrete.	No	8		
30	Hole through 16mm steel for bolt	No	16		
	SCREEDS				
	Cement plaster screeds wood floated on concrete				
31	30mm Thick on floors and landings	m2	29		
	STEEL FENCE				
	Carried to Collection			R	

	Density steel fence flat panels with PVC coating fixed to steel posts				
32	Steel fence overall 1800mm high above ground level as per Architects specification, complete including foundations, ground beam, etc. as per detail (Refer to Drawing 25649/DATA/502)	m	19		
33	Double pedestrian gate overall 1500 x 1800mm high as per detail (Refer to Drawing 25649/DATA/502)	No	1		
	PAINT WORK ETC TO NEW WORK				
	Spot priming defects in pre primed surfaces with zinc chromate primer and applying one undercoat and two coats Plascon Wall & WAA or other equally approved paint				
34	On angles, rails, bars, pipes, etc not exceeding 300 mm girth	m	20		
	Carried to Collection			R	

Section No. 2

Bill No. 15

Pump House

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	94		
	95		
	96		
	97		
	98		
Carried Forward to Summary of Section No. 2		R	

Item No		Unit	Quantity	Rate	Amount
	SECTION 2: BUILDING WORKS				
	BILL NO. 16				
	PROVISIONAL SUMS				
	NOTE: The Contractors are to note the following:The Client reserves the right to omit any or all of the Provisional Sums allowed for in this tender without any claim for loss of profit by the Contractor				
	NOTE:The following amounts are for work to be carried out by a selected or nominated sub-contractor, nominated or selected by the Principal Agent and the Main Contractor				
	COURTS A, B & C (FIXED FURNITURE AND ACOUSTIC PANELS)				
1	Provide the sum of R 300 000,00 (Three Hundred Thousand Rand) for fixing, repairing and repainting of existing fixed furniture and acoustic timber panels in COURTS A, B & C		Item		300,000.00
2	Add for profit upon above, if required		Item		
3	Attend upon the firm executing the installation		Item		
	CLERK OF WORKS				
4	Provide the sum of R 630 000.00 (Six Hundred and Thirty Thousand Rand) for the Clerk of Works for the construction period of eighteen (18) months		Item		630,000.00
5	Add for profit upon above, if required		Item		
6	Attend upon the firm executing the installation		Item		
	COMMUNITY LIAISON OFFICER (CLO)				
7	Provide the sum of R 108 000.00 (One Hundred and Eight Thousand Rand) for the stipend of the Community Liaison Officer (CLO)		Item		108,000.00
8	Add for profit upon above, if required		Item		
	Carried to Collection			R	

9	Attend upon the firm executing the installation		Item		
	PROJECT STEERING COMMITTEE (PSC)				
10	Provide the sum of R 9 000.00 (Nine Thousand Rand) for the stipend for the attendance of meetings by the Project Steering Committee (PSC) members		Item		9,000.00
11	Add for profit upon above, if required		Item		
12	Attend upon the firm executing the installation		Item		
	TEMPORARY STORAGE FACILITIES ON SITE				
13	Provide the sum of R 79 530.00 (Seventy Nine Thousand, Five Hundred and Thirty Rand) for the temporary storage facilities on site for the duration of the eighteen (18) months construction period		Item		79,530.00
14	Add for profit upon above, if required		Item		
15	Attend upon the firm executing the installation		Item		
	Carried to Collection			R	

Section No. 2

Bill No. 16

Provisional Sums

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	100		
	101		
Carried Forward to Summary of Section No. 2		R	

SECTION SUMMARY - SECTION 2 : BUILDING WORKS

Bill No		Page No	Amount
1	Alterations	42	
2	Masonry	45	
3	Waterproofing	48	
4	Roof Covering	51	
5	Carpentry and Joinery	56	
6	Ceilings, partitions and access flooring	61	
7	Floor Coverings, Plastic Lining, etc	64	
8	Ironmongery	70	
9	Metalwork	73	
10	Plastering	76	
11	Tiling	79	
12	Plumbing and Drainage	86	
13	Glazing	87	
14	Paintwork	93	
15	Pump House	99	
16	Provisional Sums	102	
	Carried to Final Summary		R

Section No. 2
Thohoyandou High Court: Repairs and Renovations
WCS 048609

Item No		Quantity	Rate	Amount
	SECTION 3: CIVIL WORKS			
	BILL NO. 1			
	EXTERNAL WORKS (LI)			
	This trade is Labour Intensive (LI)			
	PREAMBLES			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	SUPPLEMENTARY PREAMBLES			
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect			
	Nature of ground			
	a Soil investigation has been caried out, results can be obtained from the Engineers			
	Soil poisoning and insecticide:			
	All soil poisoning and insecticide to be applied under a ten year guarantee by an approved firm of Specialists			
	Carting away of excavated material			
	Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site			
	Carried to Collection		R	

	General Notes:				
	1 Fill material shall be placed in lifts of not more than 150mm. Compaction density to be controlled using DCP apparatus to a maximum of 30mm/blow 93% MOD AASHTO compaction is to be achieved.				
	2 Where backfill is required on both sides of walls, backfill both sides simultaneously.				
	3 Where compaction of fill material behind retaining walls is done using mechanical rollers, the rollers must be kept 500mm away from the wall & this 500mm portion must be compacted with hand stampers or wackers.				
	Rock excavations				
	No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling				
	APRON & RAMPS				
	EARTHWORKS				
	Excavation in earth not exceeding 2m deep				
1	Reducing levels under floors	m3	167		
	Earth filling supplied by the contractor compacted to 93% Mod AASHTO density				
2	Under floors, steps, pavings, etc	m3	56		
3	G6 material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density	m3	111		
	Compaction of surfaces				
4	Compaction of ground surface under pavings etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	371		
	Carried to Collection			R	

	Soil insecticide				
5	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	371		
	UNREINFORCED CONCRETE				
	20MPa/19mm concrete				
6	Aprons	m3	37		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
7	Apron slabs to falls	m2	371		
	ROUGH FORMWORK (DEGREE OF ACCURACY II)				
	Rough formwork to sides				
8	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	251		
	MOVEMENT JOINTS ETC				
	Expansion joints with 10mm soft board between vertical concrete and brick surfaces				
9	10mm Joints not exceeding 300mm high	m	100		
	THE FOLLOWING ON ELEVATED CANTILEVER PEDESTRIAN WALKWAY				
	EARTHWORKS				
	Excavation in earth not exceeding 2m deep				
10	Bases	m3	2		
	Extra over all excavations for carting away				
11	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	1		
	Carried to Collection			R	

	Risk of collapse of excavations				
12	Sides of trench and hole excavations not exceeding 1,5m deep	m2	9		
	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density				
13	Backfilling to trenches, holes, etc	m3	2		
	Compaction of surfaces				
14	Compaction of ground surface under pavings etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	2		
	25 MPa/19mm concrete				
15	Bases	m3	1		
	PRECAST CONCRETE HOLLOW CORE SLABS				
	"Elematics" or other equally precast concrete hollow core slabs incl. grouting, etc.				
16	200mm Thick precast concrete hollow core slabs elevated to steel covered walkway (Detail/Drawing No. S9709-TD-001 and S9709-TD-02)	m2	140		
	FLOOR TILING				
	Full bodied porcelain non-slip floor tiles (Cost Price R 250,00(net)/m2, delivered on site, and excluding labour, waste and VAT) fixed with adhesive to plaster (plaster elsewhere) and flush pointed with tinted jointing compound				
17	On floors	m2	140		
	STEEL COLUMNS AND BEAMS				
	Carried to Collection			R	

	Welded columns in single lengths with flat section base, top, bearer and connection plates bolted to concrete				
18	IPE 160 I-Section column	t	0.11		
	Welded beams in single lengths with flat section bearer and connection plates bolted to steel columns				
19	IPE 160 beams in lengths exceeding 13m and not exceeding 18m	t	0.18		
	Bolts to columns, beams, etc				
20	16mm Diameter U-shaped anchor bolt 350mm girth embedded in top of concrete.	No	4		
21	Hole through 16mm steel for bolt	No	8		
	SCREEDS				
	Cement plaster screeds wood floated on concrete				
22	30mm Thick on floors and landings	m2	140		
	THE FOLLOWING IN STEEL WATER TANK CONCRETE PLINTH				
	EARTHWORKS				
	Excavation in earth not exceeding 2m deep				
23	Holes	m3	13		
24	Trenches	m3	9		
	Extra over trench and hole excavations in earth for excavation in				
25	Soft rock	m3	1		
26	Hard rock	m3	0.5		
	Extra over all excavations for carting away				
27	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	23		
	Carried to Collection			R	

	Risk of collapse of excavations				
28	Sides of trench and hole excavations not exceeding 1,5m deep	m2	41		
	Earth filling supplied by the contractor compacted to 93% Mod AASHTO density				
29	Under floors, steps, pavings, etc	m3	4		
30	G5 material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density	m3	9		
	Compaction of surfaces				
31	Compaction of ground surface under pavings etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	30		
	Soil insecticide				
32	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	81		
	REINFORCED CONCRETE				
	25 MPa/19mm concrete				
33	Surface beds	m3	17		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
34	On concrete slabs	m2	30		
	ROUGH FORMWORK (DEGREE OF ACCURACY II)				
	Rough formwork to sides				
35	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	22		
	REINFORCEMENT				
	Carried to Collection			R	

	Mild steel reinforcement to structural concrete work				
36	8mm Diameter bars	t	0.56		
	High tensile steel reinforcement to structural concrete work				
37	12mm Diameter bars	t	1.12		
	Fabric reinforcement				
	DAMP PROOFING OF WALLS AND FLOORS				
38	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	60		
	One layer of 250 micron "Consol Plastics Gunplas USB Green" or other equal approved waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape" or other equally approved tape				
39	Under surface beds	m2	81		
	Carried to Collection			R	

Section No. 3

Bill No. 1

External Works

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	104		
	105		
	106		
	107		
	108		
	109		
	110		
Carried Forward to Summary of Section No. 3		R	

Item No			Quantity	Rate	Amount
	SECTION 3: CIVIL WORKS				
	BILL NO. 2				
	ROADWORK AND PAVING (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	ROADWORK				
	REMOVAL OF EXISTING WORK				
	Breaking up and removing				
1	180 x 280mm Concrete kerbs	m	36		
	Removing and set aside for re-use				
2	60mm Thick concrete paving	m2	145		
	EXCAVATION, FILLING, ETC				
	Excavation in earth not exceeding 2m deep				
3	Reducing levels under floors	m3	240		
	Earth filling supplied by the contractor under pavings etc				
4	Stabilized natural gravel compacted to 95% of modified AASHTO density	m3	11		
	Carried to Collection			R	

5	150mm Subgrade G5 in-situ material from spoil compacted to 95% MOD. AASTHO density	m3	11		
6	G6 in-situ material from spoil compacted to 95% MOD. AASTHO density	m3	240		
	Coarse river sand filling supplied by the contractor				
7	Under floors etc	m3	24		
	Compaction of surfaces				
8	Compaction of ground surface under pavings etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	798		
	Soil insecticide				
9	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	798		
	PAVING				
	60mm paving bricks from materials set aside with all new work related to butt joints on 20mm thick river sand bed with sand and cement mixture swept into joints and hosed down				
10	Existing paving in herringbone bond to falls	m2	145		
	Clean/hose down existing paving				
11	Existing paving in stretcher bond to falls	m2	3,630		
	60mm Interlocking paving laid in Herringbone pattern on 20mm thick river sand bed with sand swept into joints				
12	Paving in herringbone bond to falls	m2	798		
	KERBS				
	Carried to Collection			R	

	Precast concrete kerbs				
13	Excavate for and lay precast concrete mountable kerb size 300 x 200mm (Fig 8C) bedded on cement mortar and with a pocket of concrete at back and backfilling behind kerb in earth to level including forming angles, ends, joints, etc.	m	28		
	DAMP PROOFING				
	One layer of 250 micron "Polyolefin waterproof sheeting" (SABS 952 type C) or other equally approved sheeting, sealed at laps with PVC self-adhesive tape				
14	Under surface beds	m2	798		
	Carried to Collection			R	

Section No. 3

Bill No. 2

Roadwork and Paving

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	112		
	113		
	114		
Carried Forward to Summary of Section No. 3		R	

Item No			Quantity	Rate	Amount
	SECTION 3: CIVIL WORKS				
	BILL NO. 3				
	WATER RETICULATION (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	WATER RETICULATION				
	Class 12 High density polyethylene pipes				
1	90mm Pipes laid in and including trenches	m	58		
	Extra over class 12 high density polyethylene pipes for fittings				
2	90mm Bend	No	2		
3	90mm Junction	No	1		
4	90mm Tee	No	2		
5	90mm Flange adapter	No	1		
6	90mm Gate valve	No	1		
	Galvanised steel pipes				
7	60mm Pipe	m	13		
8	90mm Pipe	m	28		
	Carried to Collection			R	

	Extra over galvanised steel pipes for steel fittings				
9	60mm Bend	No	4		
10	90mm Bend	No	8		
11	90mm "Viking Johnson" connectors	No	2		
12	90mm Isolating valve	No	2		
	Sundries				
13	Unreinforced concrete in thrust blocks at bends, tees, etc including necessary extra excavation, formwork, etc	m3	1		
14	175 x 115mm Cast iron valve box including 450 x 450 x 150mm concrete collar, 200mm diameter upvc sleeve, soilcrete and brick chamber below not exceeding 1000mm deep	No	1		
15	Cutting into and connecting to existing 50mm HDPE water line including T piece, flange adapters etc		Item		
16	Testing water pipe system		Item		
	GALVANIZED STEEL WATER STORAGE TANKS				
	Galvanized bolted steel water storage tanks				
17	72.634 Kilolitres galvanized bolted water storage tank, assembled and resting on concrete plinth	No	1		
	Testing				
18	Testing water pipe system		Item		
	Carried to Collection			R	

Section No. 3

Bill No. 3

Water Reticulation

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	116		
	117		

Carried Forward to Summary of Section No. 3 R

Item No			Quantity	Rate	Amount
	SECTION 3: CIVIL WORKS				
	BILL NO. 4				
	STORMWATER MANAGEMENT (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	SUPPLEMENTARY PREAMBLES				
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the architect				
	DEMOLITIONS ETC				
	Excavation in earth not exceeding 2m deep and removing existing pipe				
1	110mm uPVC storm water pipe in trenches	m	54		
	STORMWATER DRAINAGE				
	Class 100D concrete stormwater pipes laid in class A bedding including excavations, backfilling etc				
2	450mm Pipes laid in trenches 1-2m deep	m	38		
	The following in stormwater catchpits, junction boxes and inlet manholes				
3	Excavation not exceeding 2m deep	m3	12		
4	Unreinforced concrete in bottoms	m3	1		
5	Unreinforced concrete benching in bottom of 750 x 750mm chamber, dished down to channels and finished smooth with plaster	No	4		
	Carried to Collection			R	

6	1900 x 1000 x 150mm Thick in-situ concrete cover slab with 620 x 816mm rebated opening for cover and frame and finished smooth on exposed surfaces with plaster including necessary formwork and reinforcement	No	4		
7	8mm Diameter mild steel reinforcement bars in concrete bottoms	t	0.1		
8	One brick wall	m2	27		
9	Plaster on brick walls	m2	27		
10	620 x 816mm x 20kg Cast iron dished grating and frame welded to 100 x 50 x 6.3 hollow section	No	4		
	Carried to Collection			R	

Section No. 3
Bill No. 4
Stormwater
Thohoyandou High Court: Repairs and Renovations
WCS 048609

Section No. 3

Bill No. 4

Stormwater

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	119		
	120		

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SECTION SUMMARY - SECTION 3 : CIVIL WORKS

Bill No		Page No	Amount
1	External Works	111	
2	Roadwork and Paving	115	
3	Water Reticulation	118	
4	Stormwater	121	

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Section No. 3

Thohoyandou High Court: Repairs and Renovations
WCS 048609

Item No			Quantity	Rate	Amount
	SECTION NO. 4: ELECTRICAL WORKS				
	BILL NO. 1				
	POWER RETICULATION (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	NOTE: Tenderers are advised to study the specification before pricing the bill.				
	Low Voltage Cables 600/1000V grade PVC/PVC/SWA/PVC stranded copper conductor cable (terminations and earth conductors elsewhere measured) Cable laid in trenching (excavations elsewhere measured)				
1	120mm² x 4-core	m	80		
2	70mm² x 4-core	m	36		
3	50mm² x 4-core	m	140		
4	35mm² x 4-core	m	150		
5	25mm² x 4-core	m	220		
6	16mm² x 4-core	m	136		
7	10mm² x 4-core	m	80		
8	6mm² x 4-core	m	40		
	Cable Terminations complete including glands, shrouds, lugs, connections and commissioning				
9	120mm² x 4-core	No	4		
	Carried to Collection			R	

10	70mm² x 4-core	No	4		
11	50mm² x 4-core	No	6		
12	35mm² x 4-core	No	4		
13	25mm² x 4-core	No	12		
14	16mm² x 4-core	No	8		
15	10mm² x 4-core	No	8		
16	6mm² x 4-core	No	4		
	Bare Stranded Copper Earth Wire strapped to Cables (terminations elsewhere measured)				
17	70mm²	m	30		
18	50mm²	m	36		
19	35mm²	m	140		
20	25mm²	m	150		
21	16mm²	m	220		
22	10mm²	m	136		
23	6mm²	m	80		
24	4mm²	m	40		
	Bare Stranded Copper Earth Wire Terminations complete including drilling, bolting, lugs, connections and commissioning				
25	70mm²	No	4		
26	50mm²	No	4		
27	35mm²	No	6		
28	25mm²	No	4		
29	16mm²	No	12		
	Carried to Collection			R	

30	10mm²	No	8		
31	6mm²	No	8		
32	4mm²	No	4		
	Excavations **All excavations, back filling and compaction must be done manually using local labour** **Excavate for cable and sleeve trench including temporary support of sides, keeping excavations dry, backfilling and compacting to the Engineer's specification**				
33	Pickable Soil	m3	170		
34	For Soft Rock	m3	50		
35	For Hard Rock	m3	15		
36	Bedding under and filling around cables comprising sifted sand	m3	100		
	CABLE MARKERS				
37	PVC warning marking tape	m	600		
38	Concrete route markers	No	4		
	MANHOLES				
39	600 x 600 x 600 mm	No	6		
	SLEEVES				
40	100mm diameter	m	60		
41	75mm diameter	m	1		
42	50mm diameter	m	20		
43	32mm diameter Galvanized pipe for riser on outside of buildings into the the ceiling void, including bends and saddles	m	40		
	Carried to Collection			R	

44	127x76mm Wiring Duct complete with Snap - in cover, wiring duct to be build into existing walls or suspended from roof trusses	m	300		
45	114mm Medium Duty Cable Tray complete, to be secured on to existing walls or suspended from roof trusses	m	320		
	General Items				
46	Supply and Installation of 185kVA Generator complete with Sound proof canopy, AMF panel, reinforced concrete plinth to Engineers approval - Refer to detail specification for full specification requirements to DPW standards		Item		
47	Supply and Installation of 165kVA Generator complete with Sound proof canopy, AMF panel, reinforced concrete plinth to Engineers approval - Refer to detail specification for full specification requirements to DPW standards		Item		
48	Removal of Redundant trunking, ega tubing, wiring as instructed by the Engineer		Item		
	Carried to Collection			R	

Section No. 4

Bill No. 1

Reticulation

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	123		
	124		
	125		
	126		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4: ELECTRICAL WORKS				
	BILL NO. 2				
	DISTRIBUTION BOARDS (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	NOTE: Tenderers are advised to study the specification and the conditions of the site before pricing the bill.				
	New Distribution Board - DB-Main - A1				
1	Supply and install surface mounted emergency compartment distribution board as per line diagram complete with frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification. (Existing Distribution Board to be removed and replaced with new in same position to be used.) Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board Moulded Case Circuit Breakers				
2	10 Ampere S.P. 6 kA	No	10		
3	20 Ampere S.P. 6 kA	No	18		
4	25 Ampere S.P. 6 kA	No	13		
5	20 Ampere T.P. 6 kA	No	2		
6	50 Ampere T.P. 6 kA	No	3		
7	60 Ampere T.P. 6 kA	No	2		
	Carried to Collection			R	

8	100 Ampere T.P. 6 kA	No	1		
9	125 Ampere T.P. 6 kA	No	1		
10	Lightning Arrestor	No	8		
	Earth Leakage Units				
11	60 Ampere single phase 6 kA 30 mA	No	3		
	Moulded Case Isolators				
12	150 Ampere T.P	No	1		
13	250 Ampere T.P	No	1		
	Labels				
14	Danger sign and labels as specified		Item		
	New Distribution Board - DB - A2 (Cells)				
15	Supply and install flush mounted distribution board complete with doors, frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification and line diagram. (Existing Distribution Board to be removed and replaced with new in same position.) Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board				
	Moulded Case Circuit Breakers				
16	10 Ampere S.P. 6 kA	No	3		
17	20 Ampere S.P. 6 kA	No	4		
18	25 Ampere S.P. 6 kA	No	3		
19	30 Ampere D.P. 6 kA	No	1		
20	Lightning Arrestor	No	4		
	Carried to Collection			R	

	Earth Leakage Units				
21	60 Ampere single phase 6 kA 30 mA	No	1		
	Moulded Case Isolators				
22	50 Ampere T.P	No	2		
	Labels				
23	Danger sign and labels as specified		Item		
	New Distribution Board - DB - A3				
24	Supply and install surface mounted emergency compartment distribution board as per line diagram complete with frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification. (Existing Distribution Board to be removed and replaced with new in existing position.) Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board				
	Moulded Case Circuit Breakers				
25	10 Ampere S.P. 6 kA	No	20		
26	20 Ampere S.P. 6 kA	No	12		
27	25 Ampere S.P. 6 kA	No	7		
28	30 Ampere D.P. 6 kA	No	4		
29	60 Ampere T.P. 6 kA	No	4		
30	Lightning Arrestor	No	8		
	Earth Leakage Units				
31	60 Ampere single phase 6 kA 30 mA	No	3		
	Carried to Collection			R	

	Moulded Case Isolators				
32	125 Ampere T.P	No	1		
33	50 Ampere T.P	No	1		
	Labels				
34	Danger sign and labels as specified		Item		
	New Distribution Board - DB - A4 & A4B				
35	Supply and install flush mounted emergency distribution board as per line diagram complete with doors, frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification. (Existing Distribution Board to be removed and replaced with new in existing position.) Material and labour excluding the items listed hereunder	No	2		
	Equipment provided in Distribution Board				
	Moulded Case Circuit Breakers				
36	10 Ampere S.P. 6 kA	No	12		
37	20 Ampere S.P. 6 kA	No	8		
38	25 Ampere S.P. 6 kA	No	12		
39	25 Ampere T.P. 6 kA	No	12		
40	60 Ampere T.P. 6 kA	No	3		
41	Lightning Arrestor	No	8		
	Earth Leakage Units				
42	60 Ampere single phase 6 kA 30 mA	No	1		
	Carried to Collection			R	

	Moulded Case Isolators				
43	80 Ampere T.P	No	2		
44	50 Ampere T.P	No	2		
	Labels				
45	Danger sign and labels as specified		Item		
	New Distribution Board - DB - A5				
46	Supply and install surface mounted emergency compartment distribution board as per line diagram complete with frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification. (Existing Distribution Board to be removed and replaced with new in existing position.) Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board				
	Moulded Case Circuit Breakers				
47	10 Ampere S.P. 6 kA	No	4		
48	20 Ampere S.P. 6 kA	No	4		
49	25 Ampere S.P. 6 kA	No	6		
50	50 Ampere T.P. 6 kA	No	3		
51	80 Ampere T.P. 6 kA	No	3		
52	100 Ampere T.P. 6 kA	No	3		
53	Lightning Arrestor	No	8		
	Earth Leakage Units				
54	60 Ampere single phase 6 kA 30 mA	No	1		
	Carried to Collection			R	

	Moulded Case Isolators				
55	200 Ampere T.P	No	1		
56	60 Ampere T.P	No	1		
	Labels				
57	Danger sign and labels as specified		Item		
	New Distribution Board - DB - A6				
58	Supply and install flush mounted distribution board complete with doors, frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification. (Existing Distribution Board to be removed and replaced with new in same position.) Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board				
59	10 Ampere S.P. 6 kA	No	4		
	Moulded Case Circuit Breakers				
60	20 Ampere S.P. 6 kA	No	6		
61	25 Ampere S.P. 6 kA	No	2		
62	Lightning Arrestor	No	8		
	Earth Leakage Units				
63	60 Ampere single phase 6 kA 30 mA	No	1		
	Moulded Case Isolators				
64	100 Ampere T.P	No	2		
	Labels				
65	Danger sign and labels as specified		Item		
	Carried to Collection			R	

	New Distribution Board - DB - A7				
66	Supply and install surface mounted emergency compartment distribution board as per line diagram complete with frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification. (Existing Distribution Board to be removed and replaced with new in existing position.) Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board				
	Moulded Case Circuit Breakers				
67	10 Ampere S.P. 6 kA	No	8		
68	20 Ampere S.P. 6 kA	No	4		
69	25 Ampere S.P. 6 kA	No	6		
70	5 Ampere S.P. 6 kA	No	1		
71	25 Ampere T.P. 6 kA	No	4		
72	60 Ampere T.P. 6 kA	No	4		
73	Lightning Arrestor	No	4		
	Earth Leakage Units				
74	60 Ampere single phase 6 kA 30 mA	No	2		
	Moulded Case Isolators				
75	100 Ampere T.P	No	2		
	Labels				
76	Danger sign and labels as specified		Item		
	Carried to Collection			R	

	New Distribution Board - DB - A8				
77	**Supply and install flush mounted distribution board complete with doors, frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification. (Existing Distribution Board to be removed and replaced with new in existing position).** Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board				
	Moulded Case Circuit Breakers				
78	10 Ampere S.P. 6 kA	No	4		
79	20 Ampere S.P. 6 kA	No	12		
80	25 Ampere S.P. 6 kA	No	10		
81	40 Ampere D.P. 6 kA	No	1		
82	5 Ampere S.P. 6 kA	No	1		
83	30 Ampere D.P. 6 kA	No	2		
84	60 Ampere T.P. 6 kA	No	4		
85	50 Ampere T.P. 6 kA	No	4		
86	Lightning Arrestor	No	4		
	Earth Leakage Units				
87	60 Ampere single phase 6 kA 30 mA	No	2		
	Moulded Case Isolators				
88	250 Ampere T.P	No	1		
	Labels				
89	Danger sign and labels as specified		Item		
	Carried to Collection			R	

	New Distribution Board - DB - A9 (Cells)				
90	Supply and install flush mounted distribution board complete with doors, frames, sub-frames, chassis, fixtures, fittings, terminations, busbars and wiring with spare space as per specification and line diagram. (Existing Distribution Board to be removed and replaced with new in same position.) Material and labour excluding the items listed hereunder	No	1		
	Equipment provided in Distribution Board				
	Moulded Case Circuit Breakers				
91	10 Ampere S.P. 6 kA	No	3		
92	20 Ampere S.P. 6 kA	No	4		
93	25 Ampere S.P. 6 kA	No	3		
94	30 Ampere D.P. 6 kA	No	1		
95	Lightning Arrestor	No	4		
	Earth Leakage Units				
96	60 Ampere single phase 6 kA 30 mA	No	1		
	Moulded Case Isolators				
97	50 Ampere T.P	No	2		
	Labels				
98	Danger sign and labels as specified		Item		
	Carried to Collection			R	

Section No. 4

Bill No. 2

Distribution Boards

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	128		
	129		
	130		
	131		
	132		
	133		
	134		
	135		
	136		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4: ELECTRICAL WORKS				
	BILL NO. 3				
	ELECTRICAL INFRASTRUCTURE (LI)				
	Electrical Infrastructure: Ground Floor				
	Conduit and accessories as specified in Part 2				
	Conduit placed in position for casting into concrete or screed, for building or chased into concrete or brickwork and for surface mounted in ceiling void including bending, threading, jointing, short lengths, draw boxes, couplings, bends, tees and saddles.				
1	20mm	m	1,750		
2	25mm	m	800		
3	20mm - Galvanized Conduit	m	300		
4	P8000 - Wiring Trunking suspended from roof trusses as per manufactures requirements c/w PVC cover suspension rods and hanger clips	m	365		
5	Round conduit box as specified in Part 2 placed in position for casting into concrete, building or chased into brickwork or surface mounted including locknuts and bushes 60mm deep	No	156		
6	Wall boxes as specified in Part 2 placed in position for casting into concrete, building or chased into brickwork including locknuts and bushes. Where cavity walls or face brick walls are encountered tenderers must allow to install deep back to back (one end closed) wall boxes. 100 x 50mm	No	28		
7	100 x 100mm	No	54		
	Conductors				
	Carried to Collection			R	

	600/1000V grade PVC insulated stranded copper conductors drawn into conduit				
8	1,5mm²	m	1		
9	2,5mm²	m	3,000		
10	4,0mm²	m	6,000		
	Bare stranded copper earth conductors drawn into conduits				
11	2,5mm²	m	3,000		
	Appliances				
	Complete with cover plate fixed in flush boxes, provision to be made for the removal of the existing redundant material and to installed the new outlets as measured below (boxes elsewhere measured)				
	Socket Outlets				
12	16 Ampere round 3-pin 250V grade Switched socket outlet	No	36		
13	16 Ampere dedicated 3-pin 250V grade socket outlet on power skirting complete with cover plate	No	48		
14	16 Ampere 3-pin 250V grade socket outlet on power skirting complete with cover plate	No	92		
15	RJ11 - Telephone outlet points on power skirting complete with cover plate	No	36		
16	RJ45 - Data outlet points on power skirting complete with cover plate	No	36		
17	16 Ampere Weatherproof 3-pin 250V grade single socket complete with cover plate	No	6		
18	6A Unswitched round Socket (3pin type) with round conduit box mounted on P8000 Trunkings	No	136		
	Carried to Collection			R	

	Power skirting				
19	Supply and installation of new 2 - compartment Steel Power skirting, including lids. End caps, elbows. T-Pieces, Bends etc.	m	178		
20	Removal of Existing power skirting complete with all redundant material including surface mounted socket outlets and trunkings as per Engineers instruction	m	145		
	Light Switches				
21	16 Ampere 250V grade single lever one way (100x50mm or 100x100mm), complete with cover and removal of redundant light switch	No	40		
22	16 Ampere 250V grade single lever two way (100x50mm or 100x100mm), complete with cover and removal of redundant light switch	No	26		
23	16 Ampere 250V grade two lever one way (100x50mm or 100x100mm), complete with cover and removal of redundant light switch	No	8		
24	16 Ampere photo cell in an empty luminaire	No	3		
	Isolator				
25	30 Ampere double pole isolator for geyser/ Air Conditioner complete with weatherproof outlet box and cover plate (Isolator draw boxes to be chased into the wall as indicated, 20mm conduit to be used from power skirting or P8000 to draw box)	No	28		
26	60 Ampere double pole isolator for Stove installation complete with outlet box and cover plate	No	6		
	Luminaires				
	Carried to Collection			R	

	Supplied and installed, mounted to round boxes in brickwork or ceiling including all fixings, brackets, supports, connectors, connections and lamps, see Part 2 (Provision to be made for the removal of all redundant luminaires.)				
27	Type A (1200mm x 600 mm) 60W LED Flat Panel Recessed, complete with control gear, 3 meter cord and 5A plug top	No	55		
28	Type AA (1200mm x 600 mm) 60W LED Flat Panel Recessed, complete with control gear, 3 meter cord, 5A plug top and 1hour battery backup	No	12		
29	Type B (600mm x 600 mm) 36W LED Flat Panel Recessed, complete with control gear, 3 meter cord and 5A plug top	No	188		
30	Type BB (600mm x 600 mm) 36W LED Flat Panel Recessed, complete with control gear, 3 meter cord, 5A plug top and 1hour battery backup	No	24		
31	Type C 2 x 28 W Open Channel Fluorescent Light Fitting complete with lamps and ECG.	No	28		
32	Type D Bulkhead - 20 W LED Light Fitting complete with lamp and ECG.	No	19		
33	Type DD Bulkhead - 10 W LED Light Fitting complete with lamp, ECG and 1 hour battery backup.	No	4		
34	Type F Prison Light - Tamper Proof 2 x 28 W Fluorescent Light fitting complete with lamps and ECG.	No	22		
	Carried to Collection			R	

35	Type G				
	Weatherproof - 2 x 28 W Fluorescent Light Fitting	No	16		
36	Type H				
	LED Exit Signs Complete with 1 hour battery backup	No	16		
37	Stand alone Alarm System Installations to be installed in Cash office and two court room offices. Installations to each room must include control unit, keypad and 4x PIR detectors.	No	3		
38	Earthing, bonding and lightning protection by specialist sub contractor, installation must included on site test, installation and certification.	Item			
39	Certificate of Compliance for Entire Electrical Installation.	No	12		
40	As built Drawings	No	1		
	Electrical Infrastructure: First Floor				
	Conduit and accessories as specified in Part 2				
	Conduit placed in position for casting into concrete or screed, for building or chased into concrete or brickwork and for surface mounted in ceiling void including bending, threading, jointing, short lengths, draw boxes, couplings, bends, tees and saddles.				
41	20mm	m	2,000		
42	25mm	m	1,000		
43	20mm - Galvanized Conduit	m	100		
44	P8000 - Wiring Trunking suspended from roof trusses as per manufactures requirements c/w PVC cover suspension rods and hanger clips	m	395		
	Carried to Collection			R	

45	Round conduit box as specified in Part 2 placed in position for casting into concrete, building or chased into brickwork or surface mounted including locknuts and bushes 60mm deep	No	138		
46	Wall boxes as specified in Part 2 placed in position for casting into concrete, building or chased into brickwork including locknuts and bushes. Where cavity walls or face brick walls are encountered tenderers must allow to install deep back to back (one end closed) wall boxes. 100 x 50mm	No	36		
47	100 x 100mm	No	48		
	Conductors				
	600/1000V grade PVC insulated stranded copper conductors drawn into conduit				
48	1,5mm²	m	1		
49	2,5mm²	m	4,000		
50	4,0mm²	m	7,000		
	Bare stranded copper earth conductors drawn into conduits				
51	2,5mm²	m	4,000		
	Appliances				
	Complete with cover plate fixed in flush boxes, provision to be made for the removal of the existing redundant material and to installed the new outlets as measured below (boxes elsewhere measured)				
	Socket Outlets				
52	16 Ampere round 3-pin 250V grade Switched socket outlet	No	28		
	Carried to Collection			R	

53	16 Ampere dedicated 3-pin 250V grade socket outlet on power skirting complete with cover plate	No	36		
54	16 Ampere 3-pin 250V grade socket outlet on power skirting complete with cover plate	No	54		
55	RJ11 - Telephone outlet points on power skirting complete with cover plate	No	34		
56	RJ45 - Data outlet points on power skirting complete with cover plate	No	34		
57	**16 Ampere Weatherproof 3-pin 250V grade single socket complete with cover plate**	No	1		
	Power skirting				
58	Supply and installation of new 2 - compartment Steel Power skirting, including lids. End caps, elbows. T-Pieces, Bends etc.	m	165		
59	Removal of Existing power skirting complete with all redundant material including surface mounted socket outlets and trunkings as per Engineers instruction.	m	130		
	Light Switches				
60	16 Ampere 250V grade single lever one way (100x50mm or 100x100mm), complete with cover and removal of redundant light switch	No	28		
61	16 Ampere 250V grade single lever two way (100x50mm or 100x100mm), complete with cover and removal of redundant light switch	No	12		
62	16 Ampere 250V grade two lever one way (100x50mm or 100x100mm), complete with cover and removal of redundant light switch	No	8		
63	16 Ampere photo cell in an empty luminaire	No	4		
	Carried to Collection			R	

	Isolator				
64	30 Ampere double pole isolator for geyser/ Air Conditioner complete with outlet box and cover plate (Isolator draw boxes to be chased into the wall as indicated, 20mm conduit to be used from power skirting to draw box)	No	44		
65	60 Ampere double pole isolator for Stove installation complete with outlet box and cover plate	No	18		
	Luminaires				
	Supplied and installed, mounted to round boxes in brickwork or ceiling including all fixings, brackets, supports, connectors, connections and lamps, see Part 2 (Provision to be made for the removal of all redundant luminaires.				
66	Type A (1200mm x 600 mm) 60W LED Flat Panel Recessed, complete with control gear, 3 meter cord and 5A plug top	No	65		
67	Type AA (1200mm x 600 mm) 60W LED Flat Panel Recessed, complete with control gear, 3 meter cord, 5A plug top and 1hour battery backup	No	8		
68	Type B (600mm x 600 mm) 36W LED Flat Panel Recessed, complete with control gear, 3 meter cord and 5A plug top	No	197		
69	Type BB (600mm x 600 mm) 36W LED Flat Panel Recessed, complete with control gear, 3 meter cord, 5A plug top and 1hour battery backup	No	28		
	Carried to Collection			R	

70	Type C 2 x 28 W Open Channel Fluorescent Light Fitting complete with lamps and ECG.	No	3		
71	Type D Bulkhead - 20 W LED Light Fitting complete with lamp and ECG.	No	22		
72	Type E Recessed LED Downlighters - 24W Light Fitting, complete with control gear, 3 meter cord and 5A plug top	No	54		
73	Type F Prison Light - Tamper Proof 2 x 28 W Fluorescent Light fitting complete with lamps and ECG.	No	1		
74	Type G Weatherproof - 2 x 28 W Fluorescent Light Fitting	No	8		
75	Type H Emergency Exit Signs Complete with 1 hour battery backup	No	14		
	Carried to Collection			R	

Section No. 4

Bill No. 3

Electrical Infrastructure

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	138		
	139		
	140		
	141		
	142		
	143		
	144		
	145		
	146		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4: ELECTRICAL WORKS				
	BILL NO. 4				
	FIRE DETECTION INSTALLATION - GENERAL ITEMS (LI)				
	This trade is Labour Intensive (LI)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	NOTE: Tenderers are advised to study the specification before pricing the bill.				
1	Setting out of works		Item		
2	Site Supervision by accredited person Quality assurance		Item		
3	Testing and commissioning of the entire installation and hand-over of operational system		Item		
4	Construction Drawings The tenderer shall allow for whatever cost he may consider necessary for the verification of floor layouts and preparation of construction drawings.	No	1		
5	"As-built" drawings for the complete installation	No	1		
	Manuals				
6	The tenderer shall allow for the necessary cost for the preparation and compiling of comprehensive maintenance and operations manuals for the installation. The Contractor shall issue three copies of the manuals to the engineer on completion of the project and one copy to be installed at master panel.		Item		
	Carried to Collection			R	

7	Provide Operational and Maintenance manuals for the complete installation also to be supplied in electronic format.		Item		
8	Design Certificate, installer certificate; Commissioning Certificate; Acceptance as per SANS10400 & SANS 10139	No	1		
9	Training of operators	No	1		
10	12-month maintenance & guarantee Maintenance and Defect Liability Period commitment inclusive of labour, travelling, subsistence, material, testing, etc.		Item		
	Liaison with other parties				
11	Local fire station, other Client's Subcontractors, etc		Item		
	FIRE DETECTION INSTALLATION - GROUND AND FIRST FLOOR				
	Control Panels				
	8 loop Addressable Fire panel, with network card and printer				
12	Supply	No	2		
13	Install	No	2		
14	Programming of panels	No	2		
	A3 size passive mimic panel depicting layout of each floor				
15	Supply	No	2		
16	Install	No	2		
	Logbook holder, logbook and instruction manual				
17	Supply	No	1		
	Carried to Collection			R	

	Detectors Complete with Bases				
	Optical - Below ceiling and surface mounted				
18	Supply	No	85		
19	Install	No	85		
	Optical - Inside Ceiling Void				
20	Supply	No	66		
21	Install	No	66		
	Rate of Rise Heat Detectors (69 ° & 85 °)				
22	Supply	No	12		
23	Install	No	12		
	Line isolators				
24	Supply	No	12		
25	Install	No	12		
	Remote indicator light emitting diode				
26	Supply	No	40		
27	Install	No	40		
	Labelling of detectors				
28	Supply	No	168		
29	Install	No	168		
	Combined Siren & Strobe				
30	Supply	No	26		
	Carried to Collection			R	

31	Install	No	26		
	Break glass unit with re-settable element				
32	Supply	No	12		
33	Install	No	12		
	Wiring and Wireways				
	20mm diameter SABS approved Galvanised conduit installed in roof space or surface mounted against walls, complete with all fixing accessories, couplings, bushes, 63mm diameter round boxes and male adapters				
34	Supply	m	3,000		
35	Install	m	3,000		
	P9000 white PVC trunking complete with covers				
36	Supply	m	200		
37	Install	m	200		
	20mm copex Sprague with couplings				
38	Supply	m	120		
39	Install	m	120		
	50x50 PVC trunking complete with covers				
40	Supply	m	60		
41	Install	m	60		
	2 core, 1.5mm2 SANS approved PH120 cabling				
42	Supply	m	400		
43	Install	m	400		
	Carried to Collection			R	

	2 Core 1mm² SANS app PH 30 cabling.				
44	Supply	m	3,000		
45	Install	m	3,000		
	PVC insulated wiring and terminations in power distribution board for power supply to the control panel				
46	Supply	m	40		
47	Install	m	40		
48	Configuration, testing and commissioning of the entire system as per SANS	Item			
	SECURITY INSTALLATION				
49	Supply and installation of new security gate motors. Installation to be done complete with 24Volt battery system, 6 meter steel tooth rail, emergency/safety beams and 10x remotes per gate motor." Installation to be done as per manufacturers specification."	No	3		
50	Supply and Installation of new security boom gates. Complete installation to be done by specialist subcontractor, installation must include 4.5 meter booms, boom motor with battery backup, new concrete base for mounting of housing, the installation of safety beams with underground loop detectors and 10x remotes to be provided per boom gate. Installation to be done as per manufactures specification.	No	2		
	Carried to Collection			R	

Section No. 4

Bill No. 4

Fire Detection

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	148		
	149		
	150		
	151		
	152		
Carried Forward to Summary of Section No. 4		R	

SECTION SUMMARY - SECTION 4 : ELECTRICAL WORKS

Bill No		Page No		Amount
1	Reticulation	127		
2	Distribution Boards	137		
3	Electrical Infrastructure	147		
4	Fire Detection	153		

Carried to Final Summary R

Section No. 4

Thohoyandou High Court: Repairs and Renovations
WCS 048609

Item No		Quantity	Rate	Amount
	SECTION NO. 5: MECHANICAL WORKS			
	BILL NO. 1			
	AIR CONDITIONING AND VENTILATION			
	This trade is Labour Intensive (LI)			
	PREAMBLES			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	NOTE: Tenderers are advised to study the specification before pricing the bill.			
	AIR CONDITIONING AND VENTILATION			
	General Information			
	Air Conditioners shall be as per relevant specifications, schedules, scope of works, drawings and technical information.			
	Air Conditioning equipment offered shall generally be of a good quality standard and shall be approved.			
	The engineer and/or Client will authorize the servicing or replacement as well as ordering equipment by way of signing off each pre-defined building area's audit and scope of works report.			
	Provisional Amounts Will Only Be Used With The Written Consent And Authorization Of The Engineer and/or Client.			
	NB: The Tenderer shall provide a rate for each item in this Schedule			
	The Tenderer shall indicate the manufacturer/supplier of the equipment that will form part of his tender offer. The Tenderer's offer shall be for the full quota of Air Conditioning Equipment as per this bill of quantities.			
	Carried to Collection		R	

	Split units manufacturer:				
	Air Handling Unit Manufacturer:				
	Air Conditioning Equipment				
	Offices:				
	Supply and install heat pump type air-conditioning units complete with R410A refrigerant charge, wall mounted remote controls, and all necessary ancillaries for full operation as per manufacturer's recommendation.				
1	Console unit with 3.5 kW Nominal Cooling Capacity. Supply	No	39		
2	Install	No	39		
3	Cassette unit with 5.0 kW Nominal Cooling Capacity. Supply	No	9		
4	Install	No	9		
5	Midwall unit with 3.5 kW Nominal Cooling Capacity. Supply	No	7		
6	Install	No	7		
7	Midwall unit with 5.0 kW Nominal Cooling Capacity. Supply	No	5		
8	Install	No	5		
9	Condensate drain pumps for midwall units Supply	No	20		
10	Install	No	20		
	Courtroom				
	Supply and install heat pump type replacement air handling units. Refrigerant R410A, with control system and all needed parts acording to the drawings and specifications.				
11	Air handling units with 17 kW Nominal Cooling Capacity and fresh air. Supply	No	2		
	Carried to Collection			R	

12	Install	No	2		
13	Air handling units with 12 kW Nominal Cooling Capacity and fresh air. Supply	No	1		
14	Install	No	1		
15	Allow for the supply and install for the modification of existing ducting to suit the replacement air handling units in the courtrooms	No	3		
16	Allow for cleaning and maintenance to remaining exting ducting and general upkeep maintenance for good indoor air quality	No	3		
17	Allow for taking out / extraction of existing unit and clearing out all redundant equipment in existing plantroom in order to accommodate new machinery	No	1		
	Pipe Work				
	Refrigerant copper pipes L-type and fittings with properly sized joints. Insulated as required for both liquid & gas pipes according to the equipment manufacturer recommendations and specifications. Install complete with trunking painted to match the colour of the wall on all indoor and outdoor units as per the following sizes:				
18	Supply Copper Piping Ø9.52 mm	m	80		
19	Install Copper Piping Ø9.52 mm	m	80		
20	Supply Copper Piping Ø15.9 mm	m	140		
21	Install Copper Piping Ø15.9 mm	m	140		
	PVC pipes for condensate water drainage as per the Drawings and Specifications. The rate shall include all fittings, hangers, brackets, conduits, boring, chizeling, flexible connections, and all other needed materials deemed necessary to complete the job.				
22	Supply PVC Piping Ø15.9 mm	m	80		
23	Install PVC Piping Ø15.9 mm	m	80		
24	Supply PVC Piping Ø26.0 mm	m	75		
	Carried to Collection			R	

25	Install PVC Piping Ø26.0 mm	m	75		
	Ventilation and Extraction Equipment				
	Supply and install inline duct fans for fresh air supply complete with installation brackets, rubber brackets and sound atenuaters rated at NC35 as indicated.				
26	Inline duct fan capable of supplying 700l/s of fresh air. Supply	No	2		
27	Install	No	2		
28	Inline duct fan capable of supplying 500l/s of fresh air. Supply	No	1		
29	Install	No	1		
30	Inline duct fan capable of supplying 150l/s of fresh air. Supply	No	3		
31	Install	No	3		
32	Inline duct fan capable of supplying 250l/s of fresh air. Supply	No	1		
33	Install	No	1		
34	Supply and install 200 l/s wall mounted stale air extraction fans complete with interlocking to lighting Supply sound attenuator	No	18		
35	Install sound attenuator	No	18		
36	NC35 Sound attenuators Supply sound attenuator	No	8		
37	Install sound attenuator	No	8		
	Supply and install insulated ductwork as shown on the drawings and as specified:				
38	Supply Ø90mm straight	m	3		
39	Install Ø90mm straight	m	3		
40	Supply Ø110mm straight	m	18		
	Carried to Collection			R	

41	Install Ø110mm straight	m	18		
42	Supply Ø120mm straight	m	21		
43	Install Ø120mm straight	m	21		
44	Supply Ø140mm straight	m	7		
45	Install Ø140mm straight	m	7		
46	Supply Ø150mm straight	m	11		
47	Install Ø150mm straight	m	11		
48	Supply Ø160mm straight	m	20		
49	Install Ø160mm straight	m	20		
50	Supply Ø190mm straight	m	19		
51	Install Ø190mm straight	m	19		
52	Supply Ø220mm straight	m	22		
53	Install Ø220mm straight	m	22		
54	Supply Ø230mm straight	m	4		
55	Install Ø230mm straight	m	4		
56	Supply 300x300 straight	m	10		
57	Install 300x300 straight	m	10		
58	Supply 350x240 straight	m	27		
59	Install 350x240 straight	m	27		
	Supply and install the correct duct connectors and reducers according to the specifications and drawings				
60	Supply Ø150 90° elbow	No	1		
61	Install Ø150 90° elbow	No	1		
62	Supply Ø190 reducer	No	3		
	Carried to Collection			R	

63	Install Ø190 reducer	No	3		
64	Supply Ø120 reducer	No	2		
65	Install Ø120 reducer	No	2		
66	Supply Ø160 90° elbow	No	1		
67	Install Ø160 90° elbow	No	1		
68	Supply Ø110 reducer	No	3		
69	Install Ø110 reducer	No	3		
70	Supply Ø140 reducer	No	2		
71	Install Ø140 reducer	No	2		
72	Supply Ø140 90° elbow	No	1		
73	Install Ø140 90° elbow	No	1		
74	Supply Ø110 90° elbow	No	4		
75	Install Ø110 90° elbow	No	4		
76	Supply Ø160 reducer	No	4		
77	Install Ø160 reducer	No	4		
78	Supply Ø220 Reducer	No	4		
79	Install Ø220 Reducer	No	4		

Carried to Collection R

Section No. 5

Bill No. 1

HVAC Installations

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	155		
	156		
	157		
	158		
	159		
	160		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount
	SECTION NO. 5: MECHANICAL WORKS			
	BILL NO. 2			
	FIRE PROTECTION			
	This trade is Labour Intensive (LI)			
	PREAMBLES			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	NOTE: Tenderers are advised to study the specification before pricing the bill.			
	General Information			
	Equipment shall be as per relevant specifications, schedules, scope of works, drawings and technical information.			
	Fire Protection equipment offered shall generally be of a good quality standard and shall be approved.			
	The engineer and/or Client will authorize the servicing or replacement as well as ordering equipment by way of signing off each pre-defined building area's audit and scope of works report.			
	Provisional Amounts Will Only Be Used With The Written Consent And Authorization Of The Engineer and/or Client.			
	NB: The Tenderer shall provide a rate for each item in this Schedule			
	The Tenderer shall indicate the manufacturer/supplier of the equipment that will form part of his tender offer. The Tenderer's offer shall be for the full quota of Fire Protection Equipment as per this bill of quantities.			
	Fire pump manufacturer:			
	Carried to Collection		R	

	Fire Protection Equipment				
	Supply and Install Fire Fighting Equipment as per the specifications and drawings provided				
1	Ø65 Instantaneous Fire Hydrant Supply	No	2		
2	Install	No	2		
3	30mm Fire Hose Reel Supply	No	12		
4	Install	No	12		
5	9.0kg DCP Fire Extinguisher Supply	No	20		
6	Install	No	20		
7	4.5kg DCP Fire Extinguisher Supply	No	4		
8	Install	No	4		
	Fire Protection Water				
9	Allow for modification / adaptation of intake and delivery pipework in plant room to accept fire pumping system connection flanges including any builders work required to create and close off openings			SUM	
	Carried to Collection			R	

10	Supply and install, Grundfos or other approved , modular fire pumping system complete with two Star/Delta starting 37kW electrical & air-cooled desiel driven pump sets each capable of achieving a duty point of 40l/s @ 5Bar configured in duty-standby, electrical driven jockey pump capable of maintaining system pressure between 5.5 and 5 Bar complete with base frames, suction and discharge manifolds, expansion joints, lockable isolation valves, inspectable non return valves, test bypass with readable flow meter, pressure switches, suction, discharge, pressure and vacuum gauges with 2x 24 liter pressure vessels fitted, control panels for each pump, micro alarm system with annunciation and sms alarm module, factory testing to EN12845, UNI11292 and 10779 standards including test certification, delivery of all equipment to site including installation, commissioning and handover as well as as-built drawings and operation manuals. Only EN12845 certified installers shall be allowed.			SUM	
11	Allow for construction of equipment plinth, to structural engineers specification, for fire pumping system including provision for mounting points as specified by fire pump manufacturer			SUM	
12	Allow for full commissioning and issuing of a test report for the pumps to verify the system operating point is as per building regulations			SUM	
13	Allow for intergration of the fire detection system to the fire pumps complete with the electric motor / diesel motor start-stop controls			SUM	
	Carried to Collection			R	

Section No. 5

Bill No. 2

Fire protection installation

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	162		
	163		
	164		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount
	SECTION NO. 5: MECHANICAL WORKS			
	BILL NO. 3			
	WET SERVICES			
	This trade is Labour Intensive (LI)			
	PREAMBLES			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	NOTE: Tenderers are advised to study the specification before pricing the bill.			
	General Information			
	Equipment shall be as per relevant specifications, schedules, scope of works, drawings and technical information.			
	Equipment offered shall generally be of a good quality standard and shall be approved.			
	The engineer and/or Client will authorize the servicing or replacement as well as ordering equipment by way of signing off each pre-defined building area's audit and scope of works report.			
	Provisional Amounts Will Only Be Used With The Written Consent And Authorization Of The Engineer and/or Client.			
	NB: The Tenderer shall provide a rate for each item in this Schedule			
	The Tenderer shall indicate the manufacturer/supplier of the equipment that will form part of his tender offer. The Tenderer's offer shall be for the full quota of Wet Services Equipment as per this bill of quantities.			
	Heat pump manufacturer:			
	Carried to Collection		R	

	Hydroboil unit manufacturer:				
	Wet Services Equipment				
	Decommission existing installations:				
1	Decommission and remove from site all hot water equipment currently installed.			SUM	
	Supply and install heat pumps:				
	Allow for the supply and installation of heat pumps for water heating to replace existing geyser systems. The heat pump installations shall be complete with 200 litre hot water storage, 5 kW heat pump, 4 kW back-up electric heating element, complete with necessary interconnecting insulated copper piping, and mounting brackets to allow for full operation as per manufacturer's recommendation:				
2	Supply 200 L heat pump installation	No	6		
3	Install 200 L heat pump installation	No	6		
	Supply and install hydroboils:				
	Allow for the supply and installation to full operation of instant water boiling hydroboil units for 24 hour operation, operating within 3°C of boiling point, energy effecient, fully automatic, steam free, concealed plumbing and electrical connections, twin chamber arrangement to store incoming cold water seperately from boiling water, in brushed stainless steel encasing:				
4	Supply 15 L heat pump installation	No	4		
5	Install 15 L heat pump installation	No	4		
	Carried to Collection			R	

Section No. 5

Bill No. 3

Wet services installations

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	166		
	167		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount
	SECTION NO. 5: MECHANICAL WORKS			
	BILL NO. 4			
	LIFT INSTALLATIONS			
	This trade is Labour Intensive (LI)			
	PREAMBLES			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	NOTE: Tenderers are advised to study the specification before pricing the bill.			
	General Information			
	Equipment shall be as per relevant specifications, schedules, scope of works, drawings and technical information.			
	Equipment offered shall generally be of a good quality standard and shall be approved.			
	The engineer and/or Client will authorize the servicing or replacement as well as ordering equipment by way of signing off each pre-defined building area's audit and scope of works report.			
	Provisional Amounts Will Only Be Used With The Written Consent And Authorization Of The Engineer and/or Client.			
	NB: The Tenderer shall provide a rate for each item in this Schedule			
	Carried to Collection		R	

	The Tenderer shall indicate the manufacturer/supplier of the equipment that will form part of his tender offer. The Tenderer's offer shall be for the full quota of Lift installation equipment as per this bill of quantities. **Lift installation:** **Manufacturer / Supplier:** _____ _____ _____ _____ _____				
	Lift installations				
	Allow for the appointment of a Lift Machinery Inspector (LMI) registered with the Engineering Counsil of South Africa to carry out a thorough lift assessment of all system mechanisms				
	COMPREHENSIVE LIFT ASSESSMENTS				
1	Provide the sum of R 25 000,00 (Twenty Five Thousand Rand) for a comprehensive assessment of the lift by a lift machinery inspector (LMI) registered with the Engineering Council of South Africa (ECSA), including the submission of the inspection report for approval by the engineer	Item			25,000.00
2	Add for profit upon above, if required	Item			
3	Attend upon the firm executing the installation	Item			
	REPAIRS TO AN EXISTING LIFT				
4	Provide the sum of R 300 000,00 (Three Hundred Thousand Rand) for the repairs and upgrade/modernization of the lift by a Lift Machinery Entity (LME) registered with the department of labour based on the report of the of the Lift Machinery Inspector (LMI)	Item			300,000.00
5	Add for profit upon above, if required	Item			
6	Attend upon the firm executing the installation	Item			
	Carried to Collection			R	

	COMMISSIONING OF THE UPGRADED LIFT			
7	Provide the sum of R 60 000,00 (Sixty Thousand Rand) for the commissioning of the upgraded/modernized lift to full operation as per the requirements of the Occupational Health and Safety Act (Driven Machinery Regulations) complete with statutory tests	Item		60,000.00
8	Add for profit upon above, if required	Item		
9	Attend upon the firm executing the installation	Item		
	INSPECTION OF THE LIFT			
10	Provide the sum of R 75 000,00 (Seventy Five Thousand Rand) for the inspection of the upgraded/modernized lift in the presence of the department of labour inspector and contractor lift inspector, issuing of statutory registration certificates and statutory maintenance books to record ongoing maintenance on the lift	Item		75,000.00
11	Add for profit upon above, if required	Item		
12	Attend upon the firm executing the installation	Item		
	INTEGRATION OF THE LIFT TO THE FIRE DETECTION SYSTEM			
13	Provide the sum of R 20 000,00 (Twenty Thousand Rand) for the integration of the upgraded/modernized lift onto the fire detection system to guard against the use of the lift in case of fire and for the lift to "home" at ground level in case of a fire emergency	Item		20,000.00
14	Add for profit upon above, if required	Item		
15	Attend upon the firm executing the installation	Item		
	Carried to Collection		R	

Section No. 5

Bill No. 4

Lift installation

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	169		
	170		
	171		
Carried Forward to Summary of Section No. 5		R	

SECTION SUMMARY - SECTION 5 : MECHANICAL WORKS

Bill No		Page No	Amount
1	HVAC Installations	161	
2	Fire protection installation	165	
3	Wet services installations	168	
4	Lift installation	172	

Carried to Final Summary R

Section No. 5
Thohoyandou High Court: Repairs and Renovations
WCS 048609

FINAL SUMMARY

Section No		Page No		Amount
1	SECTION 1 : PRELIMINARIES AND GENERAL	31		
2	SECTION 2 : BUILDING WORKS	103		
3	SECTION 3 : CIVIL WORKS	122		
4	SECTION 4 : ELECTRICAL WORKS	154		
5	SECTION 5 : MECHANICAL WORKS	173		
	SUB TOTAL		R	
	ADD: Extended Public Works Programme (EPWP) - Contract Participation Goal Targets and CIDB B.U.I.L.D Programme (and Refer to Preliminaries and General Bill, Item no. C12.0 and Annexure A & B)	Item		3,104,098.00
	TOTAL EXCLUDING VAT		R	
	VALUE ADDED TAX @ 15%		R	
	TOTAL INCLUDING VAT		R	
	Carried to Form of Offer and Acceptance		R	

Thohoyandou High Court: Repairs and Renovations
WCS 048609

Extender Public Works Programme (EPWP)

National Youth Service (NYS)

Bills of Quantities

ANNEXURE A

PROJECT NAME: THOHOYANDOU HIGH COURT: REPAIR AND RENOVATIONS

EXPANDED PUBLIC WORKS PROGRAMME

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
200	**SECTION NO**				
	BILL NO				
	INFRASTRUCTURE PROJECTS				
	PREAMBLES				
	Tenderers are advised to study the Additional Specification SL: Employment and Training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Projects: National Youth Service, as bound elsewhere in the Bills of Quantities, and then price this Bill accordingly				
	Note: The contractor shall test the market by submitting the 3 quortes before appointment of the training provider				
200.01	**TRAINING OF YOUTH WORKERS (TARGET: 22 YOUTH WORKERS)**				
	Orientation, Life skills development and technical training:				
200.01.01	Orientation and Life skills development training for youth workers for an average of 10 days per youth worker (ref. SL 11.01.01)	PC		Sum	50 000.00
200.01.02	Technical skills training for youth workers for an average of 80 days per youth worker (ref. SL 11.01.02)	PC		Sum	345 000.00
200.01.03	Provide Medical Surveillance	PC		Sum	11 500.00
	The above items are only applicable if NYDA do not fund the specific training.				
200.01.03	Payment Reduction due to not meeting the training target (ref. SL 11.03)	Youth-worker	-2 500		
200.01.04	Profit and attendance on condition that services and cost has been incurred (on items 200.01.01 and 200.01.02 above)	%	R 406 500	10%	40 650.00
200.02	**TRAVELING DURING ON-SITE TRAINING:**				
200.02.01	**Practical Work based Experiential training for 10 days each (ref. SL 11.02.01)**				
	.01 Traveling (based on R30 per day return trip/youth worker)	PC		Sum	42 500.00
	.02 Profit and attendance on condition that services and cost has been incurred (on item .01 above)	%	R 42 500	10%	4250.00
200.04	**EMPLOYMENT OF YOUTH WORKERS**				
200.04.01	Employment of youth workers	PC		Sum	388 500.00
	The unit of measurement shall be the number of youth workers at the labour rate of R 102.00 per day on Training as per EPWP Ministerial Determination multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of youth workers and for complying with the conditions of contract. The cost for the training shall be excluded from this item. This item is based on 9 months appointment for youth workers				
200.04.02	Profit and attendance on condition that services and cost has been incurred (ref. SL 11.04.02)	%	388 500.00	10%	38 850.00
	Carried forward			R	**921 250.00**

EXPANDED PUBLIC WORKS PROGRAMME

ITEM NO	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
	Brought forward			R	**921 250.00**
200.05	**PROVISION OF EPWP DESIGNED OVERALLS AND HARD HATS TO YOUTH WORKERS**				
200.05.01	Supply EPWP branded 2 x overalls, safety boots and 1 x EPWP branded hard hat to youth workers (ref. SL 11.05.01)	PC		Sum	36 000.00
200.05.02	Profit and attendance on condition that services and cost has been incurred (ref. SL	%	36 000	10%	3 600.00
200.06	**PROVISION OF BASIC TOOLS FOR YOUTH WORKERS**				
200.06.01	Provide all youth workers with prescribed tools for their respective trades. Specification for the mentioned tools to be provided by the Service Provider. These tools will become the property of the youth workers after the completion of the programme (ref. SL 11.06.01)	PC		Sum	30 000.00
200.06.02	Profit and attendance on condition that services and cost has been incurred (ref. SL 11.06.02)	%	30 000	10%	3 000.00
200.07	**APPOINTMENT OF YOUTH TRAINING COORDINATOR (TEAM LEADER/S)**				
200.07.01	Appointment of Youth Team Leader/s for the duration of the contract (ref. SL 11.07.01)	PC		Sum	45 600.00
200.08	**LIAISON WITH SERVICE PROVIDER** (ref. SL 11.08)	hours	100	10.00	1 000.00
200.09	**LOGISTICS FOR EXIT WORKSHOPS**				
200.09.01	Provide logistic items for exit workshop (Catering, Orange Golf T-Shirts, Venue Hire and Sound System).	PC	1	12 157	12 157.23
Carried to CPG Section				**R**	**1 052 607.23**

Extender Public Works Programme (EPWP)

Contract Participation Goal (CPG)

Bills of Quantities

ANNEXURE B

CPG Bill of Quantities

Item	CONTRACT PARTICIPATION GOALS (CPG) DESCRIPTION	Unit	Rate / %	Amount
	Note to tenderers: As CPGs may not provide any bidder a competitive advantage. Provisional amounts and fixed percentages for profit and attendance have been provided. Only the provisional amount will be adjusted once the awarded tender amount and/or the beneficiaries have been appointed, and the final values have been ascertained.			
1.0	**MINIMUM TARGETED LOCAL BUILDING MATERIAL MANUFACTURERS**			
1.1	Provision is made for the Minimum Targeted Local Building Material Manufacturers CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.2. Material to the value of **R1 130 895.00** *(Insert project specific amount)* should be purchased from local manuafacturers as defined in the CPG specifications in terms of locality, based on determination by PQS taking into account specific project variables.			
1.2	Allowance for monitoring and monthly reporting on material purchased from Local Building Material Manufacturers by main contractor and subcontractors.	%	5%	R 56 544.75
1.3	Allowance for profit, all inclusive of associated costs to the contractor for implementation.	%	5%	R 56 544.75
1.4	Allowance for attendance all inclusive of associated costs to the contractor for implementation.	%	5%	R 56 544.75
				R 169 634.25
2.0	**MINIMUM TARGETED LOCAL BUILDING MATERIAL SUPPLIERS**			
2.1	Provision is made for the Minimum Targeted Local Building Material Suppliers CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.3. Material to the value of **R1 139 895.00** *(Insert project specific amount)* should be purchased from local suppliers as defined in the CPG specifications in terms of locality, based on determination by PQS taking into account specific project variables.			
2.2	Allowance for monitoring and monthly reporting on material purchased from Local Building Material Suppliers by main contractor and subcontractors.	%	5%	R 56 544.75
2.3	Allowance for profit all inclusive of associated costs to the contractor for implementation.	%	5%	R 56 544.75
2.4	Allowance for attendance all inclusive of associated costs to the contractor for implementation.	%	5%	R 56 544.75
				R 169 634.25
3.0	**MINIMUM TARGETED LOCAL LABOUR SKILLS DEVELOPMENT**			
3.1	Provision is made for the Minimum Targeted Local Labour Skills Development CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.4. This allowance is for the cost for a suitably qualified and experienced training service provider appointed by the main contractor.			R 350 000.00
3.2	Allowance for monitoring and monthly reporting on training provided by main contractor and subcontractors.	%	5%	R 17 500.00
3.3	Allowance for profit all inclusive of associated costs to the contractor for implementation.	%	5%	R 17 500.00
3.4	Allowance for attendance all inclusive of associated costs to the contractor for implementation.	%	5%	R 17 500.00
				R 402 500.00
4.0	**MINIMUM TARGETED ENTERPRISE DEVELOPMENT**			
4.1	Provision is made for (insert percentage) % compulsory subcontracting to SMMEs in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.1. The percentage is the contractors allowance for the P&G's for the (insert percentage)% sub-contractors (SMME's).The PQS is to define the actual P&G items applicable to the SMME's e.g. scaffolding , PPE etc.	PS	7.50%	R 510 227.27
4.2	A provisional amount has been allowed for in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.5. The provisional amount allowed is for the appointment of training coordinator, mentor, training service providers and training of the beneficiary enterprises including monitoring and monthly reporting.	PS		R 400 000.00
	Subtotal			R 910 227.27
4.3	Allowance for monitoring and monthly reporting on SMME subcontracting by main contractor and subcontractors including training provided.	%	1%	R 9 102.27
4.4	Allowance for profit all inclusive of associated costs to the contractor for implementation.	%	1%	R 9 102.27
4.5	Allowance for attendance all inclusive of associated costs to the contractor for implementation.	%	3%	R 27 306.82
				R 955 738.63

5.0	**MINIMUM TARGETED SKILLS DEVELOPMENT GOALS**				
5.1	A provisional amount has been allowed for the Minimum Targeted Development CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.6. • stipends payable to the beneficiaries • appointment of training coordinator • appointment of mentor (where applicable) • appointment of training service providers • other additional costs as per table 3 of the Standard	PS		R	125 090.00
5.2	Allowance for monitoring and monthly reporting on skills development by main contractor and subcontractors.	%	5%	R	6 254.50
5.3	Allowance for profit all inclusive of associated costs to the contractor for implementation.	%	5%	R	6 254.50
5.4	Allowance for attendance all inclusive of associated costs to the contractor for implementation.	%	5%	R	6 254.50
				R	**143 853.50**
6.0	**NATIONAL YOUTH SERVICE TRAINING AND DEVELOPMENT PROGRAMME**				
	The programme shall be implemented in terms of the Implementation of the National Youth Service Programme under the Expanded Public Works (EPWP) and shall be priced in the CPG section of the Bills of Quantities. Provision has been made within the Contract Participation Goal section in the Bill of Quantities for the National Youth Service Training and Development Programme CPG in the execution of this project as described in PG-01.1 (EC) / PG-01.2 (EC) SCOPE OF WORKS C3.7.7. The contractor to price all applicable elements of this BOQ section.				
6.1	Refer to separate EPWP-NYS BOQ			R	1 052 607.23
6.2	Allowance for monthly reporting based on the implementation of the EPWP-NYS as per the specifications and EPWP-NYS BOQ all inclusive of associated costs to the contractor.	%	5%	R	52 630.36
				R	**1 105 237.59**
7.0	**LABOUR INTENSIVE PARTICIPATION GOAL**				
7.1	Labour Intensive Participation Goal - Labour in tensive works to the value of **R2,250,000.00** (Insert project specific amount) should be purchased from local suppliers as defined in the CPG specifications in terms of locality, based on determination by PQS taking into account specific project variables. Allowance for monitoring and monthly reporting on Works executed by means of Labour Intensive methods by main contractor and subcontractors.				
7.2	Allowance for monitoring and monthly reporting on Works executed by means of Labour Intensive methods by main contractor and subcontractors.		2%	R	45 000.00
7.3	Allowance for profit all inclusive of associated costs to the contractor for implementation.	%	5%	R	112 500.00
				R	**157 500.00**
	Sub-total of CPG Section			**R**	**3 104 098.22**

T2.2 Returnable Documents required for tender evaluation purposes

public works & infrastructure
Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

PA-11: 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 interest (1) 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

(1) 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 consortium2 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.

3.5 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.

3.6 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.

2 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.

3.7 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

This form has been aligned with SBD4

PA- 29: CERTIFICATION OF INDEPENDENT BID DETERMINATION

Project title:	Thohoyandou High Court: Repairs and Renovations		
Bid no:	PLK23/09	**Reference no:**	6054/0070

INTRODUCTION

1. This PA-29 [Certificate of Independent Bid Determination] must form part of all bids[1] invited.

2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *per se* prohibition meaning that it cannot be justified under any grounds.

3. Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:

    a. disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.

    b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.

4. This form (PA-29) serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5. In order to give effect to the above, the attached Certificate of Bid Determination (PA-29) must be completed and submitted with the bid:

---

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

[2] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _____ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate.

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect.

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder.

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder.

5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

    (a) has been requested to submit a bid in response to this bid invitation;
    (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
    (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.

6. 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 consortium[3] will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   (a) prices;
   (b) geographical area where product or service 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 bid;
   (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
   (f) bidding with the intention not to win the bid.

8. 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 products or services to which this bid invitation relates.

9. 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.

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.

Name of Bidder	Signature	Date	Position

[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.

PA-15.1: RESOLUTION OF BOARD OF DIRECTORS

RESOLUTION of a meeting of the Board of *Directors / Members / Partners of:

_____

(*Legally correct full name and registration number, if applicable, of the Enterprise)*

Held at _____ (*place)*

on _____ *(date)*

RESOLVED that:

1. The Enterprise submits a Bid / Tender to the Department of Public Works in respect of the following project:

   _____

   (*Project description as per Bid / Tender Document)*

   Bid / Tender Number: _____ *(Bid / Tender Number as per Bid / Tender Document)*

2. *Mr/Mrs/Ms: _____

   in *his/her Capacity as: _____ *(Position in the Enterprise)*

   and who will sign as follows: _____

   be, and is hereby, authorised to sign the Bid / Tender, and any and all other documents and/or correspondence in connection with and relating to the Bid / Tender, as well as to sign any Contract, and any and all documentation, resulting from the award of the Bid / Tender to the Enterprise mentioned above.

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
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9			
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11			
12			
13			
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15			
16			

17			
18			
19			
20			

The bidding enterprise hereby absolves the Department of Public Works from any liability whatsoever that may arise as a result of this document being signed.

Note:

1. ** Delete which is not applicable.*
2. ***NB:** This resolution must, where possible, be signed by <u>all</u> the Directors / Members / Partners of the Bidding Enterprise.*
3. *In the event that paragraph 2 cannot be complied with, the resolution must be signed by Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (attach proof of shareholding / ownership hereto).*
4. *Directors / Members / Partners of the Bidding Enterprise may alternatively appoint a person to sign this document on behalf of the Bidding Enterprise, which person must be so authorized by way of a duly completed power of attorney, signed by the Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (proof of shareholding / ownership and power of attorney are to be attached hereto).*
5. *Should the number of Directors / Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

ENTERPRISE STAMP

PA-15.2: RESOLUTION OF BOARD OF DIRECTORS TO ENTER INTO CONSORTIA OR JOINT VENTURES

RESOLUTION of a meeting of the Board of *Directors / Members / Partners of:

_____

_____

(*Legally correct full name and registration number, if applicable, of the Enterprise)*

Held at _____ (*place)*

on _____ *(date)*

RESOLVED that:

1. The Enterprise submits a Bid /Tender, in consortium/Joint Venture with the following Enterprises:

   _____

   _____

   (List all the legally correct full names and registration numbers, if applicable, of the Enterprises forming the Consortium/Joint Venture)

   to the Department of Public Works in respect of the following project:

   _____

   _____

   (*Project description as per Bid /Tender Document)*

   Bid / Tender Number: _____ (*Bid / Tender Number as per Bid / Tender Document)*

2. *Mr/Mrs/Ms: _____

   in *his/her Capacity as: _____ *(Position in the Enterprise)*

   and who will sign as follows: _____

   be, and is hereby, authorised to sign a consortium/joint venture agreement with the parties listed under item 1 above, and any and all other documents and/or correspondence in connection with and relating to the consortium/joint venture, in respect of the project described under item 1 above.

3. The Enterprise accepts joint and several liability with the parties listed under item 1 above for the due fulfilment of the obligations of the joint venture deriving from, and in any way connected with, the Contract to be entered into with the Department in respect of the project described under item 1 above.

4. The Enterprise chooses as its *domicilium citandi et executandi* for all purposes arising from this joint venture agreement and the Contract with the Department in respect of the project under item 1 above:

   Physical address: _____

   _____

   _____

   _____ (code)

PA-15.2: Resolution of Board of Directors to enter into Consortia or Joint Ventures

Postal Address: _____

_____

_____

_____ (code)

Telephone number: _____

Fax number: _____

	Name	Capacity	Signature
1			
2			
3			
4			
5			
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10			
11			
12			
13			
14			
15			

The bidding enterprise hereby absolves the Department of Public Works from any liability whatsoever that may arise as a result of this document being signed

Note:

1. ** Delete which is not applicable.*
2. ***NB:** This resolution must, where possible, be signed by all the Directors / Members / Partners of the Bidding Enterprise.*
3. *In the event that paragraph 2 cannot be complied with, the resolution must be signed by Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (attach proof of shareholding / ownership hereto).*
4. *Directors / Members / Partners of the Bidding Enterprise may alternatively appoint a person to sign this document on behalf of the Bidding Enterprise, which person must be so authorized by way of a duly completed power of attorney, signed by the Directors / Members / Partners holding a majority of the shares / ownership of the Bidding Enterprise (proof of shareholding / ownership and power of attorney are to be attached hereto).*
5. *Should the number of Directors / Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

ENTERPRISE STAMP

Any reference to words "Bid" or Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".

PA-15.3: SPECIAL RESOLUTION OF CONSORTIA OR JOINT VENTURES

RESOLUTION of a meeting of the duly authorised representatives of the following legal entities who have entered into a consortium/joint venture to jointly bid for the project mentioned below: (*legally correct full names and registration numbers, if applicable, of the Enterprises forming a Consortium/Joint Venture)*

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

6. _____

_____

7. _____

_____

8. _____

_____

Held at _____ (*place)*

on _____ *(date)*

RESOLVED that:

RESOLVED that:

A. The above-mentioned Enterprises submit a Bid in Consortium/Joint Venture to the Department of Public Works in respect of the following project:

_____

_____

(*Project description as per Bid /Tender Document)*

Bid / Tender Number: _____ (*Bid / Tender Number as per Bid /Tender Document)*

B. *Mr/Mrs/Ms: _____

in *his/her Capacity as: _____ *(Position in the Enterprise)*

and who will sign as follows: _____

be, and is hereby, authorised to sign the Bid, and any and all other documents and/or correspondence in connection with and relating to the Bid, as well as to sign any Contract, and any and all documentation, resulting from the award of the Bid to the Enterprises in Consortium/Joint Venture mentioned above.

C. The Enterprises constituting the Consortium/Joint Venture, notwithstanding its composition, shall conduct all business under the name and style of:

_____

D. The Enterprises to the Consortium/Joint Venture accept joint and several liability for the due fulfilment of the obligations of the Consortium/Joint Venture deriving from, and in any way connected with, the Contract entered into with the Department in respect of the project described under item A above.

E. Any of the Enterprises to the Consortium/Joint Venture intending to terminate the consortium/joint venture agreement, for whatever reason, shall give the Department 30 days written notice of such intention. Notwithstanding such decision to terminate, the Enterprises shall remain jointly and severally liable to the Department for the due fulfilment of the obligations of the Consortium/Joint Venture as mentioned under item D above.

F. No Enterprise to the Consortium/Joint Venture shall, without the prior written consent of the other Enterprises to the Consortium/Joint Venture and of the Department, cede any of its rights or assign any of its obligations under the consortium/joint venture agreement in relation to the Contract with the Department referred to herein.

G. The Enterprises choose as the *domicilium citandi et executandi* of the Consortium/Joint Venture for all purposes arising from the consortium/joint venture agreement and the Contract with the Department in respect of the project under item A above:

Physical address: _____

_____

_____

_____ (Postal code)_____

Postal Address: _____

_____

_____

_____(Postal code)_____

Telephone number: _____

Fax number: _____

PA-15.3: Special Resolution of Consortia or Joint Ventures

	Name	Capacity	Signature
1			
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12			
13			
14			
15			

The bidding enterprise hereby absolves the Department of Public Works & Infrastructure from any liability whatsoever that may arise as a result of this document being signed.

Note:

1. ** Delete which is not applicable.*
2. ***NB:** This resolution must be signed by <u>all</u> the Duly Authorised Representatives of the Legal Entities to the consortium/joint venture submitting this tender, as named in item 2 of Resolution PA-15.2.*
3. *Should the number of the Duly Authorised Representatives of the Legal Entities joining forces in this tender exceed the space available above, additional names, capacity and signatures must be supplied on a separate page.*
4. *Resolution PA-15.2, duly completed and signed, from the separate Enterprises who participate in this consortium/joint venture, must be attached to this Special Resolution (PA-15.3).*

public works & infrastructure
Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

DPW-16 (EC): SITE INSPECTION MEETING CERTIFICATE

Project title:	***Thohoyandou High Court: Repairs and Renovations***		
Tender / Quotation no:	*PLK23/09*	**Reference no:**	*6054/0070*
Closing date:	*08/08/2023*		

This is to certify that I, _____ representing

_____ in the capacity of

_____ visited the site on: ***26 July 2023***

I have made myself familiar with all local conditions likely to influence the work and the cost thereof. I further certify that I am satisfied with the description of the work and explanations given at the site inspection meeting and that I understand perfectly the work to be done, as specified and implied, in the execution of this contract.

Name of Tenderer	Signature	Date

Name of DPW Representative	Signature	Date

PA-14: MEDICAL CERTIFICATE FOR THE CONFIRMATION OF PERMANENT DISABLED STATUS

Project title:	***Thohoyandou High Court: Repairs and Renovations***		
Tender / Bid no:	*PLK23/09*	**Reference no:**	*6054/0070*

I, _____ (*surname and name*),

identity number,_____ do hereby declare that I am a registered medical practitioner, with my practice number being _____, practising at _____ _____(*Physical or postal addresses*)

declare that I have examined Mr. / Ms. _____,

identity number _____ and have found the said person to be permanently disabled or having a recurring disability.

"Disability" means, in respect of a person, a permanent impairment of a physical, intellectual, or sensory function, which results in restricted, or lack of, ability to perform an activity in the manner, or within the range, considered normal for a human being." –

The nature of the disability is as follows:

_____

_____

_____

Thus signed at _____ on this _____ day of _____ 20____

_____ _____

Signature Date

OFFICIAL STAMP OF MEDICAL PRACTITIONER

public works & infrastructure
Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

PA-16: PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

---

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- 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 **Preference Points System to be applied**

(*Tick whichever is applicable*).

☒The applicable preference point system for this tender is the **80/20** preference point system.

☐ The applicable preference point system for this tender is the **90/10** preference point system.

☐ Either the **90/10 or 80/20** preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 **Points for this tender shall be awarded for:**

1.3.1 Price; and

1.3.2 Specific Goals

1.4 **The maximum points for this tender are allocated as follows:**

CHOOSE APPLICABLE PREFERENCE POINT SCORING SYSTEM	**☒ 80/20**	**☐ 90/10**
PRICE	**80**	
SPECIFIC GOALS	**20**	
Total points for Price and Specific Goals	**100**	

1.5 Breakdown Allocation of Specific Goals Points

1.5.1 For Procurement transactions with rand value greater than R2 000.00 and up to R1 Million (Inclusive of all applicable taxes), the specific goals as listed in table 1 below are applicable.

All Acquisitions

Table 1

Serial No	Specific Goals	Preference Points allocated out of 20	Documentation to be submitted by bidders to validate their claim for points
1.	An EME or QSE which is at least 51% owned by **black people**	10	ID Copy Or SANAS Accredited BBBEE Certificate or sworn affidavit where applicable Or CSD Report Or CIPC (company registration)
2.	**Located** in a specific Local Municipality or District Municipality or Metro or Province area for work to be done or services to be rendered in that area	2	Office Municipal Rates Statement Or Permission To Occupy from local chief in case of rural areas (PTO) Or Lease Agreement
3.	An EME or QSE which is at least 51% owned by **women**	4	ID Copy Or CSD Report Or CIPC (company registration)

Serial No	Specific Goals	Preference Points allocated out of 20	Documentation to be submitted by bidders to validate their claim for points
4.	An EME or QSE which is at least 51% owned by people with **disability**	2	Medical Certificate Or South African Social Security Agency (SASSA) registration Or National Council for Persons with Physical Disability in South Africa registration (NCPPDSA) Or CSD Report Or CIPC (company registration)
5.	An EME or QSE which is at least 51% owned by **youth.**	2	ID Copy Or CSD Report Or CIPC (company registration)

1.5.2 **For procurement transactions with rand value greater than R1 Million and up to R50 Million (Inclusive of all applicable taxes) the specific goals as listed in table 2 below are applicable:**

All Acquisitions

Table 2

Serial No	Specific Goals	Preference Points allocated out of 20	Documentation to be submitted by bidders to validate their claim for points
1.	An EME or QSE or any entity which is at least 51% owned by **Historically Disadvantaged Individuals** (HDI)	10	ID Copy Or

Serial No	Specific Goals	Preference Points allocated out of 20	Documentation to be submitted by bidders to validate their claim for points
			SANAS Accredited BBBEE Certificate or sworn affidavit where applicable Or CSD Report Or CIPC (company registration)
2.	**Located** in a specific Local Municipality or District Municipality or Metro or Province area for work to be done or services to be rendered in that area	2	Office Municipal Rates Statement Or Permission To Occupy from local chief in case of rural areas (PTO) Or Lease Agreement
3.	An EME or QSE or any entity which is at least 51% owned by **women**	4	ID Copy Or CSD Report Or CIPC (company registration)
4.	An EME or QSE or any entity which is at least 51% owned by people with **disability**	2	Medical Certificate Or South African Social Security Agency (SASSA) registration Or National Council for Persons with Physical Disability in South Africa registration (NCPPDSA) Or CSD Report

Serial No	Specific Goals	Preference Points allocated out of 20	Documentation to be submitted by bidders to validate their claim for points
			Or CIPC (company registration)
5.	An EME or QSE or any entity which is at least 51% owned by **youth.**	2	ID Copy Or CSD Report Or CIPC (company registration)

1.5.3 For procurement transactions with rand value greater than R50 Million (Inclusive of all applicable taxes) the specific goals as listed in table 3 below are applicable

All Acquisitions

Table 3

Serial No	Specific Goals	Preference Points allocated out of 10	Documentation to be submitted by bidders to validate their claim for points
1.	An EME or QSE or any entity which is at least 51% owned by **Historically Disadvantaged Individuals** (HDI)	4	ID Copy Or SANAS Accredited BBBEE Certificate or sworn affidavit where applicable Or CSD Report Or CIPC (company registration)
2.	**Located** in a specific Local Municipality or District Municipality or Metro or Province area for work to be done or services to be rendered in that area	2	Office Municipal Rates Statement Or

Serial No	Specific Goals	Preference Points allocated out of 10	Documentation to be submitted by bidders to validate their claim for points
			Permission To Occupy from local chief in case of rural areas (PTO) Or Lease Agreement
3.	An EME or QSE or any entity which is at least 51% owned by **women**	2	ID Copy Or CSD Report Or CIPC (company registration)
4.	An EME or QSE or any entity which is at least 51% owned by people with **disability** OR An EME or QSE or any entity which is at least 51% owned by **youth.**	2	Medical Certificate Or South African Social Security Agency (SASSA) registration Or National Council for Persons with Physical Disability in South Africa registration (NCPPDSA) ID Copy Or CSD Report Or CIPC (company registration)

1.6 Failure on the part of the tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals, if the service provider/ tenderer did not submit proof or documentation required to claim for specific goals will be interpreted to mean that preference points for specific goals are not claimed.

1.7 The organ of state reserves the right to require of a service provider/tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1. THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \text{ or } \qquad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1,2 and 3 above as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

***Note to tenderers: The tenderer must indicate how they claim points for each preference point system.*)**

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
1. An EME or QSE or any entity which is at least 51% owned by **Historically Disadvantaged Individuals** (HDI)	4	10		
2. **Located** in a specific Local Municipality or District Municipality or Metro or Province area for work to be done or services to be rendered in that area	2	2		
3. An EME or QSE or any entity which is at least 51% owned by **women**	2	4		
4. An EME or QSE or any entity which is at least 51% owned by people with **disability** **or** 5. An EME or QSE or any entity which is at least 51% owned by **youth.*** (**only one specific goal is applicable between specific goal number 4 and specific goal number 5 under 90/10 Preference Point System)**	2	2 2		

Note: *in respect of the 90/10 point system a selection of either disability or youth may be made with an allocation of 2 points for either of them.

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I 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 paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering 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) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted 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

(e) forward the matter for criminal prosecution, if deemed necessary.

…….
SIGNATURE(S) OF TENDERER(S)
SURNAME AND NAME: …….
DATE: ……
ADDRESS: ……
……

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REPUBLIC OF SOUTH AFRICA

DPW-09 (EC): PARTICULARS OF TENDERER'S PROJECTS

Project title:	*Thohoyandou High Court: Repairs and Renovations*		
Tender / quotation no:	PLK23/09	**Closing date:**	08/08/2023
Advertising date:	14/07/2023	**Validity period:**	84 days

1. PARTICULARS OF THE TENDERER'S CURRENT AND PREVIOUS COMMITMENTS

1.1. Current projects

	Projects currently engaged in	Name of Employer or Representative of Employer	Contact tel. no.	Contract sum	Contractual commence-ment date	Contractual completion date	Current percentage progress
1							
2							
3							
4							
5							
6							
7							
8							

Tender no: ***PLK23/09***

1.2. Completed projects

Projects completed in the previous 5 (five) years		**Name of Employer or Representative of Employer**	**Contact tel. no.**	**Contract sum**	**Contractual commence-ment date**	**Contractual completion date**	**Date of Certificate of Practical Completion**
1							
2							
3							
4							
5							
6							
7							
8							
9							

Name of Tenderer	Signature	Date

T2.2 Returnable Documents that will be incorporated into the contract

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PA- 40: DECLARATION OF DESIGNATED GROUPS FOR PREFERENTIAL PROCUREMENT

Tender no: PLK23/09

Name of Tenderer ..... ☐ EME[1] ☐ QSE[2] ☐ Non EME/QSE (tick applicable box)

1. **LIST ALL PROPRIETORS, MEMBERS OR SHAREHOLDERS BY NAME, IDENTITY NUMBER, CITIZENSHIP AND DESIGNATED GROUPS.**

Name and Surname #	Identity/ Passport number and Citizenship##	Percentage owned	Black	Indicate if youth	Indicate if woman	Indicate if person with disability	Indicate if living in Rural (R) / Under Developed Area (UD) / Township (T) / Urban (U).	Indicate if military veteran
1.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
2.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
3.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
4.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
5.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
6.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
7.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
8.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
9.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
10.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
11.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No
12.		%	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ R ☐ UD ☐ T ☐ U	☐ Yes ☐ No

Where Owners are themselves a Company, Close Corporation, Partnership etc, identify the ownership of the Holding Company, together with Registration number
State date of South African citizenship obtained (not applicable to persons born in South Africa)

[1] EME: Exempted Micro Enterprise
[2] QSE: Qualifying Small Business Enterprise

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Department: Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

PA- 40: DECLARATION OF DESIGNATED GROUPS FOR PREFERENTIAL PROCUREMENT

Tender no: PLK23/09

2. DECLARATION:

The undersigned, who warrants that he/she is duly authorized to do so on behalf of the Tenderer, hereby confirms that:

1 The information and particulars contained in this Affidavit are true and correct in all respects;
2 The Broad-based Black Economic Empowerment Act, 2003 (Act 53 of 2003), Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000), the Preferential Procurement Regulations, 2017, National Small Business Act 102 of 1996 as amended and all documents pertaining to this Tender were studied and understood and that the above form was completed according to the definitions and information contained in said documents;
3 The Tenderer understands that any intentional misrepresentation or fraudulent information provided herein shall disqualify the Tenderer's offer herein, as well as any other tender offer(s) of the Tenderer simultaneously being evaluated, or will entitle the Employer to cancel any Contract resulting from the Tenderer's offer herein;
4 The Tenderer accepts that the Employer may exercise any other remedy it may have in law and in the Contract, including a claim for damages for having to accept a less favourable tender as a result of any such disqualification due to misrepresentation or fraudulent information provided herein;
5 Any further documentary proof required by the Employer regarding the information provided herein, will be submitted to the Employer within the time period as may be set by the latter;

Signed by the Tenderer

Name of representative	**Signature**	**Date**

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DPW-21 (EC): RECORD OF ADDENDA TO TENDER DOCUMENTS

Project title:	***Thohoyandou High Court: Repairs and Renovations***		
Tender no:	*PLK23/09*	**Reference no:**	*6054/0070*

1. I / We confirm that the following communications received from the Department of Public Works and Infrastructure before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer: *(Attach additional pages if more space is required)*

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

Name of Tenderer	Signature	Date

2. I / We confirm that no communications were received from the Department of Public Works and Infrastructure before the submission of this tender offer, amending the tender documents.

Name of Tenderer	Signature	Date

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Department:
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REPUBLIC OF SOUTH AFRICA

DPW-15 (EC): SCHEDULE OF PROPOSED SUBCONTRACTORS

Project title:	***Thohoyandou High Court: Repairs and Renovations***		
Tender no:	*PLK23/09*	**Reference no:**	*6054/0070*

We notify you that it is our intention to employ the following Subcontractors for work in this contract.

We confirm that all subcontractors who are contracted to construct a house are registered as home builders with the National Home Builders Registration Council.

	Name and address of proposed Subcontractor	Nature and extent of work	Previous experience with Subcontractor
1			
2			
3			
4			
5			

Name of representative	**Signature**	**Capacity**	**Date**

Name of organisation:	

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DPW-22 (EC): PARTICULARS OF ELECTRICAL CONTRACTOR

Project title:	***Thohoyandou High Court: Repairs and Renovations***		
Tender no:	PLK23/09	**Reference no:**	**6054/0070**

Name of Electrical Contractor:	
Address:	
Electrical Contractor registration number at the Department of Labour	

Name of Tenderer	Signature	Date

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1. GENERAL SPECIFICATION

1.1. Preface

This general specification contains the standard parts of the mechanical tender and / or mechanical contract. The specification details the minimum offer which shall include design, supply, delivery, installation, commissioning, operation, and maintenance of materials and systems as part of mechanical engineering installations. The installations shall be completely as specified, as reflected on the bill of quantities, and as shown on drawings.

1.2. Regulatory framework

The tenderer shall ensure that the installations, including all associated works and methodologies, comply with all the latest amendments of statutory requirements and regulations. The tenderer shall ensure conformance to the following:

a) Occupational Health & Safety Act, Act No. 85 of 1993
b) Construction Regulations
c) Pressure equipment regulations (PER 2009) as amended. Special note shall be made of the requirements for all persons working with and handling pressurized refrigerant gasses to be suitably registered as "competent" persons.
d) Government, Provincial and Local Authorities, Ordinances, Regulations, by-laws, Rules and other legal instructions.
e) All works shall be executed to satisfy the National Building Regulations as applied through SANS 10400: The Application of the National Building Regulations, as amended, together with associated parts.
f) Commissioning shall be executed in accordance with the Chartered Institution of Building Services Engineers (CIBSE) Commissioning Guides M or American Society of Heating Refrigeration and Air-conditioning Engineers (ASHRAE) Guideline 1-1996.
g) Standard Specifications and codes of Practice issued by the South African National Standards and British Standards Institute.
h) SANS 10140-3 – 2017: Identification colour marking Part 3: Contents of pipelines
i) SANS 10142-1 – 2017: The wiring of premises Part 1: Low-voltage installations
j) SANS 10147 – 2014: Refrigerating systems including plants associated with air-conditioning systems
k) SANS 347 – 2012: Categorization and conformity assessment criteria for all pressure equipment
l) SANS 10173 – 2003: The installation, testing, and balancing of air-conditioning duct work
m) SANS 10191 -2007 Acoustics: Determination of sound power levels of noise sources - Guidelines for the use of basic standards for the reparation of noise test codes
n) SANS 10250-2 – 2010: The minimization of environmental pollution during the servicing and repair of automotive air-conditioning equipment Part 2: Servicing and repairs using refrigerant recycle equipment
o) SANS 193 – 2013: Fire dampers
p) SANS 1238 – 2005: Air-conditioning ductwork
q) SANS 1383 – 2008: Rigid urethane and isocyanurate foams for use in thermal insulation
r) SANS 1424 – 2013: Filters for use in air-conditioning and general ventilation
s) SANS 1445-3 – 2018: Thermal insulation materials for industrial applications Part 3: Bonded preformed mineral fibre pipe sections
t) SANS 1470-3 – 2008: Sound power labelling Part 3: Rotating electrical machinery
u) SANS 1498 – 2007: Algaecides for use in industrial cooling water
v) SANS 1508 – 2007: Expanded polystyrene thermal insulation boards
w) SANS 60335-2-24, IEC 60335-2-24; 2014: Household and similar electrical appliances – Safety Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and icemakers
x) SANS 60335-2-30, IEC 60335-2-30; 2015: Household and similar electrical appliances – Safety Part 2-30:

Particular requirements for room heaters

y) SANS 60335-2-40, IEC 60335-2-40; 2015: Household and similar electrical appliances – Safety Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers
z) SANS 60335-2-41, IEC 60335-2-41; 2015: Household and similar electrical appliances– Safety Part 2-41: Particular requirements for pumps
aa) SANS 60335-2-51, IEC 60335-2-51; 2014 Household and similar electrical appliances– Safety Part 2-51: Particular requirements for stationary circulation pumps for heating and service water installations
bb) SANS 60335-2-88, IEC 60335-2-88; 2003: Household and similar electrical appliances– Safety Part 2-88 Particular requirements for humidifiers intended for use with heating, ventilation, or air conditioning systems
cc) SANS 60335-2-98, IEC 60335-2-98; 2010: Household and similar electrical appliances– Safety Part 2-98: Particular requirements for humidifiers
dd) SANS 60335-2-104, IEC 60335-2-104; 2003: Household and similar electrical appliances– Safety Part 2-104 Particular requirements for appliances to recover and/or recycle refrigerant from air conditioning and refrigeration equipment
ee) SANS 60598-2-19, IEC 60598-2-19; 1981: Luminaries Part 2: Particular requirements Section 19: Air-handling luminaries (safety requirements)
ff) SANS 60730-2-9, IEC 60730-2-9; 2013: Automatic electrical controls for household and similar use Part 2-9: Particular requirements for temperature sensing controls
gg) SANS 60730-2-11, IEC 60730-2-11; 2007: Automatic electrical controls for household and similar use Part 2-11: Particular requirements for energy regulators
hh) SANS 14644-1, ISO 14644-1, 2 and 3; 1999: Clean rooms and associated controlled environments Part 1: Classification of air cleanliness

Works shall be executed in accordance with good engineering practice and workmanship at all times. SANS specification shall take precedence in case of conflicting statements in the above specifications. All references to standards and regulations shall be deemed to apply to the latest, current, and / or as amended standard.

1.3. Contract management and control

Resources

The tenderer shall make available suitably competent, experienced and capable resources for the timely execution of the works in accordance with the project specification. Project meetings shall be attended as requested by the Engineer, Principle Contractor and Employer. Upper level management attendance shall be provided at regular site, contract, commercial and engineering meetings.

The tenderer shall submit an organogram of supervisory staff with names that will be involved in the project, showing the time in a month that each individual will be committing to the project against the project program (i.e. a resourced program). The tenderer shall submit curriculum vitae of his key staff indicating relevant experience. All resources on site shall be certified via appropriate organizations demonstrating competence in their ability to perform the tasks required.

Program and completion

The tenderer shall provide a resourced program of the works, in accordance with the directives herein and in compliance with the form of contract. This program shall be provided within one week of appointment and shall clearly indicate all interdependencies related to works by others.

The tenderer shall ensure their program of works is co-ordinated with other disciplines in the project and satisfies the requirements of the main contractor and the principle building contract. The program of works shall be updated bi-monthly to indicate progress on site and to attend to any potential delays.

The contractor shall submit a detailed works program and anticipated cash flow estimate of his/her offer.

Suitable time shall be allocated to perform commissioning, validation, and hand-over upon approval of the engineer. Attention is drawn to the required completion dates and penalties as described within the contract conditions.

Lead time guarantee

The contractor shall submit with the tender offer a guarantee that all equipment and corresponding supply lead times, delivery, installation and commissioning of all equipment can be achieved within the project time frame.

Quality management

The tenderer shall maintain an ISO9000 series compliant quality management system for the duration of the contract. The quality file shall be kept on site and shall be made available for inspection by the Engineer, Employer or his agents.

Signed off quality control checklists, commissioning schedules and test certificates shall be provided prior with all invitations for inspection by the contractor. The Engineer reserves the right to charge the contractor at the prevailing Engineering Council rates for abortive inspections.

Only the highest possible standards of workmanship will be accepted. No inferior quality of workmanship will be accepted.

Scrutiny of drawings

All drawings, circuit or schematic diagrams prepared by or on behalf of the contractor for submission to the engineer in terms of the requirements of this specification shall have been thoroughly checked, corrected where necessary and signed as approved by the contractor before submission to the engineer.

The scrutiny of any drawings by the engineer will include the review of the arrangement, type and operational suitability of the equipment in general only. Approval by the engineer will not release the contractor from his responsibility for the proper operation of the installation or for its full compliance with the specification, drawings, local authority and statutory requirements, or for ensuring that the equipment can be physically accommodated within the space and via the access provided.

1.4. Documentation

Documentation shall be provided to demonstrate compliance with all applicable quality, regulatory and specified requirements. The following list of documentation will be required, as a minimum, in order to complete the commissioning phase of the project. All will be subject to approval by the engineer before implementation on site.

a) Contract particulars including contact details and company details of all parties to the contract
b) Emergency contact details for use in case of emergency and service call-out
c) General arrangement drawings, approved workshop drawings and as-built drawings
d) Critical spares list
e) Full parts list including component manufacturers part numbers and contact details
f) Component manufacturers data sheets
g) Equipment configuration details including air flow balancing data
h) Inventory list with serial and part numbers and drawing references
i) Electrical and control panel layout drawings and wiring diagrams
j) Safety certification for the complete system
k) Operating and maintenance manuals

l) Factory acceptance test reports
m) Commissioning report and training documentation
n) Completed and signed training register for user personnel on the new installations
o) Product, equipment and material Warranties
p) Escalation steps and basic troubleshooting guide

1.5. Hand-over documentation

The contractor shall provide a list of items and documentation for verification prior to handover. This list shall be circulated a minimum of 14 days prior to the request for handover of the project such that the list may be reviewed and amended as may be required.

Project handover is conditional upon receipt and verification of close-out documents. The typical handover documentation shall be issued as three (3) copies of each of the following - operating and maintenance manuals, as-built drawings, certificate of compliance, drawings of the entire wiring installation from distribution boards to equipment including terminations thereof, commissioning report including actual test results of all systems after commissioning, proof or certificate of training of end-user personnel, and a certificate of commitment for the maintenance and guarantee period as applicable via the contract.

1.6. Testing and commissioning

All safety devices shall be checked for effective operation by simulating the abnormal or overload conditions. All tests and results shall be recorded, and a test report shall be compiled for insertion in the operating and maintenance manual.

For all green buildings, technical buildings, pharmaceutical facilities, healthcare facilities and otherwise as requested the commissioning procedure shall conform to the requirements of ASHRAE Guideline 1.1-2007: HVAC&R Technical Requirements for The Commissioning Process and to CIBSE Commissioning Code M: Commissioning Management.

1.7. Work allocation

The work allocation will consist of the following:

a) The end user will provide the necessary permanent electric power supply to a point required by the mechanical contractor. The Client will not supply any distribution boards and equipment, or lighting, or power, or ventilation installations.
b) Alterations, which may be required by the contactor, shall be approved by the engineer and form part of the contractor's scope of work e.g. drilling of access holes.
c) The contractor shall provide a site instruction book which shall be permanently on site.
d) The contractor shall provide their own tools, labour, temporary storage and accommodation, material, plant, transport and equipment and execute the contract with a minimal disturbance to the end user. Pre-fabrication off site shall be adopted where possible.
e) The Contractor shall provide their own sheds and site offices.
f) The Contractor shall prepare all construction drawings and eventual as-built drawings, constituting the entire installation. Two sets of hard paper prints of construction drawings are required for scrutiny before construction is commenced.

1.8. Handling of material

The contractor shall be responsible for providing all the required equipment for the off-loading and proper handling

or rigging of the material on site. They shall also be responsible for the installation into the correct position.

1.9. Setting out of work

The Contractor shall be responsible for the correct setting out of any holes, sleeves, penetrations, plinths, plant hangers and openings that may be required.

1.10. Shop drawing submittal

The contractor shall submit detailed "shop" drawings indicating the works to be completed. Shop drawings shall be provided to the Engineer within 14 days following confirmation of the intent to appoint or sooner as directed by the Employer, Engineer or agent.

Shop drawing submission shall be made in triplicate, at full scale, and shall include a cover sheet, date stamp, and approval stamp. Shop drawings shall clearly indicate works to be completed by others, i.e. power supplies, drains, water supplies, builder's openings, sleeves and penetrations.

Shop drawings shall be compliance with ISO standards. Shop drawings shall indicate the particulars of the parties responsible for the design drafting, review and approval of the drawings.

The scale, drawing size, revision number date and drawing particulars shall be clearly indicated on the drawings. Drawings shall include all sections, 3D views, assembly views, plan views and layouts as required to fully understand the works to be executed.

Works shall be executed strictly in accordance with shop drawings approved by the Engineer. Three copies of the approved shop drawings shall be maintained on site for the inspection of the Engineer at all times.

1.11. Working drawings

One copy of the approved shop drawings shall be maintained up to date to reflect the as built conditions on site. This drawing shall be marked up with all deviations from the approved drawings and shall be highlighted to show installation progress. This marked up drawing shall be copied and issued to the Engineer every time it may be requested.

1.12. Equipment Submittal

The contractor shall compile and submit three (3) booklets of the equipment selection and submittal to the Consulting Engineer within two weeks after appointment for approval. Performance and construction specifications shall be provided for each type of equipment. The equipment submittal booklet shall consist of:

a) Cover page stating the project name, the Client, the consulting engineer and the contractor with contact persons and details
b) The index page stating the contents and sections of the submittal with page numbers
c) General page containing a brief description of the project and the equipment offered
d) Introduction: brief history of the contractor, experience, personnel proposed for the project with brief CV and project photos where the equipment proposed was used.
e) Table of the equipment capacity of all equipment contained in the submittal showing the following:
f) Design conditions
g) Equipment name and designation
h) Area served
i) Operating capacity

j) Dimensions (length, width, height and weight)
k) Starting current, running current and voltage
l) Noise level
m) Compliance with specification
n) Details of the equipment offered (one page per item installed).
o) General name of equipment offered, previous project where equipment was used with reference from the Client
p) The Equipment: all technical specifications, photos where applicable, service interval and estimated operating life in years of the equipment. The technical specifications as a minimum shall state:
q) Capacities
r) Material of manufacture and type of finishes
s) Make
t) Model number
u) Manufacturer details
v) Estimated delivery date
w) Noise levels
x) Operating conditions and performance curves where applicable
y) Compliance with specifications
z) Electrical requirements and loading
aa) Energy efficiency measures of the equipment offered
bb) Any special sustainable design and details included in the equipment
cc) The completed schedule of information in the tender document
dd) Manufacturer's catalogues
ee) Control system and electrical schematics for the equipment
ff) Any other relevant information
gg) Motivation for the proposed equipment
hh) Conclusion
ii) Approval page for signature and date containing the following:
- The contractor's name and responsible person signature
- The consulting engineer's name and responsible person signature
- The Client's signature and responsible person
- Approval stamp by consulting engineer.

1.13. Operation and maintenance manual submittal

The contractor shall compile and submit one (1) booklet of the operation and maintenance manual to the engineer; two months prior to practical completion for approval. On approval by the consulting Engineer, the contractor shall prepare and submit three (3) copies of the approved operation and maintenance manual on practical completion sign off in both hard copy and soft copy. The operation and maintenance manual shall consist of the items as listed herein this specification or as detailed elsewhere in the particular specifications for installations involved.

a) Cover page stating the project name, the Client, the consulting engineer and the contractor with contact persons and details
b) The index page stating the contents and sections of the submittal with page numbers
c) General information on the project:
d) Name of project
e) Address of project
f) Start and completion date
g) The professional team and contacts
h) The contracting team and contacts
i) Emergency contact details of the contractor
j) Maintenance start and completion date
k) Major equipment suppliers and contact details

l) Description of the System
- Design conditions and technical specification
- Salient points of the installation
- Detailed description of the systems
- Health and safety considerations associated with the systems
- Detailed technical specification and description of all installed equipment and system

m) Table of the equipment capacity of all equipment and systems installed on the project showing the following:
- Equipment name and designation
- Area served
- Operating capacity
- Dimensions (length, width, height and weight)
- Starting current, running current and voltage
- Noise level
- Compliance with specification

n) Supplier details and catalogues or technical manuals for each major equipment installed on the project.

o) Operating and Maintenance procedures
- Start and stop procedures
- Emergency procedures
- Procedures for the service, replacement and maintenance of all plant, equipment and systems.

p) Operating and maintenance schedules and checklists:
- Weekly maintenance
- Monthly
- 3 monthlies
- Quarterly
- Yearly
- Minor service
- Major service
- Every 5 years
- Every 10 years

q) Commissioning results and details of each equipment and system

r) Training of end user details and attendance register sign off

s) Recommended spares

t) As built drawings and documentation

u) Equipment submittal approved page

v) Conclusion

w) Approval page for signature and date:
- The contractor's name and responsible person signature
- The engineer's name and responsible person signature
- The Client's signature and responsible person
- Approval stamp by the engineer.

1.14. Training

On completion of the entire sub-contract work, the contractor shall conduct a detailed training session on the installation works for the end user/client representatives. This training shall address the operations, maintenance and all other requirements to maintain a fully functional service to the Client.

For the training to commence, the contractor shall compile and submit two (2) copies of the detailed training manual to the consulting engineer within three months prior to practical completion for approval by the engineer and the end user client. The submission will include the agenda for the training, the requirements and qualifications for the training and the duration.

From the consulting engineer, the contractor shall allow a minimum period of two weeks to train the end user in the proper functionality of the system. The training shall consist of both formal classroom training and hands on training on the completed project.

1.15. Defects liability period

The defects liability period shall be in accordance with the form of contract but shall not be less than 12 months. During the defects' liability period all patent and latent defects shall be attended to by the contractor without cost to the Client.

Any item which is repaired or replaced during the guarantee period shall be guaranteed for a further 12 months. The guarantee shall include parts, labour, shipping, transportation, consumables. No cost associated with equipment or workmanship failure or defect shall be attributed to the Client during the defects' liability period.

1.16. Warranty

The contract works shall remain under warranty for 12 months following practical completion of the works. Sectionalized practical completion shall necessitate sectionalized warranty. A warranty schedule shall be provided for the installation and contained within the O&M manual.

1.17. Maintenance

After first delivery of the installation (practical completion), there will follow a 12-month free maintenance and guarantee period. No costs of maintenance shall be incurred by the Client during the free maintenance period. All equipment shall be maintained as per manufacturer's recommendations. Moreover, as a minimum, the Contractor shall allow for maintenance as per Minor & Major Maintenance Schedules forming part of this specification.

1.18. Temporary use of equipment

No equipment forming part of the permanent installation shall be operated or used, during the construction period without the written permission by the engineer. Equipment shall be handed over to the employer in a new condition for the beneficial use of the Client.

1.19. Division of work

The division of work between the main contractor and the mechanical contractor together with other specialist contractors shall be as stated within the principle for of agreement and as specified.

1.20. Hours of work and site conditions

The site will remain in full operation during all mechanical works. Mechanical works shall be scheduled to minimize interruption to site activities. Works shall be scheduled for completion during normal working hours. In the event of a need to work outside normal hours overtime rates may be affected in order to avoid client disturbance. In the event of a need to work outside normal working hours in order to achieve program commitments such time shall not be recoverable as a variation to the contract.

1.21. Access to the site

The site shall be secured. All personnel shall be required to adhere to the prevailing site terms and conditions of

entry and security protocol. The terms and conditions include but are not limited to the following:

a) Registration of all personnel entering the with the security office
b) Criminal background checks must be submitted
c) All personnel entering the site shall be free of criminal record
d) All personnel may be searched at site access and during the course of their duties.

1.22. Storage of materials

Materials shall be stored in places allocated by the main contractor, employer or his agent. Stored equipment and materials shall be protected against damage, dust and dirt, corrosion, theft and vandalism. Stored materials shall be safely stacked and shall not overload the construction beyond design limits.

1.23. Accessibility and maintainability

All equipment shall be so installed as to be readily accessible for operation, maintenance and repair. A minimum of 1.5 m service access shall be provided around all floor mounted central plant.
All electrical isolators shall be within 1 m of rotating plant and machinery and within clear sight of the equipment access provision.

Filters, belts, bearings and other routinely maintained items shall be readily accessible from a comfortable and safe location. All items of the installation shall be readily accessible for quick and easy replacement. Adequate space shall be left around all items for the removal and replacement of parts.

1.24. Spares

A full set of spares for types of consumable items such as filters, strainers, belts, and lubricating fluids shall be kept on site and a full set shall be handed over on the anniversary of the first hand over date.

1.25. Material selection

All materials shall be selected to ensure compatibility with local conditions, the environment of application and suitability with the fluid or service carried. Where multiple materials are utilized in an assembly or construction the compatibility of the materials shall be ensured.

Galvanic corrosion risk shall be mitigated by the use of non-conductive spacers, cathodic protection or active protection. Materials shall exhibit fire and smoke characteristics in accordance with the rational fire design and National Regulations.

All insulation and cladding shall be applied by experts in the field. Joints shall be as far as possible below the piping and out of immediate view.

2. PARTICULAR SPECIFICATION

2.1. Preface

This Particular Specification contains the specific elements pertaining to Site Conditions, Scope of Works, and Specifications of Equipment / Installations required pertaining to the Mechanical Tender and / or Mechanical Contract. Consequently, all works shall be Designed, Supplied, Delivered, Installed, Commissioned, Operated, and Maintained completely as specified herein, in harmony with the Occupational Health & Safety Act, and as shown on drawings.

2.2. General work description

This specification covers the design, supply, installation, testing, commissioning, and Maintenance of all Mechanical Installations together with associated ancillary equipment to allow for the full operation of installations completely as specified and as shown on the drawings.

The Mechanical Installations forming part of this project are highlighted in this Particular Specification and further detailed in Technical Specifications which are to be read in conjunction to this specification (any inconsistencies shall be brought for clarification by the Engineer).

2.3. Design work

The contractor shall familiarize themselves with the design and where they are of the opinion that the selected routing or mounting is not feasible shall raise such concerns with the Engineer. Moreover, the contractor shall evaluate the positioning of equipment in accordance with aesthetic requirements and attainment of the sought craftsmanship standards.

The contractor shall be responsible for the correct sizing of all equipment supplied such as pipes, flanges, valves, pumps tanks, or any other hardware which, additionally, shall also be in accordance with manufacturer's recommendations.

The Contractor shall be responsible the design and strengthening arrangements to effect mounting and / or plinths for all supplied installations for equipment such as pumps, machinery, or equipment and shall be to the satisfaction of the Engineer.

2.4. Other work

Electrical

All outdoor isolators, for air-conditioning units, shall be provided by the Electrical Contractor from which the Mechanical Contractor shall feed the outdoor and indoor air-conditioning units.

The Mechanical Contractor shall be responsible for all wiring from outdoor isolators to air-conditioning units. Moreover, the Mechanical Contractor shall allow for a further isolator at proximity to each indoor unit for maintenance purposes.

Carpentry Work

All works to be co-ordinated with the Main Contractor. Moreover, cutting and drilling for installation of louvers, return air grilles, and supply air diffusers, fans, and mechanical equipment in general shall form part of this Mechanical Scope of Work.

Builder's Work

Builder's Work form part of the Mechanical Scope of Work and the Contractor shall be responsible and allow for the provision of all wall openings, appropriately designed & sized plinths, supporting brackets, and all building work as required by the Mechanical Installations.

Painting Work

Painting Work form part of the Mechanical Scope of Work and all painting shall be in accordance with:

Preparation	: In accordance with SANS 10064
Ground Coat	: 25 Micron red lead according to SANS 50312 type 11
Undercoat	: 25 Micron
Finish	: 25-micron alkyd enamel according to SABS 30
Colour	: In accordance with SANS 1091-1975

2.5. Work program

The Main building construction period shall be in line within the principal contract period which period shall be co-ordinated with other disciplines. The mechanical contractor shall fit within the overall program, and which may be adjusted from time to time.

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3. PROJECT SPECIFICATION: SCOPE OF WORK

3.1. Site conditions

Table 1: Site Conditions

Project Location (nearest town)	Thohoyandou
GPS Co-Ordinates	-22.946 deg latitude, 30.485 deg longitude
Altitude, m asl	723.9
Average Summer DB, °C	31°C db
Average Minimum DB, °C	9°C db
Required Noise Rating, dBA	NC35

3.2. Project drawings

Drawings listed herein form part of this contract. All installations on the drawings shall be completely as specified and as indicated in the bills of quantities. List of project drawings:

a) 10890-M300: First floor HVAC Layout
b) 10890-M301: Ground floor HVAC Layout
c) 10890-M302: Ground floor Fire protection Layout
d) 10890-M303: First floor Fire protection Layout
e) 10890-M304: Ground floor Hot water Layout
f) 10890-M305: First floor Hot water Layout

3.3. Mechanical scope of Work involved

The mechanical scope of work involves the following:

a) Supply and installation of new HVAC installations (Split units)
b) Supply and installation of new water heating installations (heat pumps & hydroboils)
c) Supply and installation of Fire protection installations (Pumps, fire hydrants, and hose reels)

3.3.1. Supply and installation of new HVAC installations

Existing HVAC Installations

The contractor shall allow testing of air-conditioning units and prepare a list indicating the operational status of all units. The contractor shall then, upon approval of the engineer, decommission and remove all redundant units. Moreover, all resulting openings shall be closed and painted to the satisfaction of the architect.

New HVAC installations

The contractor shall allow for the supply and installation to full operation of new:

(a) Mid wall split units,
(b) Cassette type split units,

(c) Air handling units (with a remote condenser),
(d) Inline duct fresh air supply fans,
(e) Wall mounted stale air extraction fans,

Mid wall and cassette type split units

The mid wall and cassette type units shall be installed within the offices. The air handling units shall be installed in the existing plantrooms.

Air handling units

The new air handling units shall replace the existing air handling units – where existing supply and return ducting shall be re-used. Consequently, the contractor shall allow for new duct adaptor pieces in order to suite integrating the new air handling units on offer onto existing supply and return ducts. ***The two supply and return ducting shall be provided with fire dampers interlocked to fire detectors.*** All ducting to cleaned prior to completion of the new installation – to the satisfaction of the engineer.

The existing air handling units to be replaced are as follows:

AHU 01:

Manufacturer	:Airedale International Air-conditioning
Unit type	: SCX5
Unit serial number	: U37947
Date of manufacture	: 17/12/90
Electrical supply	: 400V 3PH 50Hz

AHU 02 & 03:

Indoor unit (AHU)

Manufacturer	: Searle-bush Africa Limited (Johannesburg)
Type number	: VAH 30
Serial number	: 798/936

Outdoor unit (Remote condenser)

Type number	: LSCU 6-1
Serial number	: 79-B-7940

3.3.2. Supply and installation of new water heating installations (heat pumps & hydroboils)

The hot water installations are no longer working. The existing geysers is installed on the ground and first floors shall be replaced. These geysers shall be replaced with heat pump installations. Each heat pump installation shall be complete with a 200-litre hot water holding tank containing a 4-kW back-up electric heating element. Primary heating shall be through a dedicated 5 kW heat pump. The heat pumps shall feed the nearest hot water outlets via a 22mm diameter insulated copper piping. The contractor shall supply and install heat pumps at the locations indicated on the hot water installation drawings complete with piping the hot water to all the handwash basins in the vicinity of the heat pump installation.

3.3.3. Fire water pump installation

The contractor shall supply and install two new pumps in duty standby configuration. The electric pump shall be the duty unit and the diesel unit shall be the standby unit to start in case the primary electric unit is non-operational.

This pump system shall be complete with a jockey pump to maintain the system pressure.

Operation:

SANS 10252-1: (7.3.4.2) provides that where any installation is provided with a storage tank in accordance, the installation shall be provided with a single power-driven booster pump capable of maintaining a flow rate of at least 90 L/min at a flow pressure of at least 300 kPa at any hose reel.

Water storage for fire hose reels has been provided on the civil engineering drawings. It is envisaged that water drawn from the storage shall require boosting to the specified fire hose reel pressure. Furthermore, it is recommended that the electrical booster pump be provided with two sources of electrical power viz. normal municipal power and stand-by generator. This is because of national power supply reliability challenges or "load shedding".

An additional power source in the form of a diesel generator was explored and shall be provided (through a dedicated diesel pump).

Specification:

The diesel pump engine shall be air cooled. No water-cooled engines shall be accepted.

The pump system shall be capable of delivering 120 litres per minute at 4.5 Bar. This flow rate shall be adequate to feed at least 2 necessary hose reels.

The pump set shall be situated at proximity to the water storage tank. The protection shall consist of at least roof covering to provide shade to guard against sunlight as well as rain ingress. The general idea being to prolong pump set lifespan and improve reliability.

An electrical power isolator shall be provided by the contractor. The isolator shall also be fed from the building generator or emergency power. Similarly, the isolator shall be complete with necessary IP rating to guard against dust or water ingress.

The pump set piping system shall be complete with a water flow test kit. This kit shall assist with determining the system pressure and flow rate during commissioning, yearly flow testing, and monthly flow testing. The commissioning and yearly flow testing shall allow for discharging of water through the hose reels.
No water re-cycling has been provided i.e. discharged water during testing shall not be taken back into the storage tank for health purposes (drinking water & fire water is combined).

No remote monitoring has been provided, however, basic text messaging from the pump set to a designated person shall be provided during final specification. The requirement is that the pump sends basic pump information such as power failure, pump running, and system trouble to a designated number.

4. TECHNICAL SPECIFICATION

4.1. HVAC installations

4.1.1. Split units

Split Unit installations are specified under this section of the project specification which include Mid wall units, Cassette units, under-ceiling units, and concealed hide away units.

4.1.1.1. Applicable standards

The air-conditioning units and installation in general shall be in accordance with:

Table 2: Applicable HVAC standards

STANDARD	YEAR	DESCRIPTION
SANS 1125	2004	Room air conditioners and heat pumps
SANS 10147	2014	Refrigerating systems including plants associated with air-conditioning systems
SANS 60335-2-40	2015	Household and similar electrical appliances — Safety. Part 2 — 40: Particular requirements for electrical heat pumps, air conditioners and dehumidifiers
SANS 10142-1	2017	The wiring of premises Part 1: Low-voltage installations
SANS 1453	2018	Copper tubes for medical gas and vacuum services
SANS 1424	2013	Filters for use in air-conditioning and general ventilation
SANS 1238	2005	Air-conditioning ductwork
SANS 10173	2003	The installation, testing and balancing of air-conditioning ductwork
SANS 10400	2018	National building regulation
SANS 347	2010	Categorization and conformity assessment criteria for all pressure equipment
SANS 10147	2012	Refrigerating systems including plants associated with air-conditioning systems
SANS 1125	2004	Room air-conditioning and heat pumps
SANS 5151	2013	Non-ducted air conditioners and heat pumps testing and rating for performance
SANS 1123	2017	Pipe flanges
SANS 10140	2017	Identification colour marking Parts 1 to 5
ASHRAE 62	2019	Ventilation for acceptance indoor quality

4.1.1.2. General

The units shall be of the heat pump inverter type. The air-conditioning units shall be standard factory assembled, piped and wired. The units shall be thoroughly tested for all operating conditions. Spares shall be freely available in South Africa. On request, the Contractor shall provide the Engineer with performance test certificates.

The air-conditioning units and installation in general shall be in accordance with the high / mid wall unit's supplier's recommendations. Any discrepancies between this specification and the supplier's recommendations that may influence the unit's performance or guarantee shall be clarified with the Engineer during tender stage.

The electrical power requirements to the condensing units shall be:

a) Single phase when the cooling capacity of the unit is less than 10 kW.
b) Three phase when the cooling capacity of the unit is more or equal to 10 kW.

The indoor unit and condensing unit shall be interconnected with refrigerant piping, electrical wiring and interlocking control cabling. The pipe and cable connections shall be made in accordance with the unit supplier's recommendations. R22 refrigerant shall not be accepted.
Each condensing unit with connected evaporator unit shall be clearly labelled to identify different split units.
The outdoor unit coil shall be treated for corrosion with blygold, techni-coat, corium or any other method as approved by the Engineer. All units shall be of Daikin inverter manufacture or other approved make. "Other approved" means approved by the Engineer during the tender stage.

4.1.1.3. Performance specifications

Cooling and heating capacities are room conditions and all equipment shall be de-rated to meet these requirements.

De-rating shall be done to compensate for the following:

a) Altitude above sea level.
b) Refrigerant pipe lengths.
c) Design conditions specified.

All units shall be capable of meeting total and sensible cooling requirements. Tenderers shall provide proof of de-rated capacities with their tender. All capacities specified are to be achievable at medium evaporator fan speed.

4.1.1.4. Protection and safety devices

Thermal protection shall be provided for the compressor, indoor and outdoor fan motors. Over current relay shall be provided for the compressor, indoor and outdoor fan motors to ensure over current protection. Reverse phase, three phase overload, overload during start-up, phase imbalance, phase loss and low voltage protection shall be provided for all three phase motors.

Protection fuses shall be provided for all control circuits.

The compressor shall have high and low refrigerant pressure protection.

The indoor and outdoor units shall comply with the safety requirements as set out in:

SANS 60335-2-40, Household and similar electrical appliances – Safety. Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers

4.1.1.5. Electrical

Generally, the power to high/mid wall units shall be provided by the electrical contractor in a weatherproof lockable isolator mounted within 1 m from the condensing unit. The mechanical contractor shall do the entire electrical installation from the isolator to the condensing unit and the indoor unit.

All electrical and control cables shall be neatly strapped to the refrigeration piping or shall be mounted in a galvanised cable tray. The entire electrical installation shall comply with SANS 10142-1-2003: The wiring of premises Part 1: Low-voltage installations

On completion, the Contractor shall issue a compliance certificate for the entire electrical installation. Electrical and control cables mounted between indoor and outdoor units shall be installed without joints in the cable and shall be of

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the UV protected type.

4.1.1.6. Controls

Controls shall be wired remote controller type. Controls shall be of the same manufacture as the air conditioner. The controller shall be fitted in a wall mounted holder neatly mounted next to the room light switch. Controls shall have the following minimum functionality:

a) Manual ON/OFF.
b) ON/OFF by 24 hour / 7-day timer.
c) Room temperature display.
d) Room temperature adjustment.
e) Cooling / heating / ventilation selection.
f) Automatic change over between cooling and heating.

4.1.1.7. Refrigeration circuits

Refrigerant piping shall be in accordance with the following standards:

a) SANS 1453: Copper tubes for medical gas and vacuum services
b) SANS 10147: Refrigerating systems including plants associated with air-conditioning systems

Fittings shall be copper based capillary solder fittings in accordance with SANS 1067. All soldered joints on proprietary manufactured units shall be carefully checked and remade if found damaged in transit. Pipe size selections shall be such as to produce moderately low velocities whilst, nevertheless:

a) Ensuring proper oil return to the compressor and minimizing lubricating oil being trapped in the system.
b) Ensuring practical lines without excessive pressure drops and with proper feed to evaporators.
c) Preventing liquid refrigerant from entering the compressor during operation and at shutdown.

Refrigerant piping shall be sized and fitted with the necessary oil traps strictly in accordance with the unit manufacturer's requirements. All refrigerant pipelines shall be insulated with the "Armaflex" type, lightweight, elastomeric nitrile rubber tube insulation. Insulation thickness shall be 13 mm.

Suction and liquid pipelines shall be insulated separately and joints on insulation shall be glued with the insulation manufacturer's recommended adhesive to create a vapour barrier. The installation of trunking and trays shall form part of this mechanical contract.

4.1.1.8. Installation requirements

The following standard drawings shall apply and shall be read in conjunction with this specification:

Table 3: Standard HVAC drawings

DRAWING DESCRIPTION	DRAWING NUMBER
Typical condenser mounting detail with isolator position (wall-mounted with U-trap)	STD-09
Typical high/mid wall mounting detail (condensate pump installation)	STD-03

Installation of indoor and outdoor units
During installation, care shall be taken to ensure that no vibrations are carried over to structures to which the indoor and outdoor unit is fixed. Outdoor condensing units shall be installed on wall mounted brackets and / or a concrete slab as indicated on the project drawings.

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Where installed on wall mounted brackets, the condensing unit shall be securely bolted to the mounting bracket with adequately sized fasteners. Where installed on a concrete slab, the condensing unit shall be fitted on top of neoprene vibration isolating pads and 450 mm square concrete paving slabs.

Installation of condensate drainpipes
If an outdoor unit (heat pump type) is mounted against a wall more than 1 m above ground / floor level, the unit shall be fitted with an uPVC drainpipe neatly saddled to the wall. Drainpipe sizes for outdoor condensing units shall be to the supplier's specification.

Condensate drainpipes shall always run together with refrigerant pipes and shall always be installed in the same trunking and on the same cable trays for as far as the installation permits. Surface mounted drain piping shall only be allowed where condensate drainpipes run in a different direction to either a service duct, wastewater pipe or any other location as indicated on the project drawings. Surface mounted drain piping shall be secured to the wall by means of galvanised steel saddles at no more than 1 m intervals.
The high / mid wall units shall be mounted on the inside of exterior walls and the mechanical contractor shall drill sufficiently sized holes through which refrigerant pipes, drainpipes and cable wires shall penetrate directly behind the indoor unit. Drainpipes running from the indoor unit through the wall shall be adequately sloped to ensure positive drainage.

All condensate pipes running from indoor units to wastewater pipes, outlet gullies or open wastewater points shall be fitted with a u-trap at a location as indicated on the project drawings. uPVC pipes shall be used for drain piping from indoor units. Drainpipe sizes for indoor units shall be 32 mm for all unit sizes.

The first 5m of drain piping shall be insulated with "Armaflex" type, lightweight, elastomeric nitrile rubber tube insulation. Insulation thickness shall be 13 mm. Horizontal mounted drainpipes shall be installed at a slope of 20 mm per 1 000 mm, ensuring positive drainage.

Where drainage piping or control cabling is required to be installed flush-mounted, positioning and chasing shall be done in good time to meet construction programs.

Installation of refrigeration piping
Refrigerant piping shall be arranged so that normal inspection and servicing of the compressor and other equipment is not hindered. Locations where copper tubing will be exposed to mechanical damage shall be avoided. Hangers and supports where piping goes through walls shall be installed to prevent transmission of vibration to the building.

Refrigerant piping in ceiling voids and mounted internally against walls shall be installed in 101 mm wide galvanised light duty cable trays (per unit). Pipes shall be strapped over insulation to cable trays at 500 mm intervals with suitably sized cable ties. Cable trays shall be 152 mm wide where drainpipes run together with refrigerant piping (per unit).

Externally mounted refrigeration pipes and drainpipes shall be mounted in cable trunking (127 mm x 76.2 mm). Cable trunking shall be complete with clip on covers. Pipes and cables shall be strapped together every 500 mm with suitably sized cable ties and loosely fitted in the trunking. The trunking shall be manufactured from galvanised steel and epoxy powder coated to a colour as specified by the Engineer.

Any insulation material not covered by the trunking and exposed to the elements shall be neatly strapped with cable ties to minimise the possibility of dirt and water entering between the insulation and refrigeration pipes.

4.1.2. Packaged units

The following installations shall be specified under this section of the project specification: Air Handling Units (Courtrooms).

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4.1.2.1. Applicable standards

The air-conditioning units and installation in general shall be in accordance with:

a) SANS 10147: Refrigerating systems including plants associated with air-conditioning systems
b) SANS 60335-2-40: Household and similar electrical appliances — Safety. Part 2 — 40: Particular requirements for electrical heat pumps, air conditioners and dehumidifiers
c) SANS 10142-1-2017: The wiring of premises Part 1: Low-voltage installations
d) SANS 1424-2013: Filters for use in air-conditioning and general ventilation
e) SANS 1238:2005: Air-conditioning ductwork
f) SANS 10173:2003: The installation, testing and balancing of air-conditioning Ductwork

4.1.2.2. Air Handling Units (Split unit type with a remote condenser)

The units shall be of the heat pump type. The units shall be of the air-cooled type with a remote condenser. The units shall be self-contained and completely charged, standard factory assembled, piped and wired. The units shall be properly assembled, thoroughly tested for all operating conditions and supplied with performance test certificates. Spares shall be freely available in South Africa.

The installation in general shall be to the supplier's recommendations. Any discrepancies between this specification and the supplier's recommendations that may influence the unit's performance or guarantee shall be clarified with the Engineer during tender stage. Heat pump type rooftop package units shall have a defrosting cycle that will defrost the condensing coil during the winter months when heating is required.

Both condenser and evaporator coils shall be treated for corrosion with a method approved by the Engineer. An anti-short cycle timer shall protect the compressors from immediate restart after shutdown or when switching from cooling to heating mode and vice versa. A flow diagram describing fault finding procedures and a legend describing all buttons, lights and schematics shall be prepared and printed/plotted on hard paper. The diagram shall be laminated and neatly mounted inside the unit switchboard.

The unit shall be provided with hoisting plates for rigging and hoisting the unit. The hoisting plates shall be in the base of the unit. All units proposed shall be approved by the Engineer prior to the ordering thereof.

4.1.2.3. Performance specification

Cooling and heating capacities specified are room conditions and all equipment shall be derated to meet these requirements.

De-rating shall be done to compensate for the following:

a) Altitude above sea level.
b) Design conditions specified.

All units shall be capable of meeting total and sensible cooling requirements. Tenderers shall provide proof of de-rated capacities with their tender. All capacities specified shall be achievable at medium evaporator fan speed.

4.1.2.4. Protection and safety devices

Reverse phase, three phase overload, overload during start-up, phase imbalance, phase loss and low voltage protection shall be provided for all three phase motors. Protection fuses shall be provided for all control and operating circuits. The compressor shall have high and low refrigerant pressure switches for protection. The indoor and outdoor units shall comply with the safety requirements as set out in SANS 60335-2-40: Household and similar

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electrical appliances – Safety. Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers

4.1.2.5. Electrical

All Electrical work will be done by the Client apart from the HVAC DB that will be supplied by the contractor. The contractor will connect all units to the isolators that will be supplied and installed by others.

4.1.2.6. Controls

The Controller shall be of the same manufacture as the rooftop package unit and shall display the following:

a) Operation mode
b) A checking display when abnormality occurs in the unit
c) Setpoint temperature
d) Operational lights
e) Room temperature display
f) Fan speed indication
g) Key lock function

The controller shall allow the following operational functions:

a) Manual ON/OFF.
b) ON/OFF by seven-day timer.
c) Room temperature adjustment.
d) Scheduled weekly timer
e) Cooling / heating / ventilation selection.
f) Automatic change-over between cooling and heating.

Where a remote controller type is installed against a wall, the controller shall be mounted over a flush mounted 100 mm x 50 mm electrical box. Control wiring shall be installed in a 20 mm electrical conduit from the controller to the rooftop package unit. The conduit and outlet box shall be chased into the wall by the electrical contractor. The electrical contractor shall install the conduit from the outlet box to 100 mm above ceiling level directly above the controller.

A "RUN ON" pushbutton with adjustable timer shall be provided for each rooftop package unit and shall be installed in the relevant space where indicated on the project drawings. The controller shall be integral to the rooftop package unit with temperature setpoint control on the return air temperature measured with temperature sensors situated in the return air path of the rooftop package unit.

The controller shall be of the hard-wired remote controller type, installed at the location where indicated on the project drawings. Temperature setpoint control shall be on the return air temperature measured with temperature sensors situated in the return air path of the rooftop package unit.

4.1.2.7. Smoke detection system

A smoke detection system shall be installed in the return air ducting at the location where indicated on the project drawings. The smoke detection system shall be approved by the Engineer prior to the ordering there of and shall comprise of:

a) Conventional Optical Smoke Detector
b) Duct Smoke Detector

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c) Control Panel with battery pack

On detection of smoke, the smoke detector system shall immediately open a relay to switch the air handling unit off.

4.1.2.8. Installation requirements

Rooftop package units shall either be installed on concrete plinths or channel u-frames, whichever is indicated on the project drawings. Where mounted on concrete plinth, the unit shall be bolted with anchor bolts on top of neoprene vibration isolating pads and support surface. Where installed on top of channel u-frames, the unit shall be mounted with spring isolators mounted on the channel U-frame. The channel U-frame shall be fitted loosely on the roof at the location where indicated on the project drawings. The channel U-frame shall be of heavy gauge steel type, hot dip galvanised and sufficiently strong to carry the load of the rooftop package unit. The U-frame shall be to a size as indicated on the project drawings.

Drainpipes shall be installed to drain condensate from the unit to the nearest gulley or drain point. The drainpipe shall be uPVC tubing with a diameter of not less than 32 mm. A U-trap to the supplier's recommendation shall be provided to prevent the ingress of unconditioned ambient air. Drainpipes shall always be installed at a slope of 20 mm per 1 000 mm to ensure positive drainage.

4.1.2.9. Ducting

The following standard drawings shall apply to the installation of ducting and shall be read in conjunction with this specification.

Table 4: Applicable Standard Duct Drawings

DRAWING DESCRIPTION	DRAWING NUMBER
Typical change in size and shape of duct cross-sectional areas	WM - 001
Bends and turning vanes for various size rectangular ducts	WM - 001
Bends and turning vanes for various size circular ducts	WM - 001

4.1.2.9.1. General

Sheet metal ductwork shall be manufactured in accordance with SANS 1238 and installed balanced and tested as set out in SANS 10173. The installation and manufacture of ductwork shall strictly be in accordance with SANS standard specifications with specific attention given to the following:

Changes in size and shape of ducting: refer to SANS 1238, section 6.3. Particular requirements are given on the following standard drawing: TYPICAL CHANGE IN SIZE AND SHAPE OF DUCT CROSS-SECTIONAL AREAS

a) Access openings, doors and covers: refer to SANS 1238, Section 5.3.
b) Sealant requirements: refer to SANS 1238, Section 5.6.
c) External ducting insulation: refer to SANS 10173, Section 5.4.
d) Material thickness and duct stiffening for low pressure ductwork: refer to SANS 1238,

Section 6 for rectangular ductwork and SANS 1238, Section 7 for circular ductwork.

Radius and square bends as well as turning vanes: refer to SANS 1238, section 6.4. Typical bend layouts as set out in SANS 1238 are given on the following standard drawings: BENDS AND TURNING VANES FOR VARIOUS SIZE RECTANGULAR DUCTS, BENDS AND TURNING VANES FOR VARIOUS SIZE CIRCULAR DUCTS

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Unless the sheet-metal ductwork is inherently corrosion protected, all sheet-metal shall be protected against corrosion as outlined in SANS 1238, Section 8. It shall be the responsibility of the installing contractor to ensure proper assembly and sealing of sheet-metal ductwork and insulation strictly in accordance with SANS specifications.

The air duct system shall be of the low-pressure type and the ductwork shall be manufactured of galvanised mild steel with general material requirements as set in section 5.1 & 5.2 of SANS 1238. The ductwork shall either be circular or rectangular in cross-section as indicated on the project drawings. The first dimension given on the drawings for rectangular ductwork shall be read as the width on plan and the depth on section, and the second dimension shall be read as the depth on plan and the width on section.

The duct dimensions shown on the drawings are sheet metal dimensions. All final dimensions shall be checked on site or verified by means of architect's working drawings where available and structural drawings, before the fabrication of the ducting. Sealing membranes and adhesives for affixing insulation shall meet the indexes for surface spread of flame, heat contribution and smoke production as set out in section 4 of SANS 1238. The inner surfaces of ducting shall be smooth, and no internal insulation shall be used. Dampers, sound attenuators, duct splitters and turning vanes shall be installed where indicated on the drawings.

Flexible connections shall be provided between all fans, sound attenuators, air-handling units, and ducting. Flexible connections exposed to weather shall be provided with protecting galvanised sheet steel cover strips. The material used for flexible joints shall comply with the requirements as set out in SANS 1238, section 5.5. Flexible connections shall be provided on both sides of the equipment with a fixing method as indicated on the following standard drawing: FASTENING OF FLEXIBLE MATERIAL TO METAL DUCTWORK.

Ducting shall always be installed in such a way, that, especially in plant rooms, maximum height between the floor and the underside of ducting is achieved. The installation and testing of hangers shall comply with the requirements as set out in SANS 10173. All hangers shall be treated against rust and shall be painted. The ducting sections to be painted are indicated on the project drawings. The galvanised mild steel surface of the ducting shall not be damaged or marked in any way. The internal surface of plenums and ducting shall be painted black where necessary, to prevent the visibility of the inside surface of the duct or plenum.

All galvanised ducting shall be prepared, coated and painted to the following method. All galvanized surfaces requiring painting shall be thoroughly cleaned with galvanised iron cleaner, rinsed and dried. It shall then be painted with one coat galvanised iron primer or self-etch primer. Finally, the surface shall be given two coats of high gloss enamel paint to a colour as specified by the architect. Reinforcement, duct stiffening and fastening accessories shall be galvanised and installed where required. Only duct accessories manufactured from compatible materials, which comply with SANS 10173, shall be installed with the ductwork. Tie rods shall be manufactured from galvanised steel. Rivets, screws, bolts and other fastening equipment shall be corrosion proof.

4.1.2.9.2. Longitudinal seams and transverse joints

Pieces of ductwork shall be joined with the necessary sealants, as applicable, as set out in SANS 10173, Section 5.

Rectangular Ductwork

Longitudinal seams and Transverse joints for rectangular ductwork shall be in accordance with SANS 1238, Section 6. The types of seams and joints outlined in the SANS standard are depicted on the following standard drawings for clarity:

a) LONGITUDINAL SEAMS AND TRANSVERSE JOINTS FOR RECTANGULAR LOW-PRESSURE DUCTWORK
b) LONGITUDINAL SEAMS AND TRANSVERSE JOINTS FOR RECTANGULAR MEDIUM AND HIGH

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PRESSURE DUCTWORK

As an alternative to transverse joints specified in SANS 1238, other flanged joints will also be considered provided that they meet the SANS requirements. Flanges shall be manufactured from cold rolled steel and hot dip galvanised after manufacture.

Circular Ductwork

Longitudinal Seams and Transverse Joints for circular ductwork shall be according to SANS 1238, Section 7. Particular details on the seams and joints are outlined on the following standard drawings:

a) LONGITUDINAL SEAMS AND TRANSVERSE JOINTS FOR CIRCULAR PRESSURE DUCTWORK

4.1.2.9.3. The hanging and supporting of ductwork

Ducting with insulation and Vapour Barrier

Hangers and supports for rectangular and circular ductwork shall comply with SANS 10173, section 5.3 "Ductwork with a vapour barrier". The hanger and support types are depicted in the following drawing: HANGERS AND SUPPORTS FOR DUCTING WITH INSULATION

4.1.2.9.4. Ducting with no insulation

Hangers and supports for rectangular and circular ductwork with no insulation shall comply with SANS 10173, section 5.3 "Ductwork with no vapour barrier". The hanger and support types used for ducting with insulation may be used. In addition to these types, the types depicted in the following standard drawing may also be used: HANGERS AND SUPPORTS FOR DUCTING WITH NO INSULATION

4.1.2.9.5. Duct insulation

All air ducts carrying heated or cooled air, except where ducting run in conditioned spaces or specifically stated to the contrary shall be externally thermally insulated. Internal insulation shall not be acceptable. All joints and valves, dampers etc. shall also be adequately insulated. All ducting insulation material and installation shall comply with the requirements as set out in

SANS 10173, section 5.4.2.1. External duct insulation shall be highly resistant, organic glass fibre blanket bonded with resin, faced and vapour protected with an aluminium foil cover laminate. The external insulation shall be approved by the engineer before ordering thereof.

Table 5: External Duct Insulation Specifications

Type	Thickness (mm)	Volumetric Mass (kg/m^3)	Thermal Conductivity (W/m^oC)	Temperature Limits	Fire Rating
Contractor to obtain approval from the Engineer	40	16	0.040 @ 35 ºC	120 ºC	Class 1

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Duct Wrap 40 40 16 0.040 @ 35 °C 120 °C Class 1

Insulating material shall be fixed to the duct with adhesive and strapped or clamped at intervals not exceeding 300 mm. Mechanical fastener pins may also be used on the bottom and sides of the duct. The Contractor shall reinstate the integrity of the vapour barrier after the pins have been fixed. Joints in the insulation shall be taped by means of an aluminium type of the same quality as the foil facing with a minimum overlap 50 mm. No vapour seal shall be left punctured.

All insulated ductwork shall be provided with a vapour barrier to the requirements as set out in SANS 10173, section 5.4.2.3. If an insulation material is used that is not faced with an aluminium foil then a continuous vapour barrier shall be secured to the insulation and adequately sealed with an adhesive aluminium tape or equal method. The vapour barrier material shall comply with the requirements for flammability of sealing membranes of SANS 1238. Ducting running in areas exposed to the weather elements shall be provided with an additional protective layer applied over the existing vapour barrier.

Galvanised sheet metal shall cover the insulated ductwork to shed water and provide protection against physical damage. The galvanised sheet metal cladding shall at least be 0.6 mm in thickness and secured tightly to the insulation. In the case of a vapour barrier, care shall be taken to ensure that the vapour barrier is not damaged in any way. If the vapour barrier is damaged in the process of installing the cladding then the contractor shall repair, seal and reinstate the integrity of the vapour barrier as needed.

4.1.2.9.6. Flexible ducting

Flexible ducting shall comply with the requirements as set out in SANS 10173, section 5.7. Flexible ducting shall be proprietary manufactured with a fire rating to SABS 0177 Part 3 Class 1. The flexible ducting shall have an adequate working pressure and temperature range to suit the application of the installation. Flexible ducting shall at all times be kept to a length not exceeding 1.5m. Flexible ducting shall not have more than the equivalent of one 90° bend and bends shall be of maximum possible radius. Flexible ducting shall be supported with sufficient and correct brackets that will ensure maintenance of shape. Flexible ducting shall be provided between air terminals, diffusers and all locations as indicated on the project drawings. The inner core shall be of aluminium laminate with a heavy-duty steel helix core. The flexible ducting shall be insulated with 25/40/50 mm fibreglass insulation and provide with reinforced multiple layer aluminium laminated outer vapour barrier. The flexible ducting shall be approved by the Engineer prior to the ordering there of.

4.1.2.9.7. Testing of ductwork

All ducting shall be leak tested in accordance with SANS 10173, section 4.3. No ducting shall have leakage rates in excess of 5 % of the required air flow rate in any section of ductwork or in excess of the SANS permissible leakage rates, whichever is the smallest.

4.1.2.10. Air terminals and dampers

Where selected by the contractor, air diffusion equipment shall be selected in accordance with the manufacturer's recommendations, capable of passing the specified air quantity at the appropriate throw without creating excessive resistance, noise or local draughts. All air diffusing equipment shall be capable of meeting the NC level or dBA requirements, as specified in section 1.2 – sound control, for the space environment where the equipment is installed. In all instances where spigot boxes (plenums) are used for the connection of air diffusion equipment, the inside surfaces shall be painted black to prevent visibility of the internal surface from ground level. During commissioning of the system, each grille, diffuser, valve etc. shall be set to deliver the specified air quantity. It is the Contractor's responsibility to check regenerated noise levels of grilles offered against the overall acoustic performance of the system required. Noisy grilles that exceed the NC level requirements of the given space shall be replaced at the Contractor's expense with more suitable types.

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4.1.2.10.1. Return, transfer, and door grilles

Return air grilles shall be manufactured from extruded type anodised aluminium, naturally anodised or epoxy powder coated to a colour as specified by the Engineer. Return air grilles shall in all instances have fixed blades with a curved blade profile. Return air grilles shall be capable of meeting the airflow requirements, as set out on the project drawings, with a face velocity not exceeding 2 m/s.

Transfer air grilles shall be complete with fixed curved blades and outer frame on both sides of the wall or partition. Transfer air grilles shall be of aluminium extruded type, naturally anodised or epoxy powder coated to a colour as specified by the Engineer. Openings in walls where transfer grilles are to be installed shall be provided by the Contractor.

Door air grilles shall be installed in wooden doors only. In cases where steel and glass doors are used, transfer grilles or transfer ducting as an alternative shall be installed. Door air grilles shall be of the chevron-blade type. Door air grilles shall be manufactured from extruded type anodised aluminium naturally anodised or epoxy powder coated to a colour as specified by the Engineer.

Transfer ducting shall comprise of galvanised sheet metal ducting and aluminium curved blade intake and outlet transfer grilles. Flexible ducting shall not be used as transfer ducting.

Return, transfer and door air grilles shall be provided where indicated on the project drawings and shall be installed to the supplier's recommendation. Return air grilles shall be installed directly on the ducting where indicated on the project drawings unless specified otherwise. The connection between return air grilles and ducting shall be airtight and sufficiently strong to handle the duct pressure.

4.1.2.10.2. Weather louvers

Weather louvers shall have standard blade spacing of 50 mm. Weather louvers shall be manufactured of extruded aluminium, naturally anodised or epoxy powder coated to a colour as specified by the engineer. Weather louvers shall be constructed with drip edges to blades and rigid frames to enable building in.

The top and bottom blade of each weather louver shall be fitted flush with the frame and shall be smooth without grooves, channels or recesses where dirt or water can accumulate. Weather louvers shall be watertight and shall prevent the entrainment of raindrops at a face velocity of up to 3 m/s.

Plastic bird mesh screens shall be fitted behind the blades. Galvanised expanded metal or wire mesh screens with 12 mm opening sizes shall also be accepted. Weather louvers smaller than 450 x 300 mm, shall have 19 mm spacing between blades. Grilles shall be installed horizontally at the location where indicated on the project drawings.

4.1.2.10.3. Fixing of wall-mounted grilles and louvers

All wall-mounted grilles and louvers shall be fixed to a hard wood frame. The timber frames shall be supplied with the grilles as part of this installation. The timber frames shall be manufactured in such a way that the flanges of the grilles is mounted flush with the wall and extend past the outer edge of the timber frames by approximately 5 mm. The timber frames shall be provided with the necessary cleats with which to mount them in brick or concrete walls. The depth of the timber frames shall be similar to the walls in which they are fitted.

4.1.2.10.4. Supply air diffusers and supply air grilles

The supply air grilles shall be manufactured of extruded type anodising grade aluminium and shall be provided with opposed blade volume control dampers, unless specified otherwise on the project drawings. Volume control dampers fitted with supply air grilles shall conform to SANS 1238, section 6.5 requirements. The blades shall be

adjustable from the front of the grille.

Where Ceiling diffusers are specified on the project drawings, diffusers shall be manufactured from extruded type 5OS aluminium, naturally anodised or epoxy powder coated to a colour as specified by the Engineer. Ceiling diffusers shall be complete with an opposed blade damper, plenum box with spigot and ceiling plate. CD type diffusers shall have a standard flat frame with blade spacing and distribution pattern as indicated on the standard drawings.

Diffusers shall be manufactured from Fibre Glass Matt and approved SABS Fire Retardant resin painted to a colour as approved by the Engineer. The face plate shall be adjustable for air balancing.

Alternatively, diffusers shall be manufactured from steel and powder coated to a colour as specified by the Engineer. Moreover, diffusers shall be equipped with a locking bracket to lock the adjustable radial disc once the system has been balanced.

Alternatively, diffusers shall be manufactured from steel and finished in a chip resistant baked epoxy powder coating to a colour as specified by the Engineer. The control disc shall be adjustable to vary airflow for balancing purposes. The diffuser shall be equipped with a locknut on the control shaft to lock the volume control disc in position after the system has been balanced.

Diffusers with electrical reheaters such electrical elements shall be of the incaloy black heat type, installed in the neck of the diffuser. The reheater elements shall have overheat protection. The temperature controller shall be used to control the temperature of the reheaters. The temperature controller shall provide a proportional-integral signal that will vary the reheater output capacity with a pulse width modulation action, i.e. switching the heaters on and off via a triac switching set. The zone temperature setpoint shall be adjustable with a digital remote controller, neatly mounted next to the light switch. The capacity of the reheaters shall be as indicated on the project drawings. The electrical contractor shall provide either a lockable isolator or 16 A switch socket outlet next to the diffuser (not further than 1m from the diffuser), whichever is specified on the project drawings.

Alternatively, outlet diffusers shall be manufactured from aluminium. Radial outlet diffusers shall comprise of sheet steel radial outlet elements, circular outlet jacket, moulded visible outlet surface and central fastening screw. Multi radial diffusers shall comprise of a twisted outlet with sheet steel fixed twist vanes, shaped round visible surface and manually adjustable control disc. The installation method and diffuser sizes shall be as specified on the project drawings. Installation shall either be with an aluminium reducer and galvanised steel L-suspension or galvanised steel connection box complete with volume control butterfly damper.

The connection box shall be of the flat design with connecting spigots, include flange bore holes for suspension and fasten diffusers centrally. Diffusers shall be to a colour as specified by the Engineer. Alternatively, adjustable radial outlet diffusers shall be comprise of low outer air outlet casing, shaped visible surface, built in sheet steel radial vanes, built-in diaphragm and fastening screw. The discharge direction shall be adjusted by the rotation of a vertically movable guide ring. The guide ring shall be adjusted with two opposite cams on the inner ring. The shaped visible surface shall either be square or circular as specified on the project drawings.

Variable twist outlet diffusers shall comprise of an outer cylinder with round exit, fixed diaphragm, swirl cylinder with core chamber and static twist vanes. The latter diffuser types shall be manually adjustable. The diffuser shall connect to round ducting with a round tube and sleeve and to rectangular ducting with a suitably sized spigot. A connection box shall be used for installation if so specified on the project drawings. All diffusers shall be to a colour as specified by the engineer. Diffusers shall be installed at the locations where indicated on the project drawings.

The Contractor shall install insulated flexible ducting of length not exceeding 1.5m and of the same diameter as the diffuser, extending from the supply duct to the diffuser. Spigots shall be attached to the ducting and sealed with silicon sealer around the outer perimeter of the joint. Flexible ducting shall be strapped to the diffuser and spigots with steel straps to form an airtight connection. Alternatively, where indicated on the project drawings, diffusers

shall be "hard" connected to ducting with rivets or taper screws and sealed with silicone sealer to form an airtight connection. All diffusers shall be capable of meeting the discharge pattern and throw requirement as set out on the project drawings.

4.1.2.10.5. Volume control dampers

Volume control dampers shall be of the opposed multi-blade damper (OBD) type or alternatively be of the butterfly-valve type suitable for use in circular ducting. Volume control dampers shall be installed in ducting where indicated on the project drawings.

The Contractor shall balance the ducting system after installation and set the required flow rates to the various air terminals as specified on the project drawings. The Contractor shall test, balance and adjust the duct system to the requirements of SANS 10173: 2003, Section 8. All dampers, whether it is an OBD or a butterfly valve, shall in all cases comply with requirements of SANS 1238, Section 6.5.

The damper frames and blades shall be constructed of galvanised mild steel, assembled with galvanised bolts, nuts and washers. Extruded aluminium blades shall also be acceptable. Blades shall have a mill, anodized or epoxy powder finish. All volume control dampers shall have manually quadrant operation. Dampers shall be gear operated. Dampers creating unacceptable vibrations and noise levels will be rejected and will need to be replaced at the Contractor's expense.

4.1.2.10.6. Fire dampers

Fire dampers shall be installed according to the manufacturer's and SANS requirements and recommendations. Fire dampers shall be located where indicated on the project drawings. Fire/smoke control dampers shall in all instances comply with the requirements of SANS 193 as amended and shall bear the SABS mark with proven low leakage in the closed position. Each fire damper shall be clearly marked as per clause 5 of SANS 193. Fire dampers shall have at least a 2-hour resistance rating when tested in accordance with SANS 193.

Fire dampers shall be flanged both sides, and an access panel shall be provided in the ducting at each fire damper, preferably on the upstream side of the damper. The open or closed status of the damper shall be clearly indicated outside the casing for inspection purposes. Fire dampers shall be actuated by means of an electrical solenoid (power on: damper closes), when specified. A fusible link shall always be incorporated in the assembly to provide normal closure in the event of increasing temperature within the duct. Actuation by means of electromagnets (power off: damper closes), will not be accepted. Solenoids and electrical actuators shall be provided within an enclosure. Open electrical connections shall not be accepted.

Each fire damper shall be wired to the switchboard with a LED signal to show if the damper has been closed. Alternatively, a red LED shall be installed in the ceiling below each fire damper to indicate closure of damper. All fire dampers shall be clearly identified on a synoptic drawing at the control board as to indicate the installed position of each fire damper in the controlled area. Labels shall be installed on the ceiling grid below all fire dampers indicating their positions and reading: "Fire damper above".

Dampers shall be sized so that the nominal free air area when in the open position is not less than the connected duct free air area. Fire dampers shall be installed as to form part of a continuous barrier to passage of fire when in a closed position. Where a fire damper cannot be fitted immediately adjacent to the fire wall, the section of ducting between the damper and the wall shall be of at least the same metal thickness and fire rating as the damper casing. Dampers shall be self-supporting in case of duct destruction due to heat. Care shall be exercised that the supporting frame be installed so that the closing device is accessible.

Sheet metal sleeves shall be provided for housing the fire dampers where fire dampers are mounted in walls. These sleeves shall be built into the walls by the Building Contractor. Retaining angles shall be installed on the four sides of the fire damper sleeve on both sides of the wall. The angles shall be fastened to the sleeves only, and not to the

wall. The retaining angles shall lap the masonry by a minimum of 25 mm around the entire opening.

Table 6: Recommended minimum angle sizes for Fire Dampers

Largest Dimension of Fire Damper	Angles
Up to 1 200 mm	38 x 38 x 3,2 mm
1 200 mm to 1800 mm	44 x 44 x 3, 2 mm
Over 1 800 mm	51 x 51 x 4,8 mm

Clearance shall be provided between the sleeve and the masonry opening on the top and at the sides of the fire damper to allow for expansion. Allow a gap of 1 mm for each 100 mm of sleeve width or depth, but the gap shall no exceed 15 mm. All fixing and installation materials, i.e. bolts and nuts, rawl-bolts and mortar works shall be as per fire damper manufacturer's specification and shall not affect the fire rating of the fire damper installation. Combustible materials such as plastic or similar rawl-bolts and plugs are not permitted.

4.1.2.10.7. Filters

All rooftop package units shall be fitted with a primary pleated filter, mounted at the location where indicated on the project drawings. Frames and filters shall be constructed in such a manner that the passage of unfiltered air is prevented. Gaskets shall be provided between filters and filter holding frames to prevent the bypass of unfiltered air. Primary filters shall slide into the filter holding frame and shall easily be removed without the need to destruct the ductwork to which the filter holding frame is fixed. Each filter bank shall be supplied with an identification label stating type of filters, quantity of filter elements, model numbers and all other information necessary for re-ordering filter material. Filters shall be adequately protected against dirt during construction and shall not be operated until the system is thoroughly cleaned.

4.1.2.10.8. Primary filters

Primary filters shall be of the 50 mm pleated washable panel type. The media shall be synthetic and shall be of the self-supporting type. The media shall fit into and extend to seal all round in the panel frame to ensure that no air bypasses the media. The filter outer panel frame shall be of galvanised steel. All filter accessories including the channel filter holding frames and clips shall be standard products of the filter manufacturer. Filter holding frames shall be manufactured from stainless steel. Filter holding frames shall be bolted or riveted together, where necessary, and shall be suitably reinforced in larger arrangements to withstand all possible operating conditions. An airtight seal shall be provided where filter holding frames are joined together. All metal parts shall be sufficiently protected against corrosion.

Primary filter panels shall fit into channel holding frames with sealing gaskets located between filter panel and channel holding frame. Where the channel holding frames are located on the downstream side of the filter, at least two spring loaded clips shall be used to ensure a positive seal against the edge gaskets and to keep filter panel in place. Where the channel holding frames are located at the upstream side of the filter, at least four spring loaded clips shall be used. All clips shall be from stainless steel. The primary filter shall be of filtration class G4 have an average ASHRAE arrestance of 90 %, SABS tested. The dust holding capacity shall not be less than 150 g per square meter. The initial (clean) and final (dirty) resistance of the filter shall be 65 Pa and 250 Pa respectively.

The above-mentioned features shall be based on a rated face velocity of 2.5 m/s.

4.1.2.10.9. Sound attenuators

This part of the specification shall be read in conjunction with Section A, Sound Control. All rooftop package units shall be supplied with sound attenuators installed as indicated on the project drawings. All sound attenuators shall be off type. If sizes are not specified, sound attenuators shall be selected to comply with the noise levels as specified in Section A.



4.2. Hot water installations

4.2.1. Preface

This specification details the equipment constituting the hot water generation plant viz. hot water storage vessels, expansion vessels, heat pumps, inline heaters, circulation pumps, supply (feed) pumps, copper piping, valves, fittings, and measurement & control instrumentation to allow for the full operation of the system. Design criterion shall be as specified in the project specification: Site conditions, hence, equipment shall be derated to produce specified capacities. The hot water generation installation in general shall be in accordance with SANS 10142-1-2003, The wiring of premises Part 1: Low-voltage installations, and SANS 893-2-2013, Part 2, The control of Legionella in water systems.

4.2.2. Heat pumps

Heat pumps shall be selected to supply hot water at the rate specified and at project site conditions provided. Heat pumps shall be de-rated for site conditions. All switches, control lights and monitoring points shall be installed in one box in each machine.

The water temperature leaving the heat pump shall be constant and shall be controlled at 60 °C with a fluctuation tolerance of plus/minus 1°C. The maximum condensing temperature of the compressor shall not exceed 55 °C. Heat pumps shall be coupled in such a way that they shall not stop and start intermittently and shall not run for less than 30 minutes at time.

Each heat pump shall be fitted with automatic evaporator defrost controls which shall be demand controlled as opposed to time clock operation. A manual reset head pressure control shall be fitted. Each heat pump shall be protected against loss of refrigerant and subsequent damage. Each heat pump shall provide a 220 V set of contacts in the event of any fault occurring internally.

Unit casings and drip trays shall be constructed in stainless steel. Condensers shall be constructed from copper or equal considering the operating conditions. Condensers shall be performance guaranteed against scaling for five (5) years. Where tube-in-tube condensers are offered, the water must flow in the inner tube and the hot gas in the annular space.

Heat pumps shall be able to operate down to -3 C ambient temperatures. Ambient temperatures of up to 50 C shall not adversely affect heat pump operation. An external bulkhead alarm light shall be fitted and shall be operated from the heat pump. Only machines having a 60 °C hot water COP of at least 3.6 at 15 °wb ambient will be considered.

Condensate pipes shall be suitably insulated so as not to allow moisture formation; plastic piping will be permissible. Heat pumps shall have integral water circulation pumps (unless specified otherwise). The heat pump units shall be supplied by a reputable manufacturer, having traded in South Africa for at least 10 years. Spares shall be freely available.

The refrigerant used shall conform to the Montreal Protocol and shall not be subject to the phasing out programme. Galvanized sheet metal ducting and weather louvres shall be installed where heat pumps are installed in plant rooms. Ducting and weather louvers shall comply with the same standard and performance specifications as air-conditioning and ventilation. Weather louvers installed for the purpose of air exhaust or intake to heat pumps shall have an open free area.

4.2.3. Hot water storage tanks

The tanks shall be designed for an operating pressure of 600 kPa. The tanks shall be manufactured by a reputable specialist manufacturer and shall be of the vertical or horizontal type with three or four legs. Load spreader plates, each 200 x 200 x 8 mm thick shall be mounted underneath each leg.

The domes shall be manufactured from mild steel. Material thickness shall be a minimum of 8 mm and shall be 76 mm where shown. All connections to the tanks shall be flanged. All connection sizes shall be a minimum of 45 mm. All hot water connections to hot water storage tanks shall be complete with a thermal lock. Connections shall be provided as indicated on the schematic layout.

The tank shall be pressure tested at the manufacturer to a pressure of 1,25 times working pressure measured at the top of the vessel. The pressure shall be maintained for twenty-four (24) hours without leaking and distortion. A Certificate of Compliance as issued by a Government Authorized Inspection Company shall be submitted with the tank. The certificate shall state that the tank materials, material thickness, welding procedures etc. are in full compliance with the specifications and statutory regulations, as well as stating the pressure test has been witnessed by the Inspection Company and found to be satisfactorily completed.

After manufacture the tanks shall be sandblasted and painted. Paint shall be applied immediately after sandblasting. The interior of the tanks shall be painted with an epoxy paint (twin pack) specifically formulated for hot-water tanks as recommended by the suppliers and as approved by the Engineer. Coating thickness, number of coats and method of application shall be as recommended by the suppliers and approved by the Engineer. Painting shall be done under supervision of the supplier of the epoxy paint and inspections shall be done in between coats of paint to ensure that layer thickness is even, that no misses have occurred and that no pinholes exist. All connections shall be painted to the outside surface of all fittings and inside bolt holes. An additional paint coat shall be applied to these connections.

On completion of the internal paint application, the manufacturer shall submit a certificate clearly stating that the coatings were applied under his supervision and complies entirely with his recommendations. Suitable gasket material shall be used to ensure that there is no crushing of epoxy on the flange faces. The outside of the tanks shall be coated with three coats of a self-etching primer containing a suitable rust inhibitor as recommended by the suppliers and approved by the Engineer.

The tanks shall be insulated with a 50 mm thick inorganic mineral fibre insulation with density of 60 kg/m3 and maximum thermal conductivity of 0,045 W/m°C. Insulation shall be strapped to the tanks. The tanks shall be cladded with 0,5 mm galvanised sheet-metal cladding. Suitable pressure safety valves shall be installed. The valves shall be set at 500 kPa. Discharge from these valves shall be piped to the nearest drain point in the plant room.

Air release valves and combination type pressure and expansion control valves shall be installed. Dial type thermometers shall be installed on each tank. The thermometer shall have a diameter of 100 mm and shall be able to measure temperatures between 0 °C and 150 °C.

4.2.4. Piping

All piping shall be Class 2 copper as per SABS 460 with capillary fittings. Piping shall be supported to the manufacturer's specifications and provision shall be made for expansion and contraction by installing suitable expansion loops. Pipe brackets shall be as approved by the Engineer.

Suitable provision shall be made for air venting, vacuum breaking and draining of hot-water piping. Full bore isolating ball valves, flow control valves, non-return valves, pressure gauges and thermometers shall be installed where indicated on the drawings. All valves and fittings shall be brass or other material as approved by the Engineer.

Thermometers shall be of the dial type with diameter 100 mm face and range 0 - 100 °C. Pressure gauges shall be of the dial type with diameter 100 mm face and range 0-1 000 kPa. Dielectric couplings shall be installed between dissimilar materials to prevent galvanic corrosion. Pipe supports shall be to the approval of the engineer and drawings shall be submitted for approval prior to installation on site.

Hot water installations

4.2.5. Insulation

All hot-water piping shall be insulated with 15 mm preformed extruded LDPE foam with quick seal zip. Thermal conductivity of insulation shall be not more than 0,045 w/m. °K. All piping shall be cladded with 0,5 mm galvanized sheet-steel. Pre-machined wooden blocks shall be used as spacers and as insulating material in brackets. Insulation material shall be installed hard-up to the wooden blocks.

4.2.6. Dielectric coupling

The main cold-water supply shall be galvanized steel piping while all the piping installed as part of this hot water generation installation shall be copper. Suitable dielectric couplings shall be installed to protect the entire system from galvanic corrosion where copper piping connects to galvanized steel piping.

4.2.7. Control valves

4.2.8. Control philosophy

The heat pumps shall be complete with it's own control panel, but remote indication shall be allowed for as indicated on the drawings. Heat pumps shall be started an d stopped by means of thermostats installed on the hot water storage tanks. Heat pumps & Inline Heaters shall be set to produce hot water at 60 °C. Moreover, the entire system shall be designed & programmed to allow for a control philosophy in harmony with SANS 893-2-2013, Part 2, The control of Legionella in water systems.

4.3. Vertical transportation (lift) installations

4.3.1. General lift specification

4.3.1.1. Compilation of operating and maintenance manuals

The Contractor shall be responsible for the compilation of a complete set of Operating and Maintenance manuals. All information shall be recorded and reproduced in electronic format and shall supply the end user and engineer with three sets of hard copies. Approval of the final Operating and Maintenance Manuals shall be a prerequisite for issuing of a Certificate of Practical Completion of the installation.

4.3.1.2. Procedure for submission of manuals

A draft copy of each Operating and Maintenance Manual shall be submitted to the engineer prior to safety inspection of the installation. Approval of the draft Operating and Maintenance Manuals shall be a prerequisite for commencement of the safety inspection in terms of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

The manuals will be reviewed and checked by the Representative/Agent and returned to the Contractor with comments, where necessary. The Contractor shall make the necessary changes and amendments to the manuals to incorporate the Representative/Agent's comments.

Development of Final Manuals

A final draft copy of each operating and maintenance manual shall be submitted to the engineer at least one week prior to commencement of Day 1 of testing on commissioning. This set of manuals will not be accepted without the contractor's verification of the information contained in the manuals and the professional language editing thereof.

The engineer shall return the manuals to the contractor, who shall make the final corrections. The engineer shall, however, not be responsible for the quality control on manuals. Approval of final operating and maintenance manuals shall be a prerequisite for issuing of a certificate of Practical Completion for repair of the installation.

After the engineer has approved the final operating and maintenance manuals, the contractor shall provide the engineer with seven (7) sets of the manuals. Approval of the final operating and maintenance manuals shall be a prerequisite for issuing of a Certificate of Completion.

4.3.1.3. Format of operating and maintenance manuals

Manuals shall be bound in hardcover lever-arch files with plastic coatings. The files shall be clearly labelled on the front cover, as well as on the back band, with the following information:

The title "Operating and Maintenance Manuals"
Name of the contract and contract number
The Contractor's name, address and contact telephone number and fax (logo optional)
Month and year in which the manuals are finally handed over to the Employer
Name of the end-user

Pamphlets and bound leaflets/booklets from suppliers or manufacturers shall be placed in plastic pockets. Drawings and diagrams larger than A3 shall be folded and placed in plastic pockets to be easily removed or stored. The sections of the manuals specified within the Table of Contents of the manuals shall be clearly partitioned. Cross-



referencing between drawings/diagrams and text shall be in a clear and consequent format. The Operating and Maintenance Manuals shall be supplied in English.

4.3.1.4. Operating & Maintenance Manual Table of Contents

The table of contents for the manuals shall appear on the second page and shall consist of the headings of the various sections in the manual and the relevant page numbers.

The table of contents shall essentially contain at least the following:

Introduction

a) Scope of the manual
b) General arrangement of the manual
c) Description of installation
d) Specifications

List of drawings and diagrams

Parts and components

Operating procedures

Maintenance

a) Purpose of maintenance
b) Preventative maintenance
c) Troubleshooting

Breakdown maintenance and repair

List of Appendices.

4.3.1.5. Description of contents

Introduction

The introduction shall contain at least the following:

Scope of the manual

A summary shall explain the scope of the contents.

General arrangement of the manual

A brief description shall explain the way in which the manual is arranged.

Description of installation

This section shall give a functional description of the complete installation covered by the manual, including all systems and/or functional units deemed to form part thereof.

Specifications

A summary shall be given of the specifications applicable to the particular part of the Contract.

Drawings and Diagrams

Mechanical flow diagrams (MFDs) and single line diagrams

Mechanical flow diagrams (for mechanical systems) or single line diagrams (for electrical systems) of the system and/or functional unit shall be included in the Operating and Maintenance Manuals for easy reference by the operators of the installation. Diagrams shall be drawn not only for parts of an installation that have been repaired, but also for the complete installation, including all the components.

Parts and Components

Equipment data sheets

A data sheet shall be drawn up for each piece of equipment and/or machine forming part of the installation and shall contain the following information:

a) Equipment tag number
b) Equipment description
c) Model/make/manufacturer
d) Supplier/Reconditioning details
e) Ordering details
f) Details of fixed components
g) Details of lubrication
h) Maintenance references (refer to supplier/reconditioning technical manual).

Technical equipment manuals

For each piece of equipment and/or machine forming part of the installation the following information shall be included in this section of the Operating and Maintenance Manuals:

The supplier or reconditioning manual and/or standards of operating and maintenance instructions; illustrated parts breakdown and/or group assembly drawings as agreed with the Representative/Agent; parts lists and data sheets, including all characteristic curves for machines indicating operation point, efficiency, power consumption, etc; calibration charts, and test certificates for hydraulic pressure tests, flame-proof grading, materials, non-destructive examinations, coating and lining details, etc.

Each detailed description shall be accompanied by a set of engineering drawings. From the drawings the functionality of each part or component used, as well as the special characteristics associated with the part or component shall be very clear.

Parts and components list

A detailed description shall specify all the parts and components used for the duration of the Contract. This description shall include new parts and components, as well as existing parts and components that have either been reconditioned or used as specified in the Contract.

The description shall state at least the part or component number, part or component name, the size of the part or component, an explanatory description, the quantity used, the material of which the part or component is made, the coating (if any), date of purchase, as well as any relevant remarks as to the application thereof.

Vertical transportation (lift) installations

Details of the manufacturer of the part or component shall also be listed. This shall at least state the name, address, telephone number, fax number and name of a contact person.

The supplier of the part or component shall also be stated and shall include at least the name, address, telephone number, fax number, name of a contact person and an alternative supplier (if available).

Drawings

Drawings shall contain a descriptive heading, an explanatory key and relevant comments. Drawings shall be done on a computer-aided design package approved by the Representative/Agent.

A compound drawing for all sub-assemblies shall clearly indicate how and where the various parts fit in the subassembly. The compound drawing shall be linked to the equipment data sheets and parts and components list and shall clearly specify the parts or components used, their model numbers, their sizes and the quantities used. The compound drawings shall also be accompanied by a short description explaining the workings of the subassembly, as well as the assembly of the parts or components to complete the subassembly.

Operating Procedures

The operating instructions shall be a step-by-step description of the manual start-up and shut-down procedure for every piece of equipment and/or process reconditioned, repaired or supplied with references to the MFDs. For automatic operation the operators shall be referred to the automatic control manual (if applicable).

The functioning of the installation shall be clearly described, using a flow diagram depicting the interrelationships among the various sub-assemblies. The sub-assemblies shall be described by descriptive drawings.

Each mechanical or process flow diagram shall contain at least a heading, relevant comments and a key.

Every sub-assembly shall also have its own flow diagram explaining the operation of the subassembly, as well as the application of each part and component. The application of the subassembly shall also be very clear. The flow diagram shall consist of at least a heading, relevant comments and an explanatory key.

A detailed description shall be given of all operational systems forming part of the installation, explaining the operation and functioning of the system and the number of operations personnel required for performing the operation successfully.

The preparations, which are required before the system can be operational, shall be clearly stated and explained. The operation tasks shall be clearly explained with reference to dangerous situations that might occur. Hazardous operations shall be explained in great detail and cover all the applicable safety precautions.

Maintenance

Purpose of maintenance

The maintenance process shall be explained, and the main responsibilities described.

Preventative maintenance

A preventative maintenance and lubrication schedule shall be included in this section. This schedule shall be in table format and shall include a summary of all the maintenance actions required for each different system and/or functional unit covered by this manual, in order to give a single summary of all routine preventative maintenance actions required for the complete installation.

Vertical transportation (lift) installations

The schedule shall indicate daily, weekly, fortnightly, monthly and yearly maintenance actions. A lubrication schedule summary shall also be included under this section. The frequency of routine preventative maintenance actions shall be indicated very clearly.

The Contractor shall provide the maintenance requirements as prescribed by the manufacturer. The type of maintenance shall be clearly indicated. The description of the maintenance to be performed shall include at least the part name, location of the part in either the assembly or subassembly, the model number, the quantity of the particular part or component to be maintained, the type of maintenance, and notes on the maintenance procedure.

A brief description shall accompany the maintenance schedule, indicating special tools to be used, maintenance and test equipment required for the test procedures. Any special tools necessary for maintenance shall be specified in terms of name, model, size, manufacturer, supplier (name, telephone number, fax number, contact person), coating (if any) and notes on the use of the equipment.

Remarks on the system readiness checks of each subassembly shall be explained in detail. Routine inspection and maintenance processes shall be described. It shall be very clear what needs to be done, how to perform the necessary task and any dangers that are present.

Troubleshooting

An explanation shall be given to assist the maintenance personnel in analysing and resolving malfunctions that might occur. Various scenarios with possible causes and rectification procedures shall be explained.

The scenarios shall be accompanied by drawings indicating the position of the part that is faulty. Each of these drawings shall have a heading, comments and an explanatory key.

Breakdown maintenance and repair

The Contractor shall describe the complete procedure to be followed in the event of a breakdown. It shall be very clear what the operating personnel should look for, how to eliminate any dangers due to the breakdown (e.g. electricity must be shut off in the event of problems with the wiring) and who should be contacted. The Contractor shall supply the names and telephone numbers of at least two contact persons who may be contacted in the event of a breakdown.

Repair instructions shall provide the maintenance personnel with detailed instructions for the removal and/or replacement of any item requiring replacement due to malfunctioning. Contact numbers shall also be given to assist maintenance personnel, should a breakdown occur.

The Contractor shall specify the actions expected of maintenance personnel in the event of a breakdown.

The Contractor shall also specify the testing procedures to be followed before the system can be put into operation again. Every procedure shall be described clearly, and all the potential dangers pointed out, as well as the precautions that have to be taken.

The testing procedures shall be accompanied by drawings illustrating the process to be performed. Every drawing shall have a heading, comments and an explanatory key.

4.3.2. General lift requirements

4.3.2.1. Intent of specification

The lift specification is intended to cover the complete installation of the lift plant. The minimum equipment requirements are outlined, but do not cover all the details of design and construction. Such details are recognized as being the exclusive responsibility of the lift contractor.

It is hereby acknowledged that neither the Principle Agent nor the Consulting Engineer invented or developed any part of the lift system, but have only made selections of capacities, speed, control systems, materials and finishes, as well as specified performance and installation criteria as may be applicable. In all cases where a device or part of the equipment is referred to in the singular, it is intended that such reference shall apply to as many devices as are required to complete the installation.

4.3.2.2. Standards and codes

All work shall be in accordance with the requirements of the SABS1545-1; SABS1545-2; SABS1545-5; SABS1545-10; SABS1543; "Specifications for Lifts, Escalators and Passenger Conveyors" and shall comply with the Occupational Health and Safety Act 85 of 1993 and current regulations of all other codes applicable to this work.

Moreover, equipment and materials shall be new and manufactured in accordance with EN-81 standards and approved by the local authorities having the appropriate jurisdiction. All equipment shall be provided by the same manufacturer.

4.3.2.3. Compliance with regulations

The lift installation shall be erected and tested in accordance with the following Acts and regulations:

a) The latest issue of SABS 0142: "Code of Practice for the Wiring of Premises"
b) The Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended,
c) The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority
d) The Fire Brigade services Act 1993 Act 99 of 1987 as amended
e) The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as emended
f) The Post Office Act 1958 (Act 44 of 1958) as amended
g) The Electricity Act 1984 (Act 41 of 1984) as amended
h) The Regulations of the local Gas Board where applicable

4.3.2.4. Work executed by other trades

If the lift contractor is not the main contractor, then the following work shall be executed by other disciplines under the main contractor. Regardless, the tenderer or lift installer shall co-ordinate this work with the engineer and the main contractor prior to exclusion:

a) Structural: Lift shafts, pits and motor rooms complete with all access doors and openings as per drawings. Concrete slabs with up-stands constructed for the lift machine foundations at the top of each lift shaft. Waterproofing of lift pit after setting of all pit supporting steels and rail inserts. Pit drains or auto draining pumps as required.
b) Electrical: Provision of a 3-phase, 4-wire, 50Hz 400/231V permanent power supply to a surface mounted distribution board in each machine room in the position shown on drawings. The distribution board will also be equipped with a separate circuit breaker for the shaft and car lighting as well as a separate circuit breaker with

earth leakage protection for the socket outlet in the pit and on top of the lift car.

c) Machine room shall be equipped with sufficient lighting, ventilation and socket outlets as required by the relevant standards and regulations.
d) If applicable, the standby power supply will be sized to run a predetermined number of lifts simultaneously.
e) The normal/standby power indicating circuitry shall include, a delayed normally closed potential free contact at 220 Volts/5 Ampere of the emergency power change over switch gear shall be wired to the lift machine room/s and shall be terminated in a suitable junction box. All wire ways or 25mm minimum conduit required to inter-link the lift motor room for the sequencing of lifts in multi-group installations shall be included under this section.
f) A suitable pit sump pump shall be designed, supplied, installed, and commissioned by the contractor.

4.3.2.5. Co-ordination

A fixed sequence of operation is required to properly install the complete lift system due to the nature of the installation. Hence, the work shall be closely scheduled in order not to delay the entire project.

The lift contractor shall familiarise himself with the requirements of other trades and shall examine the plans and specifications covering each of these sections especially where interface is necessary.

The lift space requirements shall be carefully checked with other trades to ensure that the equipment can be installed in the proper sequence in the space provided; this extends to include shaft dimensional tolerance.

4.3.2.6. Submittals

Layout and shop drawings

Layout drawings are required for all lift work, including car enclosure and landing entrance. Drawings shall show top clearance above crossheads and counterweight frames, machine room layouts with power requirements and heat release data, location of all equipment on tops of cars, overhead beams and elevations, and reactions which will be transmitted to the building structure during normal operation of lifts.

Shop drawings are required for car enclosure, landing entrances and signal fixture work showing construction, finish and fastening details. Furthermore, shop drawings shall clearly show the motor room construction detail, shaft construction detail including all the required internal supporting beams, pit dividing walls for multi-lift shafts and pit sump pump drains. Composite shop drawings shall be submitted for areas, which require close co-ordination with the work of the different trades.

All special equipment and fixture face plates shall be submitted for approval prior to fabrication and delivery on site. Drawings, samples, or brochures shall be submitted for each type of fixture and shall be co-ordinated with the architectural drawings. Final design and material proposed for fixture face plates and special equipment shall be approved by the engineer.

Samples

All exposed materials and finishes shall be submitted to the engineer for approval in sample form. The Lift Contractor shall provide such samples as may be called for and the engineer may reject all materials or workmanship not corresponding with the approved samples. All approved samples shall be held in safe keeping until such time as the work to which they apply has been completed and accepted.

4.3.2.7. Test certificates and inspections

The lift contractor shall carry out all the tests and checks required in terms of the document SABS1545-10 Annex A

and / or B and issue the necessary certificate of compliance prior to acceptance of the installation.

The lift contractor shall completely test the lift equipment to demonstrate that the equipment is provided in compliance with the specification prior to completion of the installation. The total costs for these tests shall be included in the tender amount.

The lift contractor shall make arrangements for such tests and shall give at least 72 hours written notice to the engineer before commencing the test.

In the event of the plant, equipment, or installation not passing the test the engineer shall be at liberty to deduct from the contract amount all reasonable expenses incurred by the employer and / or the engineer in attending the test.

Whenever any installation or equipment is operated for testing or adjusting as provided for above, the contractor shall operate the entire system for as long a period as may be required to prove satisfactory performance at all times in the occupied space served by that system until the system is handed over.

The contractor shall provide all labour and supervision required for such operation and the employer may assign operating personnel as observers, but such observation time shall not be counted as instruction time.

After completing the installation or system, all equipment shall be tested, adjusted and readjusted until they operate to the satisfaction and approval of the engineer.

The contractor shall submit certificates of tests carried out to prove the efficiency of all equipment, as well as certificates to be obtained from all relevant authorities, and statutory bodies.

4.3.2.8. Application to Department of Labour

The lift contractor shall submit all the necessary drawings and information to the Regional Director of the Department of Labour and shall submit the necessary application for the erection and use of the lifts, access goods lifts, and escalators and in harmony with the Occupational Health and Safety Act.

4.3.2.9. Guarantee

All for a twelve (12) month period of unpaid maintenance of the installation after the first delivery of the installation.

During this period the lift contractor shall maintain the lift installation as per the requirements of the Occupational Health and Safety Act. This maintenance shall include systematic examinations, adjustments and lubrication of all lift equipment. Electrical and mechanical parts shall be repaired or replaced whenever it is required to maintain optimum performance without additional cost to the employer; unless the condition was caused by misuse or vandalism of the installation or due to acts of God.

The work under this section shall be performed by competent, qualified personnel under the supervision and in the direct employment of the lift contractor and shall not be transferred to any non-affiliated agent. Contract maintenance and repair work shall be done during normal working hours and the lift contractor shall further provide emergency call-back service twenty-four (24) hours a day, seven (7) days a week.

During the guarantee period the employer will invite tenders for the comprehensive maintenance of the lift installation, which shall commence after the final delivery has taken place i.e. after the twelfth month guarantee period is over and all defects are corrected.

Vertical transportation (lift) installations

4.3.2.10. Materials and workmanship

All work shall be executed to the highest standards and to the entire satisfaction of the engineer who shall interpret the meaning of the contract document and shall have the authority to reject any work and materials, which, in his judgement are not in full accordance with the specifications. All condemned material and workmanship shall be replaced or rectified as directed and approved by the Representative/Agent.

All work shall be executed in a first-class manner by qualified tradesman.

The contractor shall be fully responsible for his work and shall replace any of the work which may be damaged, lost, or stolen. The contractor shall protect the building and its contents against damage by him, his employees or sub-contractors and shall make good any damage thereto.

The contractor shall indemnify the employer of all liability for damages arising from injuries or disabilities to persons or damage to property occasioned by any act or omission of the contractor or any of his sub-contractors, including any and all expenses, legal or otherwise, which may be incurred by the employer or engineer in the defence of any claim, action or suit.

The contractor shall warrant that the materials and workmanship shall be of the highest grade, that the equipment shall be installed in a practical and first-class manner in accordance with the best practices and ready and complete for full operation. It is specifically intended that all material and labour which is usually provided as part of such equipment as is called for and which is necessary for its proper completion and operation shall be provided without additional cost whether or not specified.

The contractor shall thoroughly acquaint himself with the work involved and shall verify on site all measurements necessary for proper installation work. The contractor shall also be prepared to promptly provide any information relating to his own work as may be necessary for the proper installation work and shall co-operate with and co-ordinate the work of others as may be applicable.

The contractor shall inspect and verify that the existing power feeder system is compatible with the equipment offered and any changes or upgrading of the electrical supply shall be brought to the attention of the engineer.

Material and equipment damaged in transit shall be replaced with undamaged material.

All components and their respective adjustment, which do not form part of the equipment installation work, but influence the optimum and safe operation of the equipment shall be considered to form part of, and shall be included in the contractor's scope of works.

All control equipment and serviceable items shall be installed and positioned such that they will be accessible and maintainable.

The contractor shall make sure that all safety regulations and measures are applied and enforced during the installation and guarantee periods to ensure the safety of the public and the end user.

The contractor is to include for all scaffolding required to complete the scope of work.

4.3.2.11. Imported equipment

This equipment will not be subject to fluctuations in the rate of exchange. Hence, the contractor may choose to be protected against fluctuations in the rate of exchange on imported equipment. The following conditions will apply:

a) Materials offered ex-import: Annexure A, which forms part of this tender document, must be completed by the Contractor.

Vertical transportation (lift) installations

b) Any fluctuations in the rate of exchange will be for the account of the employer and shall be calculated from a date seven (7) days prior to the date of the Contractor's tender to a date seven (7) days after receipt by the contractor's bank of the negotiable bill of lading or the exporter's invoice, provided this latter date is not later than 30 days after the date of payment. Thereafter, fluctuations in the rate of exchange shall not be for the account of the employer.

4.3.2.12. Brochures

Detailed brochures of all equipment offered, including the control, drive, door operator, call buttons and signals, remote monitoring station, intercoms and emergency dial-out system shall be presented together with the tender documents.

4.3.2.13. Performance criteria and descriptions

The contractor shall confirm that the lift equipment performs in accordance with the contract documents, prior to practical completion, and shall provide documentation to substantiate accordingly.

The lifts shall be adjusted as required to at least meet the following performance requirements within a 10% tolerance:

Ride quality

Acceleration / Deceleration (max)	: 1.0 m/s^2
Jerk Rate (max)	: 2.0 m/s^3
Stack changes	: nil
Shooting Off or Rollback	: nil
Car Noise (max)	: 56 dB (A)
Car Noise (mean)	: 52 dB (A)

Lateral Quaking ISO X & ISO Y (Velocity m/sec to Time / Drive Curve)

ISO Y = Side to side movement
ISO X = Front to back movement

Peak to peak	: max 15 milli-g
Peak to peak	: mean 5.0 milli-g
RMS	: mean 1.7 milli-g

Vertical Vibration ISO-Z (Velocity m/sec to Time / Drive Curve)

Peak to peak	: max 10 milli-g
Peak to peak	: mean 3.0 milli-g
RMS	: mean 1.2 milli-g

Vertical Vibration Start and Stop Kicks

Peak to peak	: max 18 milli-g

Levelling Tolerance

Re-levelling	: max. 3 mm
Levelling Accuracy	: max. 3 mm

Vertical transportation (lift) installations

Cycle Time

Times specified are for a typical floor-to-floor run of 3400 mm with a balanced load.

Door close to car start : max. 0.8 sec

Rated speed to car start / stop:

>1.6 m/s; <5.0 sec
1.0 m/s; 5.6 sec
0.63 m/s; 10.5 sec

Table 7: Lift Door Dwell Times

Passenger Conditions	Stops for car call	Landing call
First Passenger	2.0 sec	3.0 sec
Succeeding Passengers	1.0 sec	1.0 sec

Table 8: Lift Door Open and Close Times

Door Opening	Type	Door open	Door closed
900 mm	C/O	max. 2.2 sec	max. 3.0 sec
1100 mm	C/O	max. 2.2 sec	max. 3.0 sec
1200 mm	C/O	max. 2.4 sec	max. 3.2 sec
1400 mm	C/O	max. 2.7 sec	max. 3.5 sec

Door Pre-Opening

Max. 3/4 open when lift is within 5 mm of floor level.

4.3.2.14. Detailed lift requirements

General Requirement

Tenderers shall offer lifts designed to comply with the technical requirements and as specified. The equipment offered shall be suitable for continuous operations under the following conditions:

Electricity Supply

3-phase, 4-wire, 50HZ, AC with nominal voltage of 400/231V varying between 95% and 105% of the nominal voltage.

Ambient Air Conditions: see site conditions of project specification

Altitude of site: see site conditions of project specification

All lifts shall comply with the latest edition of SABS1545-1 and SABS-1545-2 specifications.

Copies of ISO9002 accreditation shall accompany the tenders submitted.

Vertical transportation (lift) installations

The lift installation shall comply with the requirements of the Occupational Health and Safety Act, Act 85 of 1993 as amended.

Table 9: Description of Lift System

Description	Simplex
Lift number	L1
Stop	G, 1

Vertical transportation (lift) installations

Technical Requirements for Group-1

Table 10: General Lift Requirements

Description	Detailed Requirements
Number of Units	1
Type of Lift	Goods & Passenger
Load	1250 kg
Speed	1.0 m/s
Lift Numbers	L1
Total Travel	3m
Number of Stops	2
No of Openings	3 vertical in line
Car Entrances	One per Lift
Floor Designation	G, 1
Pit Depth	1 650 mm
Machine Room Dimension	1 900mm high (MRL)
Pit Service Platform	N/A
Extended Buffers	N/A
Access below Pit	N/A
Counterweight Safeties	N/A

Table 11: Lift Machine Requirements

Description	Detail Requirements
Drive	Traction, VVVF
Machine	Geared
Roping	1:1 or 2:1
Automatic Self-Leveling	Yes, As Specified
Compensation	Yes, As Specified

Table 12: Lift Control Operation

Description	Detail Requirements
Operation	Simplex Automatic Operation
Up/Down Peaks	Yes, As Specified
Fire Control	Home to ground, as specified
Fireman's Floor	Ground Level
Emergency Power Control	Ground and Level 01 as Specified
Evacuation Floor	Ground Level
Independent Control	Yes; as Specified
Load Measuring	Over Load, Landing Call By-pass, Anti-Nuisance

Table 13: Lift Landing Equipment

Description	Detail Requirements
Landing Doors Opening	1 100 x 2 100mm Clear Opening,

Vertical transportation (lift) installations

Door Operation	Single Speed, Centre Opening
Door Control	VVVF Motion Control
Position Indicator	Digital Indicators on Main Landing (Ground Level) Only
Waiting Lanterns	Yes, As Specified
Gongs	Yes, As Specified
Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button
Direction Arrows	Yes, As Specified – Above all Landing Entrances

Table 14: Lift Car Equipment

Description	Detail Requirements
Number of COP's	One per Lift
Protection Drapes	No
Position Indicators	Yes, As Specified on COP
Direction Arrows	Yes, As Specified on COP
Intercom	Yes, As Specified – Master Station - Security Control
Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button
Door Detectors	Yes, As Specified – Ultrasonic Proximity Detectors
Signage	Yes, As Specified
Emergency Light	Yes, As Specified
Braille Call Buttons	Yes, As Specified

Table 15: Lift Shaft Dimensions and Equipment

Description	Detail Requirements
Shaft Dimensions	As Per Drawing
Head Room	As Per Drawing
Pit Sump	As Per Drawing
Shaft Lighting	Yes, As Specified

Table 16: Lift Car Enclosure

Description	Detail Requirements
Car Dimensions	As Per Drawing
Car Clear Internal Height	As Per Drawing
Clear Door Opening	As Per Drawing

Table 17 Lift Finishes

Description	Detail Requirements
Fixture Faceplates	Minimum 3mm thick Stainless Steel (SST) with bevelled edges and a brushed finish
Car COP Faceplates	Full height next to car door SST with brushed Finish
Car Side Walls	SST – Brushed Finish
Car Rear Wall	SST – Brushed Finish
Car Front	SST – Brushed Finish
Car Floor	Normament – Principal Agent to Specify Colour
Car Ceiling	High Quality Suspended Ceiling with recessed Fluorescent Luminaires

Hand Rails	At a height of 900mm above car floor on sides and rear of car
Car Doors	SST – Brushed Finish
Landing Doors	SST – Brushed Finish
Landing Frames	SST – Brushed Finish
Landing Signals	Fitted above landing entrances

4.3.3. Lift equipment requirements

4.3.3.1. Traction drive

The brake shall be spring applied and electrically released by direct current. There shall be two shoes actuated by compression springs. The brake shall have sufficient power to hold the car at any landing with the normal amount of counter balancing and with at least 150% of rated load. The brake shall operate in the event of a power failure or any other safety device designed to stop the lift.

An effective sound reducing material shall be installed between the bed-plate of an overhead or basement driving machine and the beams, the structural concrete slab, shaft structure or the up-stands. The driving machine and motor shall have sufficient capacity to operate the lift continuously at 100% of rated speed in both directions without overheating or hunting during levelling.

The lift machinery shall operate silently and without vibration. The lifts shall constantly operate and shall be maintained at noise levels not exceeding 56 DB (A). The noise level shall be considered acceptable if it does not exceed 56 DB (A) measured on the landing and in the car enclosure.

Provision shall be made for a safe method of moving the car by hand in the event of a power failure and all the necessary equipment required to carry out this task shall be mounted neatly in the motor room and shall remain on site at all times.

The Contractor shall supply and install suitable structural steel beams with bearing plates for the mounting of the lift machine on the motor room floor, as well as supporting beams or deflector and secondary pulleys, as required. In the cases where machines are located below, the diverter sheaves shall be secured to the floor slabs and not to the overhead slabs, to prevent the transmission of vibration to the structure.

Anti-vibration mountings shall be provided to minimise the transmission of vibrations to the structure and to ensure the silent and smooth operation of all the equipment. Tenderers shall describe the methods to be used to achieve the desired results.

4.3.3.2. Controller

Programmable solid-state operation and motion controller shall be provided to control the operation, the starting, the stopping and the speed of the lift motor and also to apply the brake automatically if any of the safety devices operate or the power fails.

All solid-state controllers shall be enclosed in ventilated sheet metal cabinets with integral blowers. All power resistors and heat generating transformers shall be mounted in separate enclosures if necessary, to maintain the specified control panel internal temperature. The control cabinets shall be totally enclosed, vermin and insect proof, drip proof and dust proof to at least class IP42 of IEC 144.

Contacts breaking heavy currents shall be provided with magnetic blowouts and arc chutes. Contact surfaces shall be of silver-to-silver except those for heavy currents, where carbon-to-silver or carbon-to-copper contact surfaces may be used.

All terminals of the machinery and control gear shall be marked with distinctive letters or numbers, and corresponding markings shall appear on the contract drawings. All controllers shall be generic manufactured, assembled and supplied.

As a standard, PLC lift controllers shall not be accepted. However, if these controllers are considered a generic product by the Representative/Agent and are able to meet the requirements of the specification, PLC controllers may be offered as an alternative if the following requirements are met:

Documentation stating that the control system has been subjected to extensive testing and is verified as safe, reliable and fully complies with SABS 1545 and all national, local regulations and by-laws. If requested by the Representative/Agent, the Contractor shall provide the Representative/Agent with a full set of back up software / software module and all associated maintenance related documentation including principle diagrams.

Documentation from the PLC supplier is provided to verify the age of the model used, the date it is expected to be removed from the production line and the period the PLC supplier will guarantee parts and repairs. The Contractor shall verify that the PLC supplier is willing to maintain under a fully comprehensive agreement, the entire PLC unit(s) for at least 20 years.

4.3.3.3. Control system

The control system shall be capable of constantly producing the performance criteria specified.

The associated control equipment for each control system shall provide smooth acceleration and deceleration. In conjunction with the controller and machine, the system shall consistently provide the performance times specified.

The drive control system shall be capable of decelerating the lift to stand still without a "levelling in" or "creeping in" phase. Only lifts with direct floor approach capabilities shall be accepted.

The motor drive unit shall provide a smooth lift performance including acceleration, steady velocity and deceleration plus levelling to various floors within the time allowance and levelling tolerances specified. This performance shall be consistent under all conditions of loading and in either direction of travel.

The motor drive unit shall be equipped with all necessary monitoring circuits to maintain a safe and reliable operation. These shall include but are not limited to the monitoring of the load, direction of rotation, speed, supply voltage, and operating currents.

The hoist motor shall be provided with a thermostatically controlled blower if necessary, to dissipate the heat in order to maintain the equipment within the specified operating temperature range. The control system shall provide a smooth acceleration and deceleration with the levelling accuracy at all landings from no load to full rated load in the lift. This smooth operation shall be obtained for all lifts under stable conditions. A maximum of 0.8 seconds shall be allowed from door close to car start.

The equipment shall be designed to operate at plus or minus 15% of normal feeder voltage and plus or minus 5% of feeder frequency without damage or interruption of lift service.

The control system shall be designed to operate the hoist motor continuously at 100% of rated speed and at 100% of rated load in both directions without overheating or hunting.

4.3.3.4. Machine room indicators / rope markers

Monitor and keyboard or handheld testing instruments for commissioning, re-commissioning and fault analysis of the lift control system shall be provided and shall remain on site at all times. Each group of lifts shall be supplied



with its own monitor and keyboard or testing instrument.

As each lift travels through the lift shaft, a main hoisting rope marker shall indicate its floor level position by means of a mechanical selector attached to the machine control indicator. This indicator shall operate independently to the lift control and shall not be dependent on the lift supply for its operation.

The lift control system shall be capable of generating error/fault reports. Error logs for each lift showing at least forty (40) of the most recent faults shall be accessible. The error log shall clearly indicate the type of fault, lift number, date and time the fault occurred.

4.3.3.5. Safety gear and governor

An over-speed governor, driven directly by an independent rope attached to the car, shall be provided in the motor room and shall be designed to operate the safety gear fitted to the car when the speed of the car, due to any cause, exceeds its normal maximum speed by more than a predetermined value. The tripping speed of the governor shall be selected with due regard to the rated speed. The tripping speed shall be approximately inversely proportional to the rated speed and shall for rated speeds ranging from 0,25m/s to 5,0m/s not exceed the rated speed by more than 40% and 20% respectively.

The safety gear shall be arranged to stop the lift whenever excessive descending speed is attained. Means shall be provided to cut off power from the motor and apply the brake prior to application of the safety gear. The safety gear shall be released by moving the lift in the "UP" direction.

The governor rope system, including the governor and tension sheave, shall be arranged so that the carrier shall not be released due to system dynamics when the lift is subjected to an emergency stop in the "UP" direction. Car and counterweight safety gear shall be provided with a switch to cut off the power from the motor and apply the brake, if the safety gear applies without tripping the governor.

Rope guards and an electrical contact to monitor the rope stretch shall be provided on the governor tension sheaves.

4.3.3.6. Rope guards

Rope guards shall be used to cover machine sheaves, secondary or deflector sheaves and governor sheaves to cover moving sheaves and ropes. Guards are also required on rope hole openings in the machine room and secondary level floors to prevent objects from falling into the lift shaft. Guards shall be provided in secondary level floors where ropes and tapes or selector drives pass through to prevent accidental contact.

4.3.3.7. Motor room ventilation and lighting

The Lift Contractor must ensure that the lighting levels and ventilation of the machine room provided are sufficient. If any alterations have to be made the lift contractor must inform the engineer in writing, to ensure correction. Where the installation is a machine room less configuration this requirement shall be taken to mean the shaft where the machinery is located.

4.3.3.8. Machine data submittals

The contractor shall supply all the relevant machine data to ensure the correct power feeder design, including, but not limited to the following:

Table 18: Lift Machine Details Submittal

Description	Offer

Vertical transportation (lift) installations

Lift numbers	
Capacity / load (kg):	
Speed (m/s):	
Supply Voltage (volts):	
Supply Frequency (Hz)	
Number of phases:	
Motor rating (kW):	
Roping:	
Full load UP acceleration (Amps):	
Full load UP nominal speed (Amps):	
Machine heat release per car (kW):	
Power Factor (%):	

4.3.3.9. Lift shaft requirements

In terms of SABS 1545 (Parts 1 and 2) provide the necessary rope or selector tape guards in pit areas and landing door unlocking devices on all landings.

Provide safe Working Platforms in pits with depths in excess of two (2) metres and if necessary, at the top of the shaft to create sheave-room platforms. The working platforms shall comply with SABS 1545 (Parts 1 and 2) safety requirements pertaining to the depth/height and free space of these areas.

In terms of SABS 1545 (Parts 1 and 2), shaft lights are to be provided and installed by the Contractor.

4.3.3.10. Car and counterweight guide rails

The guide rails for the car and counterweight shall consist of planed steel tees with milled, tongued and grooved joints. Metal splice plates shall be of a suitable length and fixing brackets for guide rails shall be provided at intervals not exceeding 2,4m. Guide rail fixings shall be located in such positions that when the car is at any landing, the guide shoes on the car will be at a fixing bracket. The bottom end of each guide rail shall be provided with a sole plate fixed to the pit floor.

All brackets shall be secured by means of approved expandable concrete anchor bolts of adequate size and length.

4.3.3.11. Hoist and governor ropes

The ends of the hoist ropes shall be properly secured to the car and counterweight cross-head or to the dead-end hitch plates on 2:1 roping, with adjustable rope shackles having approved sockets. Screw adjustment shall permit equalisation of the tension in all ropes.

The lift car hoisting rope attachment / hitch shall be suitably vibration isolated to prevent rope noise from being transferred to the car enclosure.

Governor ropes shall be in accordance with SABS 1545 (Parts 1 and 2) and the steel rope shall be specially designed for lift service. The two ends shall be securely fastened together at the lift and shall be attached to the safety operating mechanism. The governor rope shall pass over the governor sheave and over an approved tensioner sheave in the pit. An electrical contact shall be fitted to the pit sheave and shall stop the lift if the governor rope becomes slack or breaks.

Vertical transportation (lift) installations

4.3.3.12. Counterweight

Each lift shall be suitably counterbalanced for smooth and economical operation. Cast iron or steel sub-weights shall be contained in a guided structural steel frame. The counterweight shall be equal to the weight of complete lift car plus at least 40% of the rated load. The weights in the counterweight frame shall be balanced with the weight equally distributed across the width of the frame to equalise guide pressures. The sub-weights shall be welded or fastened together as necessary to prevent rattling.

Counterweight screen guards shall be provided at the bottom of the shaft to a height of 2150mm above the floor of the pit and approximately halfway up the shaft at the position where the car and counterweight pass each other.

4.3.3.13. Car and counterweight guide rollers or shoes

The car and counterweight guide rollers/shoes shall constantly provide the ride quality as specified in Section 3 clause 11 of this specification.

Guide Rollers

Each lift shall be provided with car and counterweight rollers guides. Each roller guide shall consist of at least three wheels with a durable resilient material, each rotating on ball bearings having sealed-in lubrication, assembled on a substantial metal base and so mounted as to provide continuous contact of all wheels with the corresponding rail surface under all conditions of loading and operation. The wheels shall run on three machined rail surfaces. The roller guides shall be properly secured at top and bottom on each side of the car frame and counterweight frame.

The roller guides shall run on dry guide rails. Sheet metal guards shall be provided to protect wheels located on the top of the car and the counterweight. The roller wheels for the car shall not exceed 500-rpm and the roller wheels for the counterweight shall not exceed 1000-rpm at rated speed.

Guide Shoes

If the speed and load nominated for a specific lift allows the use of guide shoes:

The lift shall be provided with car and counterweight spring loaded guide shoes. The spring tension shall be adjusted so as to maintain the lift in the centre of the rails and provide continuous contact with the corresponding rail surface under all conditions of loading and operation. The guide shoes shall be lined with a durable resilient material, which shall ensure a quiet and smooth ride. When oil buffers are attached to the bottom of the counterweight, additional guide shoes shall be installed on each side of the buffer cylinder frame.

The guide shoes shall run on lubricated rails. The guide rails shall be lubricated by a permanently mounted lubrication reservoir on top of the car and counterweight.

4.3.3.14. Electrical compensation

Sufficient extra hoisting kilowatt rating in the hoist motor, machine and motor generator capacity and control equipment may be provided so that effective electrical compensation for the weight of the hoist ropes and travelling cables shall be accomplished as the lift travels through the lift shaft.

4.3.3.15. Compensation cables

If electrical compensation cannot be achieved the following shall apply:

Compensating trailing cables or compensating chains encased in a synthetic sleeve (whisper flex) shall be provided.

Compensating cable restraining rings shall be provided in each pit and mounted on both the car and the counterweight buffer supports.

Compensation shall be fixed to the bottom of the counterweight and car in a position which shall allow the counterweight to remain balanced in the guides and exert equal pressure on each face of the guide at the four guide locating positions.

The fixing of the compensation to the car shall be accomplished by a vibration isolating compensation hitch.

Where compensating steel ropes are used for compensation, they shall be accompanied by a statically balanced compensation pit sheave and shall be mounted centrally between the guides.

4.3.3.16. Buffers

Suitable oil, heavy spring or polyurethane buffers shall be provided for the car and counterweight and shall be so adjusted that in the case of over-travel, no parts of the car or counterweight will touch the shaft ceiling and that the retardation of the car does not exceed the limits as laid down in the SABS 1545

Hydraulic buffers shall be so constructed and shall be installed to allow the fluid level to be checked easily. Easy access to the buffer for testing and maintenance purposes shall be possible without having to remove the counterweight pit screen. Energy dissipation type buffers shall have an electrical contact fitted to monitor the stroke (extended position).

4.3.3.17. Pit switches

Each lift pit shall be provided with watertight pit safety switches accessible from the entrance to the pits without the necessity of entering the pit and shall also be accessible from the pit while standing on the pit floor. The pit switch shall interrupt the power supply and apply the brake to hold each car so as to permit safe access to the pit. The pit switch shall be clearly distinguished from other switches that may be mounted in the pit area and the on/off position shall be clearly marked.

4.3.3.18. Stopping devices

Normal terminal stopping devices shall be enclosed in dust-proof enclosures for each lift. These devices, once operated, shall bring the lift automatically to a smooth stop at the terminal landing.

Final terminal stopping devices shall be positioned at the top and at the bottom of each lift shaft. A fixed cam securely attached to the lift shall operate these final limit switches. These limit switches shall be independent of any other stopping devices and shall positively open without the use of springs to cut off all power from the driving machine motor and brake. It shall prevent the operation of the lift in either direction. They shall be so located that they open at the time the lift or the counterweight engages the buffer.

4.3.3.19. Travelling cables

Travelling cables between the lift and the fixed lift shaft wiring shall be flexible and suitably suspended to relieve the strains in the individual conductors. All cables shall contain an approximately equal number of conductors, or shall have equal flexibility.

Travelling cables shall include two shielded pairs for each lift car to accommodate voice communication. The travelling cables shall be positioned in such a manner to eliminate the possibility of interference with the shaft information, selector tape or governor rope and all the necessary travelling cable protection shall be fitted to the

shaft wall and shaft trimmers to prevent damage to the outer cover during normal travel.

The travelling cables shall be neatly and adequately strapped to the side of the car enclosure and all the necessary protection shall be provided where the cables cross over metal extrusions.

Travelling cables for the counterweight shall comply with the requirements of this section.

Flat and round trailing cables shall be fixed and shall hang in accordance with the trailing cable manufacturer's requirements.

4.3.3.20. Electrical wiring and control communication

All low voltage and control communication cables shall be run in separate ducts, conduits and trailing cables. Car top terminal boxes of ample size and car top inspection control units shall be provided.

4.3.3.21. Automatic self-levelling

All lifts shall be provided with both a self-levelling and a re-levelling feature that shall automatically bring the lift to the floor landings within a tolerance of 3.0 mm under no load to full rated load conditions without hunting. Self-levelling shall, within its zone, be entirely automatic and independent of the operating device and shall correct over-travel and rope stretch. The lift shall be maintained level with the landing, irrespective of load and while loading and unloading.

4.3.3.22. Lift car construction and enclosure

The lift car shall be an assembly consisting of the sling, the platform and the cabin. The sling shall be constructed of rolled steel angle or channel sections bolted or welded together to form a rigid framework, which shall be suitably braced and reinforced to withstand the operation of the safety gear without permanent distortion.

The car platform shall consist of a 3mm thick mild steel plate or 20mm thick hardwood floor laid on closely spaced steel channel sections welded to a steel frame which in turn shall be laid on rubber pads in a structural steel frame. Load weighing devices shall be incorporated where specified.

The cabin shall be designed as a fully enclosed car with a flat roof and solid full height panels on the sides and the back. The cabin shall be securely fixed to its sling and platform in such a manner that the cabin is not subjected to strain in the event of an unequal distribution of load occurring over the floor area.

The entire car assembly, including the car frame and the car platform shall be constructed to operate free from objectionable squeaks or metallic sounds, comprising of a rigidly tuned resonance car frame and acoustically treated superstructure. The following features shall also be embodied in the lift car:

A continuous lighting system shall be provided along each side of the car. The lighting system shall consist of concealed, surface mounted, standard 2-lamp open fluorescent luminaires, providing an illumination level of not less than 200 lux at 1000mm above floor level. Fluorescent tubes shall be 1500mm, 58 Watt or 1200mm, 36-Watt, colour "Warm White". Tubes and control gear shall be of the switch start type and shall bear the SABS mark. The width of the lighting troughs shall be the same as the front return panels and shall be covered by easily removable low brightness diffusers, mounted in purpose made hinged frames.

One of the lamps in each trough shall be provided with an emergency battery/inverter unit by means of which the lamp will be operated for at least 60 min. in the event of a power failure. This lamp shall operate at full output under normal conditions.

Vertical transportation (lift) installations

Luminous car position indicator and "Up/Down"" travel indicators installed above the entrance doors.

Fixing clips for the attachment of canvas protective coverings which shall be supplied with the lift for the side and rear walls.

Silent running squirrel cage, centrifugal flow exhaust blowers for passenger and goods/passenger lifts shall be mounted to draw air into car enclosure when doors are open and through door side clearances when doors are closed. The blower shall be mounted on the car top, draw air from the car through the perimeter of the suspended ceiling and exhaust the air into the lift shaft. The fan shall without exception, be capable of delivering not less than 0.3 cubic meters of free air per minute per square meter of floor area and selected to expel all heat generated by the lift machinery within the lift shaft. The fan shall be switched via a toggle switch mounted in the car operating panel.

4.3.3.23. Lift car finishes

The entire car internal finish including the area above the suspended ceiling shall be installed and finished off to the highest standard. All finished work shall be smooth and free from wraps, buckles, squeaks and rattles and all joints shall be light proof.

All wall panelling shall be jointed with a pliable material /silicone to prevent squeaks generated by car panel movement / deflection.

A robust handrail, consisting of an "Intrad" poly-carbonate bumper tail, spaced 50mm off the panelling, must be provided across the rear and side walls of the lift car. The spacer blocks to which the hand and bumper rails are secured shall be fixed to the panels by means of 2 x M10 bolts with locknuts or other approved method.

A silvered glass mirror shall be provided at the rear of the cabin in the side walls between the handrail and the ceiling.

Goods/Passenger lift car panels shall be manufactured from at least 1.5mm mild or stainless steel with at least two horizontal intermediate stiffening ribs and panels with a width greater than 400mm shall have vertical stiffening ribs at intervals not exceeding 200mm or equivalent construction.

4.3.3.24. Fixture faceplates and mounting

Unless otherwise specified, all landing fixture faceplates shall be surface mounted and shall be manufactured of at least 3.0 mm thickness stainless steel, with bevelled edges for all lifts if square rectangle stainless steel face places are offered. However, Contractors may offer alternative landing fixture face plates if these faceplates are generic products and aesthetically acceptable to the Representative/Agent.

The fixture faceplates in the lift car and at the landings shall be mounted with concealed security fastenings or fastenings requiring special tools to remove them, as approved by the Representative/Agent. Exposed fastenings shall match the material and finish of the faceplate.

The following fixture face plates shall be located and sized in accordance with dimensions approved by the Representative/Agent:

a) Car operating panels.
b) Car position indicators.
c) Car direction indicators.
d) Landing push button stations.
e) Landing position indicators and signals.
f) Blanking-off plates

Vertical transportation (lift) installations

Without exception, the contractor shall observe that the engineer shall approve the final design of the fixture faceplates before placing the order or manufacturing of this equipment.

4.3.3.25. Car and landing door operator

Only door operators with the capabilities of coping with medium to heavy traffic shall be accepted and the type of door operator offered shall be clearly shown in the tender submitted. The door system shall be capable of controlling the position of the doors at any given moment and shall constantly produce a smooth, accurate and efficient operation.

The doors on the lift car and at each landing opening shall be opened and closed quietly and smoothly by an electric operator. The motion of the door operator shall be accomplished with arms and appropriate linkages to the approximate centre of gravity of the driven door panel.

Each landing door shall be equipped with Electro-mechanical interlocks so that the lift can operate only when the interlock circuit is established. Landing door locks shall meet the SABS 1545-1 safety requirements. All work and material related to this Sub-Section shall from part of the Contractor's scope of works.

An independent auxiliary self-closing device shall close each landing door panel whenever the door is not in the closed position and the equipment relating to the car and landing door system does not restrain it. An electric contact for the lift car door shall be provided which shall prevent the lift moving away from a landing unless the door is in the closed position.

An electrical contact shall be fitted to the non-driving car door if its linkage is dependent on a wire rope or chain. Emergency Triangle access key mechanisms shall be provided on each entrance.

4.3.3.26. Lift door hangers

Hangers shall be equipped with ball bearing adjustable rollers to take the up thrust of the doors. The hangers and rollers shall be designed to accommodate the size and weight of the doors operated with a high-speed door operator.

4.3.3.27. Car door control

Car door motion controllers

Car door motion controllers dependent on resistors, rheostats or switches to control the opening and closing motion shall not be accepted. The car door motion controller shall be capable of controlling the position of the doors at any given moment and shall constantly produce a smooth, accurate and efficient operation.

For group controls only

Adjustable hardware or software timers shall be provided to hold the doors open for the dwell times specified below. The tabulated dwell times are initial adjustment standards. Further adjustment to suit specific traffic movement capabilities and the arrangement of car and landing stations shall also be possible. The first passenger dwell times are those measured from door fully open to door start-to-close. The second and succeeding dwell times are from restoration of the light beam to door start to close from its fully reopened position.

Table 19: Lift Passenger Conditions Dwell Times

Passenger Conditions	Stops for Car Call	Stops for Landing Call

Vertical transportation (lift) installations

First Passenger	**2.0 sec.**	**3.0 sec.**
Succeeding Passengers	**1.0 sec.**	**1.0 sec.**

Stops at the high or low car call reversal floors shall be considered as landing call stops.

If doors are held open for an adjustable period of time by a passenger standing in the entrance or by constant pressure of the door open button, a buzzer shall sound, and the doors shall start to close at a reduced speed and force level. When the doors touch an obstruction, they shall re-open.

Door protection devices

A non-retractable electronic infra-red/ultra-sonic protective leading edge shall be provided and shall extend at least 2100-mm above the platform and its active surface/area shall project beyond the front edges of each leading car door panel. Should this device come in close proximity, or touch a person or object whilst the car doors are closing, the car and shaft doors shall return to their open position. Manual reversal of the doors while the lift is on automatic operation shall be accomplished by pressing a door open button in a car-operating panel. Should this device be activated while the car doors are closing, the car and shaft doors shall return to their open position.

Without exception the Contractor shall demonstrate on the day of Completion that the door closing pressures comply in full with the SABS 1545 Part 1 and Part 2 under normal and forced closing conditions.

The door protection device shall have the capabilities of detecting metal/plastic trolleys.

4.3.3.28. Car platform

The car platform with enclosure of each lift shall be balanced by arranging balancing weights to equalise the guide pressure (front to back and side to side) so that the pressure on any guide shoe roller does not exceed 18kg without load in the car. (Statically balanced).

4.3.3.29. Landing entrances

Each lift shaft landing entrance assembly shall consist of unit frame, door panels, fascia, sill, hanger, closer and interlock. The installation shall comply with the applicable code requirements. As a standard all lift landing equipment including doors, signal faceplates shall have a two (2) hour fire rating. The Contractor shall provide the relevant SABS test certificates for Class "C" type landing door equipment.

4.3.3.30. Door panels

The door panels for all openings shall be constructed of at least 1.5 mm thick mild or stainless steel**.** Continuous stiffener channels must be provided to the top, bottom and edges at the faceplates. The bottom of each door panel shall be provided with removable laminated phenolic guides, which run in the sill slots.

Door panels shall be constructed to operate free from squeaks or metallic sounds and shall be adequately treated with a sound deadening material to produce a quiet door operation under all operating conditions.

The leading edge of the car and landing doors shall have an interlocking profile with rubber stoppers (top and bottom) to prevent the door panels closing metal to metal. Add on rubber profiles shall not be accepted.

All landing door site guards shall have a stainless-steel box type construction for added rigidity.

Vertical transportation (lift) installations

4.3.3.31. Goods / passenger lift and access

Car and landing sills shall have additional angle iron supports (reinforced sills) to accommodate the applicable point loads. Landing and car door panels shall have reinforced sliding shoe supporting sections. Only reinforced sliding door panels shall be accepted. Door panels shall be at least 1.5 mm thick Mild Steel or Stainless Steel with at least two horizontal intermediate stiffening ribs.

4.3.3.32. Sills and support angles

The landing sills for all openings shall be of narrow extruded aluminium. Grooves in all sills for the door guides shall be machine planed with minimum clearances for the guides. The sills shall be supported on steel angles provided by the lift Contractor and securely fastened to the building floor construction.

4.3.3.33. Toe guards

Toe guards shall be of at least 1.5 mm thick steel and shall be installed on all landings. They shall extend the full width of the door opening and be gradually bevelled to the wall. The straight vertical portion of the guards shall at least be 400 mm long or as in the case of the lowest landing shall equal the distance travelled by the car sill from the bottom terminal landing to when the car is on the fully compressed buffer.

4.3.3.34. Car position indicators

Electronic LED digital readout position indicators shall be incorporated in each lift car operating panel at a height of not less that 2100 mm above the floor. As each lift travels through the lift shaft, its position shall be indicated continuously by the illumination of the numeral or letter corresponding to the landing that the lift is stopped at or is passing. The digital readout shall be at least 50 mm in height.

4.3.3.35. Car operating panel (COP)

The operating device for each lift shall include a series of buttons, numbered to correspond to the active landings served and various additional buttons and key switches, including emergency alarm, intercom, door open and door close buttons, independent control, fire control and rear door control key switches.

The car call buttons shall be numbered to correspond to the landings served or the numbers shall be engraved with recessed background adjacent to the car buttons. Car, landing and emergency buttons shall be of the Micro push operation type and shall be approved in terms of the Occupational Health and Safety Act. Each button shall be clearly marked with its corresponding floor position. The demarcation shall either comprise a raised or recessed numeric or alphabetic character. Car call buttons shall have Braille incorporated into the button unit.

The car operating station shall be paraplegic friendly and shall be located so that all operating and emergency buttons are located between 1500 mm and 900 mm above the car platform. The emergency buttons and switches shall be mounted at the bottom and the call buttons in numerical order starting above the emergency button and numbering from left to right.

Swing front return panels used in the passenger car enclosures shall be arranged so that the call buttons and the control and signal devices are substantially flush to the vertical surface and shall be mounted on the return panel. The wiring to the individual components shall permit the panel to swing open for maintenance purposes.

A second rear door car-operating panel for lifts with two entrances shall operate independently to the front panel and shall comply in full with this section.

As a standard the lift signage shall include No Smoking, Load, Passengers, Certificate Number and Lift Number /

Vertical transportation (lift) installations

Designation, as required by the applicable standards and regulations. All signage shall be engraved into the Car Operating Panel.

Without exception the Representative/Agent shall approve the final design of the car-operating panel before placing the order or manufacture of this equipment.

The number of Car Operating Panels per lift shall be as nominated by the Representative/Agent.

The button markings/engraving shall be such that it does not fade or wear with continuous operations. The markings, whether engraved or raised shall remain clearly visible and the coloured epoxy shall remain intact throughout the life of the button.

All key switch cylinders in the fixture faceplates of landing stations, car stations and supervisory control stations shall be master keyed with removable core cylinders (KABA type or equivalent).

4.3.3.36. Call acknowledging lights

All car and landing buttons shall be of the call acknowledging type. The registering of a call button shall illuminate the button to acknowledge that a call has been registered. Incandescent indicator lamps shall not be accepted.

4.3.3.37. Landing call buttons

Passenger and Goods/Passenger Lifts

A riser of landing micro push button stations shall be provided. Terminal floors shall contain a single button station and intermediate floors shall contain both up and down buttons. Pressure on the button in one fixture shall cause the electronic illumination of the corresponding button unit in the other fixture at the same landing. Incandescent button illumination shall not be accepted.

Landing push buttons shall be of the Micro push operation type and shall be approved in terms of the Occupational Health and Safety Act.

The location of the centreline of each landing micro push button fixture shall be located at 1050 mm above the floor.

Each button shall be clearly marked with its corresponding direction of travel. The demarcation shall either comprise a raised or recessed approved symbol.

The button markings/engraving shall be such that it does not fade or wear with continuous operations. The markings, whether engraved or raised shall remain clearly visible and the coloured epoxy shall remain intact throughout the life of the button. Buttons shall have Braille incorporated into the button unit.

Access Goods Only Lifts and Dumbwaiters

Refer to Section 3, clause 1.2 of this document.

All buttons shall be micro-push buttons.

4.3.3.38. Waiting passenger lanterns and gongs

The contract shall provide an up and down, LED digital readout electric indication waiting passenger lantern at each intermediate landing and an up or down single indication lantern at a terminal landing of all lifts. The lanterns shall be mounted above the head jamb or beside the side jamb of each typical entrance. Incandescent indicator lamps

shall not be accepted.

Supply and fit adjustable electronic arrival gong to each entrance. The fixture face plate shall contain an approved pattern of slots to enable the transmitting of the sound from within the shaft to the lift foyer. In terms of the paraplegic/blind person's requirements the gongs shall have a different tone when announcing cars travelling in the up and down directions - two "gongs" for down and one "gong" for up.

As soon as a lift has reached a predetermined distance from a landing and is going to stop at that landing, the corresponding waiting passenger lantern shall be illuminated, and the gong shall sound whether or not a landing call has been registered. The waiting passenger lantern shall remain illuminated until the lift leaves the landing or if the car becomes filled, whichever occurs first.

The type and design of the landing signals shall take into account long lift lobbies associated with groups of lifts installed adjacent to each other. After installation the landing direction and/or announcing arrows shall be clearly visible from any position within the lift lobby. It shall be the contractor's responsibility to inform the Representative/Agent if the selection of landing signal design is not going to achieve the visual requirements detailed under this section.

As an exception and if specifically requested by the contractor and accepted in writing by the Representative/Agent, adjustable gongs may be fitted to the car. Gongs fitted to the car shall be positioned in the header section of the car and the sound shall be contained and directed towards the entrance so as not to be transmitted to the floors above and below the lift. The gongs shall further only sound when the lift is within 200 mm from the landing level.

As an exception and if specifically requested by the contractor and accepted in writing by the Representative/Agent, announcing arrows may be fitted in the side jambs or incorporated in the push button unit. However, this option shall be restricted to Simplex and Duplex units with a single riser of buttons.

4.3.3.39. Landing position indicators

Electronic LED digital readout position indicators shall be provided over the architrave of each lift in the main lift lobby. As the lift travels through the lift shaft, its position shall be indicated continuously by the illumination of the numeral or letter corresponding to the landing that the lift stopped at or is passing.

The final number of landing indicators required for each lift and their locations shall be as approved by the Representative/Agent.

The digital readout shall be at least 50 mm in height.

Landing position indicators shall not illuminate if the lift can no longer respond to calls as a result of a fault condition or when undergoing routine maintenance.

4.3.3.40. Landing doors and architrave finishes

All stainless-steel landing doors and architraves shall be cleaned prior to final acceptance and receive a coat of an approved stainless steel polish.

When spray painting the landing doors and frames, the Contractor shall ensure that the landing door panels are satisfactorily prepared before the final coat of Duco is applied.

Floor designation shall be permanently marked on the inside of the landing doors (shaft side).

Vertical transportation (lift) installations

4.3.3.41. Lift intercom system

The lift shall be complete with an intercommunication system with talk-back speakers with all required auxiliary equipment, wiring and a six (6) hour minimum back-up power supply.

Lift travelling cables shall contain two (2) shielded pairs of conductors for each car for the intercommunication system.

Terminal strip boxes for all wiring shall be provided.

All wires in the wiring system shall be shielded without exception.

Wiring between all master stations in the building shall comply with manufacturer's recommended standards.

Provide one sub-station in each lift car, one master station for each motor room and one master station for the security control room.

The voice link shall constantly produce a sound/speech quality comparable to that of the normal Telkom telephone network. All provisions to adequately address interference in the lines shall be included. The intercom master stations shall include an indicator system/panel to indicate the lift car initiating the emergency call and an "All Call" feature to allow for communication to all lifts at the same time.

The lift intercoms for all the lifts shall be wired back to a common security/control room centrally located.

The Master Stations shall be capable of accommodating all the lifts covered under this Specification. The individual lift's designation and its call code shall be clearly and neatly displayed on the Master Station.

4.3.3.42. Load switches

All load switches and sensors which influence the control and the drive shall be adjusted in order to achieve an optimum operation, and their operating loads documented for future reference on the data sheet or certificate of compliance SABS1545 - Annex "A". These load contacts may include but are not limited to the over-load, minimum load and the landing call by-pass functions.

4.3.3.43. Car top requirements

Car Top Working Platform

Securely fitted working platforms of adequate strength shall be provided on the top of the car roof to create a level and safe working area. The platform shall be free of any electrical cabling and lift equipment. The car roof shall not be regarded as a working platform.

Car Top Guard Rails

In terms of SABS 1545 the car top shall be provided with a balustrade (guard-rail) where the free distance in the horizontal plane beyond and perpendicular to its outer edge exceeds 300 mm.

4.3.3.44. Outdoor escalators

Outdoor Escalators - Covered

Vertical transportation (lift) installations

Undercover outdoor escalators are escalators with a roof and optional lateral cladding so that neither snow nor rain can reach the unit under normal circumstances. Any moisture that gets tracked onto the unit by shoes will not impair the serviceability.

The following special design elements does not limit or restrict the Contractor from providing the additional special design elements/requirements in terms of the manufacturer's recommendations applicable to outdoor covered escalators. The Contractor shall remain responsible to supply all the recommended special design elements applicable to the escalators covered under this specification.

Outdoor covered escalators without exception, shall incorporate the following related design elements:

a) mm stainless steel motor covers
b) mm stainless steel drive-chain covers

Outdoor escalators shall have a water drain truss. The water drain is accommodated in the return station and should be installed in tandem with oil separators. A water level contact with an audible alarm shall be provided to protect the escalator against flooding in the return station. The water level contact must be supplemented with a pump installed and supplied by the Employer.

Before the water level in the pit rises to a point where it can cause damage to the escalator equipment, or, to a point where the water can be picked up by the rotating steps, the level switch shall activate an audible buzzer/alarm. After a further rise in the water level the escalator travel shall be blocked.

Special Design Elements

a) An increased anodising layer shall be provided for all aluminium profiles.
b) Lateral cladding on both sides of the escalator shall be provided.
c) The escalator motor system shall be IP55 rated.
d) The escalator electrical system shall be IP54 rated.
e) Balustrade skirting shall be Stainless Steel – Grain 240.
f) The escalator truss shall be painted with an approved corrosion inhibiting/protection paint (Grey).
g) Step chains shall be provided with sealed rollers.
h) Step axles shall be stainless steel.
i) Automatic lubricating systems and oil drain channels shall be provided.
j) Stainless steel drive unit covers shall be provided.
k) Stainless steel drive chain covers shall be provided.
l) Step chain covers shall be provided.
m) Handrail guide profiles shall be stainless steel.
n) Increased corrosion protection (Grey) for the escalator track system and (Yellow) for all rotating parts.

Outdoor Escalators - Uncovered

Uncovered outdoor escalators are escalators exposed to the elements.

The following special design elements does not limit or restrict the Contractor from providing the additional special design elements / requirements in terms of the manufacturer's recommendations applicable to Outdoor Uncovered Escalators.

The Contractor shall remain responsible to supply all the recommended special design elements applicable to the escalators covered under this specification.

Outdoor uncovered escalators exposed to the elements shall without exception, shall incorporate the following related design elements:

a) mm stainless steel motor covers.
b) mm stainless steel drive-chain covers.

Outdoor escalators shall have a water drain truss. The water drain is situated in the return station and should be installed in tandem with oil separators. A water level contact with an audible alarm shall be provided to protect the escalator against flooding in the return station. The water level contact must be supplemented with a pump installed and supplied by the Employer.

Before the water level in the pit rises to a point where it can cause damage to the escalator equipment, or, to a point where the water can be picked up by the rotating steps, the level switch shall activate an audible buzzer/alarm. After a further rise in the water level the escalator travel shall be blocked.

When installing escalators outdoors, wind loads shall be considered. It shall be the responsibility of the Contractor to obtain all the relevant information regarding the maximum wind velocity and wind direction to properly dimension the escalator truss.

Special Design Elements:

a) The following elements shall be provided:
b) (An increased anodising layer shall be provided for all aluminium profiles.
c) Lateral cladding on both sides of the escalator shall be provided.
d) The escalator motor system shall be IP55 Rated.
e) The escalator electrical system shall be IP54 Rated.
f) Balustrade skirting shall be Stainless Steel – Grain 240.
g) The escalator truss shall be painted with an approved corrosion inhibiting/protection paint (Grey).
h) Step chains shall be provided with sealed rollers.
i) Step axles shall be stainless steel.
j) Automatic lubricating systems and oil drain channels shall be provided.
k) Stainless steel drive unit covers shall be provided.
l) Stainless steel drive chain covers shall be provided.
m) Step chain covers shall be provided.
n) Handrail guide profiles shall be stainless steel.
o) Increased corrosion protection (Grey) for the escalator track system and (Yellow) for all rotating parts shall be provided.

Waterproofing of Escalator Pits

It is assumed that water may penetrate down the side of the escalator truss cladding and enter the pit area. It shall be the Contractors responsibility to inform the Representative/Agent of all escalator pit waterproofing requirements and the pit dimensions given and drawings issued must clearly detail the pit waterproofing requirements.

Escalator Drive

Escalators shall include the soft-start feature incorporating an adjustable uniform acceleration curve thereby insuring a comfortable ride and limiting mechanical wear on components when the escalator is in automatic mode (stop-and-go operation).

The motor drive unit shall be equipped with all the necessary monitoring circuits to maintain a safe and reliable operation. These shall include but are not limited to, the monitoring of the load, direction of rotation, speed, supply voltage and operating currents.

The equipment shall be designed to operate at plus or minus 15% of the normal feeder voltage and plus or minus 5%

of the feeder frequency without damage or interruption of escalator service. Protective devices shall be included to prevent damage on over- or under-voltage.

The control system shall be designed to operate the Escalator continuously at 100% of the rated speed and at 100% of the rated load in both directions without overheating or stalling.

Escalator Control

Escalator control systems shall be Computer Based with self-diagnostic and fault analysis capabilities.

Error Logs showing at least forty (40) of the most recent faults shall be accessible. The Error Log shall clearly indicate the type of fault, escalator number, date and time the fault occurred.

Operation with Inspection Control

A Remote Inspection Control unit for maintenance purposes shall be provided and shall remain in the escalator Motor Room or pit at all times. The operating buttons shall be of the continuous pressure type and the inspection speed of the escalator shall be 50% of the nominal speed.

4.3.3.45. Operational requirements: simplex control

4.3.3.45.1. Passenger & Goods/Passenger Lifts

The operation of lifts shall be from the landing buttons and from the call buttons in the car-operating panel. Single call buttons shall be mounted at each terminal landing and "up" and "down" buttons at each intermediate landing.

The operation shall be such that momentary pressure on one or more car or landing buttons, other than those for the landing at which the lift is standing, shall start the lift, provided the interlock circuits are established and cause the lift to stop at the first landing for which a car or landing call is registered corresponding to the direction calls registered and these stops shall be made in the order in which the landings are reached, irrespective of the sequence in which the calls are registered provided the call for a given landing is registered sufficiently in advance of the arrival of the lift at that landing to permit the stop to be made.

If there are no car calls and the lift starts up in response to several down calls, the lift shall proceed to the highest down call and then reverse to collect the down calls. Up calls shall be collected similarly when the lift starts down in response to such calls. If the lift stops for a landing call the direction of travel shall be anticipated and maintained for a predetermined interval and independent of additional car and landing calls registered in the opposite direction of the anticipated travel.

If down landing buttons are pressed while the lift is travelling up, the lift shall not stop at these landings, but these calls shall remain registered. After the highest car and landing calls have been answered the lift shall reverse automatically and respond to car and landing calls registered below the lift. When travelling down, the lift shall not respond to up landing calls, but these calls shall remain registered and be answered on the next up trip.

After the lift has answered the last call and after a pre-set time period, normally 20-seconds, the lift shall be dispatched to a nominated Boarding Floor. Provision must be made to have this automatic return feature disabled if required.

4.3.3.45.2. Access Goods Lifts Only and Dumbwaiters

Each landing shall be provided with the number of buttons corresponding to the number of landings served.

The lift shall have a call and send operation. The lift shall respond to one call at a time and this call shall be the first call registered.

As the lift arrives at a landing a gong or buzzer shall sound for an adjustable time. The adjustable time shall be pre-set to 30 seconds.

Should the lift be standing at a landing with open doors and it is called from another floor, a gong or buzzer shall sound on the landing that the lift is standing for an adjustable time before the doors close and the lift moves to answer the call. The adjustable time shall be pre-set to 30 seconds.

4.3.3.46. Operational requirements: group control

4.3.3.46.1. Automatic operation

The operation of passenger lifts shall be group automatic operation arranged, dispatched, and controlled by a group supervisory system. The system shall be supervised by a re-programmable minicomputer or microprocessor system.

Each lift shall be arranged for automatic operation without attendant through the car and landing buttons in conjunction with a group supervisory system that is re-programmable by the replacement of pre-programmed EPROM's. This re-programming shall be possible without making changes to the lift hardware or shaft or machine room fixed wiring.

Group, lift, car and drive control commissioning parameters shall be software "switches" and it shall be possible to fine tune these variables using a permanently installed terminal or test tool.

The starting of a lift shall be contingent upon the establishing of its door interlock circuit. The lifts shall automatically slow down and stop level at the floors in response to car and landing calls. A landing call shall be automatically cancelled as the lift slows down and while stopped to prevent other lifts from responding to the same call.

Whenever a lift is returned to group automatic operation after being operated on for inspection, independent, or firemen service, the lift shall immediately take its place in the group.

Car doors shall be prevented from closing or may be reversed while closing by the electronic door control system, the protective leading edge on the car door or by pressing the door open button in the car operating panel.

The door open dwell times shall be software adjusted so that the open time for a car call is shorter than that for landing calls.

All car and landing calls shall be cancelled as they are answered.

4.3.3.46.2. Group supervisory system

Each group of lifts shall be provided with a software programmable automatic supervisory group system arranged to co-ordinate effectively the movement of the individual lifts of the group so as to provide the maximum efficiency in serving the passenger service requirements.

4.3.3.46.3. Group control dispatching system

The dispatching system or group control system shall be de-centralised, and the lifts shall not be dependent on a central control system for its effective group operation. Each lift control shall be capable of taking over the function

of the group control.

4.3.3.46.4. Group control up peak mode

The Up-Peak Mode shall be initiated automatically by recognising or anticipating traffic patterns or when a pre-determined number of cars with a loading above a predetermined weight level leave the main landing in the up direction. Cars shall be permitted to depart from the main landing without predetermined timing. During the Up Peak, down calls shall be served by cars not immediately needed to serve up traffic.

The Up Peak shall be discontinued once a predetermined number of cars with a loading below a predetermined level leave the main landing in the up direction. To suit individual building requirements, it shall be possible to alter the variables, which activate and de-activate the Up Peak without making changes to prints, hardware, the main program or fixed wiring.

4.3.3.46.5. Group control down peak mode

The Down Peak condition shall be detected by monitoring the number of down landing calls, down boarding rates and down lobby arrival loadings. Under heavy Down Peak traffic, landing calls shall be grouped in sequence of registration and assigned to be served in this sequence in an approximate "first in / first out" pattern. To suit individual building requirements, it shall be possible to alter the variables, which activate and de-activate the Down Peak without making changes to prints, hardware, the main program or fixed wiring.

4.3.3.46.6. Group control distribution of free cars

If no car call has been assigned after the lift has answered the last call, the car and landing doors shall close, and the lift shall park at this landing awaiting a further assignment of a landing call or assignment to another zone or parking floor. Cars having completed service shall be dispatched after a software adjustable time period to designated floors so that possible future calls shall not keep passengers waiting for long periods of time. The free cars shall not open their car doors when arriving at a parking floor and the doors shall remain closed until required to respond to an assigned call. The distribution of free cars shall consider additional main landings and priority floors in the following order of priority, unless otherwise specified:

Main lobby : Priority 1

Additional main landings : Priority 2

Executive floors : Priority 3

Restaurant floors : Priority 4

The main landing / lobby shall have the highest priority when distributing free cars. If two or more free cars are parked on the main landing, only the available free car/master, shall park with its doors open.

4.3.3.46.7. Automatic landing by-pass

When a carload exceeds a predetermined weight level, it shall automatically bypass all landing calls in the direction of service and shall respond only to car calls. The default setting for this predetermined level shall be 65% of rated load.

4.3.3.46.8. Car held up at a landing

Should a lift be delayed at a typical floor beyond a pre-set software adjustable time period initially set at thirty (30)

seconds, the lift shall be disconnected from the group automatic operation and the assigned landing calls shall be re-assigned to an alternative operational lift.

4.3.3.46.9. Car call cancelling

When the car has responded to the last call in the up or down direction, the car calls shall automatically be cleared from the system to maintain optimum efficiency.

4.3.3.46.10. Load weighing

Each lift shall be provided with a strain gauge load weighing device to ensure optimum service. This device shall be capable of constantly monitoring the load on the car platform with an accuracy of ± 5.0 kg.

4.3.3.46.11. Anti-nuisance control

When a lift with a loading level of less than 20 kg arrives at a landing, all car calls shall be reset automatically.

4.3.3.46.12. Motor generator set time-out

When a lift does not receive a group demand dispatch at the dispatching landing for a software adjustable time period up to 10 (ten) minutes, set initially at 5 (five) minutes, the motor generator set, if provided, shall stop and shut down the car lighting and ventilation automatically after it has opened the car and landing doors. If solid-state motion control is provided, timing devices shall be provided to accomplish this shutdown.

When a dispatch demand is received from the supervisory system by a lift whose generator is stopped, its motor generator shall automatically restart and re-energise the car lighting and ventilation circuits.

4.3.3.46.13. Operation with independent service

A two-position key operated switch, with removable cylinder as approved by the Representative/Agent and master keyed to the building system, shall be mounted in the main car operating station of each lift specified for Independent Service Operation. When this switch is in the on position, the removal of the key from the barrel shall be prevented and the lift shall be operated from the car buttons only and independent of all other automatic or special operation modes.
The power operated car and lift shaft doors shall remain open when a lift is at a landing until a car call for another landing is registered and the door close button is pressed. If another car call has been registered, it shall be necessary, after each stop, to repress the door close button to affect the closing of the doors.

It shall further be possible to activate and de-activate this service through the remote monitoring control station.

4.3.3.46.14. Operation with inspection

A two-position switch shall be provided on top of the car enclosure to operate each lift manually during adjustment, inspection, maintenance and repair. The operating buttons shall be of the continuous pressure type and the speed of the car shall not exceed 0.63 m/s. It shall operate the car only when the car doors and all lift shaft doors are closed and all safety circuits made.

4.3.3.46.15. Emergency operation

A two-position switch shall be provided in the motor room to operate each lift manually during emergency conditions, adjustment, inspection, maintenance, and repair. The operating buttons shall be of the continuous

pressure type and the speed of the car shall not exceed 0.63 m/s. Emergency operation shall operate the car only when the car doors and all lift shaft doors are closed and when the inspection control on top of the car is switched to normal operation. However, it shall be permitted to override the final limits, safety contacts and governor contacts.

4.3.3.47. Operational requirements: fireman operation

4.3.3.47.1. Fire recall (level 01)

All lifts shall be equipped with Fire Control Level-1 and each group or single lift shall be equipped with a common Fire Control switch to recall the lifts (non-stop) to the nominated evacuation landing, where it shall remain parked with open doors. The switch shall be mounted in a box with a break-glass front marked "Lift Fire Control".

When the switch is activated, cars travelling away from the designated landing, shall reverse at the next served floor without opening its doors, and return non-stop to the designated fireman's floor.

An illuminated indicator fitted inside the car shall instruct the passengers to evacuate the lift at the designated evacuation floor.

When on Standby Power the Fire Control operation shall operate as detailed under this section in conjunction with the Emergency Control sequenced evacuation shown under Section-3 Clause 7 (Operation with Standby Power) of this Specification.

4.3.3.47.2. Fire Recall (level 02)

A Fire Service Key Switch mounted in the car operating panel shall be provided in each lift operating as a Fireman's Lift. Lifts operating as fireman's lifts shall be as nominated by the Representative/Agent.

A lift operating on Fire Service shall respond only to its own car call while ignoring all landing calls. When the lift arrives at a landing not being the main landing, its car and landing doors shall remain closed. If the door open button is pressed, the doors shall open and continue opening. If the door open button is released, the doors if not yet fully open, shall immediately reverse direction and close. Once the doors have been fully opened via the door open button, they shall remain open until a further car call has been registered and the door close button has been pressed.

If more than one car call has been registered, all the remaining car calls shall be cancelled once the lift stops at the nearest car call in the direction of travel.

If the lift remains stationary at a selected floor away from the main landing with the doors closed for an adjustable time initially set at 30 (thirty) seconds, the lift shall return to the fire recall floor automatically. When the lift returns to the main landing, the doors shall open automatically and remain open awaiting a further car call.

All the car door horizontal and vertical light rays, ultrasonic and infrared detectives, shall be made inoperative during the firemen's service operation.

It shall further be possible to initiate the fire control operation through the remote monitoring control station or fire detection system. The Fire and Security Sub-Contractor shall provide a potential free contact in each lift motor room to indicate a fire condition.

4.3.3.48. Operational requirements: standby power

4.3.3.48.1. Emergency recall to main landing (level 01)

Provide a standby power operation which recognises the feeder arrangement and the standby power operation which

automatically evacuates all lifts on each affected feeder by operating 1 (one) lift at a time to the main dispatching landing without responding to car or landing calls. The system shall subsequently permit automatic and manual selection of any lift to be released for normal operation with standby power. If any lift fails to return to its main landing within 90 (ninety) seconds, it shall automatically be disconnected from the automatic return feature.

The standby power supply shall be sized to run a predetermined number of lifts simultaneously. The Electrical Sub-Contractor shall provide the number of lifts to run and the maximum kVA available for emergency operation. Alternatively, if this information is available, it shall be as nominated by the Representative/Agent.

In the event of a total failure of normal power, the feeder or feeders in each group shall be transferred to the standby power source. A potential free normally closed contact shall be provided in the lift motor rooms to indicate the transfer to the standby power source. The potential free contact supplied by the Electrical Sub-Contractor shall open (fail to safety) when on standby power and the lifts will commence their sequenced evacuation.

The lifts shall be capable of operation on standby power at minimum of 100% of rated speed in both directions and at a maximum load of 100% of rated capacity for a period of 10 (ten) minutes without overheating.

All connections to the lift controls for standby power operation shall be provided in the appropriate machine rooms and all the necessary interlocking interconnection wiring among machine rooms shall be provided under this section.

4.3.3.48.2. Manual release (level 02)

Once all the lifts have been evacuated in sequence to the selected main landing, a predetermined lift or lifts shall be released for normal operation automatically or manually via a remote monitoring station. All manual or automatic release shall be prevented until the automatic evacuation has taken place.

The cars nominated / selected to run on emergency power shall not be fixed and it shall, furthermore, be possible to change the lift / lifts selected to run on emergency operation without making major changes to the lift wiring or control circuitry.

In all instances the fireman's lift shall have priority when selecting a lift or lifts to run on emergency power.

4.3.3.49. Door operation and control

Independent door operation and control

For lifts with two car entrances, the car doors front and back shall operate independently from its own car and landing call buttons, and associated door control equipment and this shall include the operation with independent service.

Car and landing doors for access goods lifts only

The car and landing doors shall open and close quietly and smoothly. Doors shall be capable of being operated by hand.

Each landing door shall be equipped with an electro-mechanical interlock so that the lift can only operate when the interlock circuit is established.

Each car door/gate shall be equipped with a mechanical lock so that the lift can only operate when the car door is locked.

An electric contact for the car door shall be provided that shall prevent the lift from moving away from a landing unless the door is in the fully closed position

Overload protection

Without exception, overload protection shall be provided (SABS1545-Part-1 1999 & EN81 Code 1997). When the load in the car enclosure exceeds the rated load, a buzzer shall sound, an overload indicator shall illuminate in the car operating panel and the lift doors shall remain open and the lift blocked from travelling. The overload device shall not be active during the travel.

Drive control

A fully regulated distance dependant closed loop VVVF, DC Ward Leonard, DC Direct Drive or Hydraulic drive control system shall be provided and shall constantly maintain the floor levels and ride quality as specified. Lift acceleration, nominal speed and slowdown phases shall constantly be monitored and controlled against, and with reference to, distance, speed, current and voltage feedback loops. The lift drive shall be capable of bringing the lift to a standstill after a travel without a "creeping in" or "levelling in" phase i.e. a direct approach.

Driving machine and motor shall be controlled to operate the lift continuously at 100% of rated speed in both directions without overheating or hunting during levelling.

4.3.3.50. Ride quality and performance criteria

Ride quality objective

The main objective is to be able to determine a ride standard and to maintain that standard by routine measurement and adjustment as necessary. The standards nominated are for lifts with rated speeds of 5 m/s or higher. Lower speed lifts should be able to perform better in terms of ride quality, and at worst the same parameters should be applied.

Vibration

Vibration, also sometimes referred to as "quaking", is measured in three dimensions:

a) Lateral quaking from front to back,
b) Lateral quaking from side to side,
c) Vertical vibration (up and down).

The vibration levels are measured as acceleration levels of the car floor using an accelerometer. Measurements are expressed in terms of mm/s², milli-g or LAL. - 9.81 mm/s² = 1 milli-g or LAL.

Recording accelerometer tests in the horizontal plane shall be conducted prior to practical completion on each lift travelling at rated speed the full length of the shaft between terminal landings in both up and down directions with a maximum load of 230 kg located in the centre of the platform. Recordings shall be taken on the platform in the plane of the car guide rails and perpendicular to the plane of the car guide rails. One set of recordings for each lift shall become the property of the Employer as a permanent record. If these tests show that the equipment is in any way defective, at variance with the specified requirements, or objectionable in any operation, the Contractor shall make any change necessary to remedy these defects. All expenses for carrying out this remedial work and the costs of all subsequent tests including labour, material, test equipment, on site observations, etc, shall be for the Contractor's account. Notice of all tests shall be given to the Representative/Agent in writing at least 96 hours prior to conducting the test.

Noise levels

Noise levels in the car are measured during operation of the lift. Maximum and mean dB (A) figures are measured.


Protection of goods during shipment

5. STANDARD SPECIFICATION

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5.1. Protection of goods during shipment

The intent of these instructions is to present the requirements and procedures for protecting equipment and materials during export shipment. It is intended to serve as a minimum requirement guide and will depend on use of packers judgement to determine if physical characteristics of items being packed will require more than these minimum standards to ensure safe arrival at their destination.

When portions of these instructions are not applicable, the best commercial export packing methods to attain comparable protection shall be used. In all cases, materials will be prepared for shipment to withstand multiple handling, outside storage, exposure to rain, dust and salt spray. If the manufacturer's standard export packing will provide equal or better protection at a lesser cost, this information should be brought to the attention of the buyer. If an area of doubt should arise, the buyer shall be contacted.

5.1.1. Air freight

The packing standards, as outlined in these instructions, are for ocean freight shipments only and do not apply to air freight shipment. Contractors' standard domestic packing shall be provided for air shipment.

5.1.2. Export packaging

It is important that all materials arrive at a destination in an undamaged condition. The intent of these Packaging Standards is to serve as a minimum requirement for "Commercial Packaging for Export", but compliance does not relieve packers of responsibility for adequately packing materials, supplies and equipment.

5.1.3. Packaging materials

Lumber shall be new, sound and well-seasoned, knots are permitted provided they are sound and tight and do not exceed one-third of the board width. Knots shall be located as not to cause nailing interference, which would result in structural weakness. Lumber shall be certified completely free from bark, insect infestation and decay. Nails shall be galvanized.

Metal strapping shall be unannealed steel and applied to all packages with a stretching tool and secured with crimped steel seals. All boxes constructed with lumber should be lined with water repellent paper. Ventilation holes shall be drilled upward at 45° at intervals around the sides and ends of the box. Drainage hole shall be provided in base of skidded items.

5.1.4. Packaging methods and prohibited materials

When consolidating materials in a box or crate, items shall be packed or nested to reduce volume as much as possible. All items shall be braced and/or cushioned as necessary within the container to prevent damage from shock, vibration and rough handling. Finished and painted surfaces will be protected from abrasion.

Small items and spare parts not secured to main item shall be separately boxed with box properly identified as to its main item. It is necessary that all shipping containers be tightly packed. Where voids appear, they will be filled with cushioning material or securely blocked off to prevent any movement of contents. Wood wool may be freely used for packing, but restricted materials include:

a) Used sacks and sacking - including jute and hessian.

Protection of goods during shipment

b) Hay and straw - including straw envelopes.
c) Rice Husks.
d) Agricultural waste products.
e) Any packing materials which may have come into contact with animals or soil.
f) Grass and similar matting.
g) Articles of peat.
h) Used wool packs and wool packers.

Containers shall be packed in such a manner to insure an even distribution of weight within the case. All cases will bear warning signs on the outside denoting the centre of gravity and sling marks. Top-heavy containers will be so marked as either "Top-Heavy" or "Heavy End".

Heavy items should be securely blocked and braced to prevent damage to lighter materials packed in the same box. Heavy items, where possible, should be packed on the bottom with lighter items on top. Palletizing - Items which are not crated or boxed and are impervious to damage from moisture, water handling and external damage, which can be conveniently secured to a pallet to facilitate handling, shall be palletized.

Bundling - All items shall be segregated to length and size and bundled into units not to exceed 1134 kg unless previously approved by THE CLIENT. Apply steel strap with a stretching tool and secure with crimped steel seals spaced up to 92 cm apart.

5.1.4.1. Boxes

The construction and reinforcing of a wooden box depends upon the size of the box and the weight of its contents. Following are minimum requirements for various boxes.

a) To 140 kg:

Box shall be made of a minimum of 2.5 cm nominal lumber or 1 cm plywood sheathing, 5.1 x 10.2 cm nominal skids, and 2.5 x 10.2 cm frames with completely cleated ends. All boxes over 22.6 kg to be skidded.

b) 140 to 450 kg:

Box shall be made of a minimum 2.5 cm nominal lumber, or 1.3 cm plywood sheathing with 5.1 cm nominal decking and 5.1 x 10.2 cm nominal skids. Box to have cleated ends, with 5.1 x 10.2 cm or 5.1 x 15.2 cm battens. Plywood boxes shall be constructed with uprights set on 60.9 cm centres. All seams should be backed with an upright or brace.

c) 450 to 4500 kg:

Box shall be constructed with a 10.2 x 10.2 cm nominal skid base, 5.1 nominal floor, 2.5 cm nominal lumber or 1.6 cm plywood sheathing, with cleated ends. Top and sides to be diagonally braced, with corner posts, bracing and stiffening members of 5.1 x 10.2 cm nominal lumber. Load bearing members shall be placed as needed. Top and upper edge members of large or heavy boxes shall be reinforced with 10.2 x 10.2 cm or 10.2 x 15.2 spreaders to prevent crushing of boxes when lifting-slings are used.

d) Strapping:

All boxes must be strapped with a minimum of 2 steel bands running parallel to skids. 1.9 cm banding may be used on boxes less than 181 kg 3.2 cm or 5.1 cm banding must be used on boxes or crates over 181 kg.

5.1.4.2. Open crates

Protection of goods during shipment

Open crates shall be constructed of lumber sizes as indicated for boxes. They shall be diagonally braced on all faces and all 3-way corner points constructed as shown in Style 1 Crate.A common point of weakness in a crate containing over 272 kg is its top edge, upon which a severe strain is placed by slings each time it is handled. A fully sheathed box is preferred for equipment weighing over 272 kg, however, in instances where open crate construction is acceptable, the specifications for skidded, framed boxes shall be followed insofar as skid and framing are concerned.

5.1.5. Protection methods

Equipment that should be sealed off from the atmosphere shall be protected in one or more of the following manners: Wrapping in M.M.M. "cloth wrap" with all lines, joints, and folds sealed with waterproof adhesive. Packing in a totally enclosed box lined with Kraft paper impregnated with Shell "VPI-270". The Kraft paper shall have a waterproof backing.

Packing in an airtight carton after dusting paper wrapped equipment with "VPI-250", or after suspending sacks of "VPI-250" within the equipment. Enclosing within a waterproof heat-sealed carrier bag or shroud, or a sealed plastic film. Vapor phase inhibitors equal to the above specified; Shell "VPI" products may be substituted. Equipment that cannot be sealed off from the atmosphere by wrapping or boxing shall be protected by coating the unpainted surfaces with the following:

a) Esso Rust-Ban 373 for hard surface protection.
b) Esso Rust-Ban 394 for soft surface protection.
c) Esso Rust-Ban 339 rust preventative for light oily surface protection.

Caution shall be exercised in applying preservatives so that items fabricated of leather, mica, rubber, and similar material, are not coated with the preservative compound because of the damaging effect on such items. Shipping containers shall be constructed and sealed in a manner that shall provide maximum protection from pilferage. After rust-treating and sealing, equipment shall be boxed and crated as specified in Section 3.0 of this specification.

5.1.6. Rust preventative application

Shell Company VPI

Shell Company VPI-250 or 270 can be applied dry by use of a De Vilbiss Company Floc Gun or other dusting device. VPI powder should be dispersed over exposed metal surfaces or suspended in finely meshed sacks at intervals within the equipment. For sensitive or precision operating equipment, the "VPI-250" should be suspended in sacks within the equipment housing.

Since VPI can protect metal only 12 inches distant from its location, it should be fairly evenly dispersed or placed in small porous sacks suspended within 12 inches of the surface to be protected. Dosage is as follows:

a) VPI-270 = 1 gram per 15 cubic inches.
b) VPI-250 = 3 grams per cubic foot.

VPI is a salt that liberates nitrite ions which are deposited on the exposed metal surfaces and gives protection against oxygen and moisture. Excellent protection is given ferrous metals, most non-ferrous materials. "VPI" does not provide protection for pure lead, solder, or pure antimony. VPI, when inhaled, may irritate the nose and throat and leave a bitter taste in the mouth. There is no harm in breathing VPI and there are no cumulative toxic effects.

Esso Rust-Ban

Esso Rust-Ban in most cases can be either brushed or sprayed on metal surfaces or parts can be dipped. The following is a description of the Rust-Ban to be used:

Protection of goods during shipment

Table 20: RustBan Protection for Metal Surfaces

Rust Ban	Appearance	Thickness	Life	Coverage	Removal
373	Hard dark	.022" film	1 yr. outside, 2 yr. Inside	350 ft^2/gal	Solvent, alkali or emulsion
394	Soft tan	.001" film	Not for outside, 1 yr. Inside	950 ft^2/gal	Same
339	Clear oily	.0003" film	6 months indoors	400 ft^2/gal	solvent

Esso Rust-Ban Substitutes

Some Substitutes for Esso Rust-Ban are as follows:

Table 21: Acceptable Substitutes for RustBan

Esso Refining Co. Rust-Ban	Pennsylvania Company	Shell Oil Company	E.F. Houghton & Co.
373	Petrotect IX	Ensis Fluid 264	Cosmoline 1058
394	Petrotect 2	Ensis Fluid 210	Cosmoline 1059
339	Petrotect 3	Ensis Oil 30	Cosmoline 1049

5.1.7. Instruments

Board-mounted and all electronic instruments shall be shipped to the panel fabricator enclosed in plastic bags with VPI 250 in protective cartons. All these instruments will be unpacked and mounted on the board at the panel fabricator's shop for check-out.

When the panel-board check-out is complete, all the instruments will be enclosed in the original plastic bag with additional VPI 250 added, and placed in their original cartons before boxing in accordance with Section 3. Panel boards consist of painted steel plates on a steel framework. To prevent rusting, the panel board sections shall be packed in boxes in accordance with Section 3, that have first been lined with Kraft paper impregnated with VPI 260. After the panel is set in the box, the unit will be dusted with VPI 250, sealed with impregnated Kraft paper, and the last wooden closure installed. All precautions should be made to have the enclosure airtight.
This preparation should keep the panel in good condition until it is ready for installation. If inspection is necessary, then open the box at one end, and after inspection, add a small amount of VPI 250 before resealing. Field mounted transmitters and controllers shall be enclosed in plastic bags that contain VPI 250. Bags shall be thoroughly sealed and instrument placed in a protective carton before boxing in accordance with Section 3.

Pressure gauges, dial thermometers, pressure and temperature switches, and all other small articles shall be individually wrapped in Kraft paper impregnated with VPI 270 and placed in protective cartons before boxing in accordance with Section 3. Level gages, continuous drainers, etc., shall be protected internally with VPI 250, sealed off from the atmosphere, and the external surfaces covered with Rust-Ban 339 before packing and boxing for equipment.

Relief Valve & Control Valves

All relief valves and control valves shall have the flanges painted with "Rust-Ban 373", and the rest of the unpainted interior and exterior surfaces coated with "Rust-Ban 339". Flange covers with gaskets will be installed before shipping. All relief valves and control valves shall be shipped in totally enclosed wooden boxes that have been lined

Protection of goods during shipment

with Kraft paper treated with Shell VPI 260. Protective Products If any of the protective products mentioned in Sections 4, 5 & 6 are not available, the approval of the Client must be obtained before a substitute is used.

Marking instructions

All cases, packages and boxes are to be stencilled in Black weatherproof ink on top and two adjacent sides in clear legible characters. On bundles the markings are to be embossed on a metal or similar tag and securely strapped on. Paint shall be used on metal surfaces. Where the surface to be marked is dark, a coat of flat-zinc-white paint shall be applied and allowed to fully dry before applying the specific marking.

Do not use linen paper or light cardboard tags. Special marks, such as "fragile" or arrows, shall be in Red. No advertising shall appear on packages.

NOTE: Weights must be shown in kilograms; dimensions in millimeters. (Imperial weights and dimensions may be shown but they must not be more than half the size of metric figures). Shipping marks must appear on all packages, tags, labels and packing list(s).

Table 22: Shipping instructions

SHIP TO:	_____
	_____
	_____
	_____
Made in	_____
P.O. NO.	_____
Package No.	_____ of _____
Gross Weight	_____kg
Net Weight	_____kg
Dimensions	____x____x____mm

5.2. Worksite storage and equipment protection

This specification covers minimum procedures to be followed for site receiving, handling and storage of equipment and materials and the application of rust preventives and other protection as required.

5.2.1. General

Unless otherwise specified, the protection provided must be adequate for a storage duration of up to 12 months, under applicable weather conditions. Equipment for outside installation will be stored outside. The objective is to protect equipment, erection materials and selected construction materials against damage, contamination, rusting deterioration and against loss of components, which may result during handling and storage, from the time the items are received at the work site, until they are installed or used. Contractor shall prepare documentation detailing the storage requirements and procedures for each item of equipment and materials. This documentation shall be submitted to THE CLIENT for review and approval prior to implementation. Documentation shall be in place within four (4) weeks of Contractor receiving care, custody and control of such equipment and materials.

The protective measures to be taken at the worksite include:

a) Provide worksite inspection of items as received to verify compliance with the purchase order and renew rust preventive including vapour phase inhibitor or desiccant, where required. Refer to Section 3.0 for acceptable rust preventive, vapour phase inhibitor, desiccants and solvents. Repair all damaged crates.
b) Comply with special procedures recommended by the Contractor.
c) Provide suitable storage considering storage duration, available space and security.
d) Provide regularly scheduled inspections to ensure that protective measures are adequate, drain condensed moisture, flush with solvent, renew rust preventatives or desiccants, where required, and take corrective actions if the existing measures prove ineffective.
e) Purge with dry or lubricated air or nitrogen where required. Pressurise certain equipment with dry or lubricated air or with nitrogen, where the application of oil-based rust preventative, vapour phase inhibitor or desiccants is not acceptable or practical.
f) Rotate the shafts of rotating equipment and turn drive shaft of reciprocating machinery to move pistons, subject to the manufacturer's recommendations at the recommended intervals.

Maintain records of the following information for each item of material or equipment:

a) Specifications.
b) Contractors recommendations and documents relating to matters of equipment protection.
c) Report of condition upon receipt and corrective action taken if received in condition less than acceptable.
d) Schedules showing dates of inspection, shaft rotating, condition of item, and rust preventive action taken or protection action taken.
e) Submit applicable Inspection reports per attachments.

Items of equipment that have been shop primed should be inspected for damage to the primer. Any rusting should be thoroughly hand cleaned and touched up using an approved cleaning and coating method. All small items or tubular goods shall be stored in the palletised closed wooden crates in which such goods have been shipped as per conditions set out in ASTM A-700 (American Society for Testing and Materials, "Standard Practices For Packaging, Marking, and Loading Methods For Steel Products For Domestic Shipment", October, 2000).

Each crate shall be checked to ensure it is labelled with the relevant purchase order number, manufacturer's symbols and an itemised list of the crate's contents. All labelling must be able to withstand weathering up to 12 months with no fading or deterioration.

Particular care shall be given to the inspection of equipment enclosed and taped or heat sealed in a transparent

overwrap, so as to prevent opening or damaging the protective overwrap, unless there is evidence that the hermetical seal has failed in some fashion. A small off-colour indicator type desiccant can be inserted through the transparent overwrap and taped, or heat sealed in place to give indication of failure of the overwrap.

5.2.2. Rust preventives

Rust preventative shall be applied to exposed finished surfaces, and elsewhere as necessary, of equipment received at the worksite that is not adequately protected. Equipment manufacturers shall be consulted for application instructions regarding protection for their specific item of supply.

Table 23: Rust Ban protection for Finishes

Type A Lube Oil Base	Type B Asphalt Base	Type C Grease Base
Rust-Ban 337 (SAE 10W) Pour Point °C	Rust-Ban 373	Rust-Ban 326
Preservative Oil 107 (SAE 20) Pour Point -36°C	---	---
---	Rust-Veto 334 Rust-Veto 342	---
Tectyl 910 (SAE 10W) Pour Point -33°C	Tectyl 890	Tectyl 858-C
Tectyl 930 (SAE 30) Pour Point -21°C	---	Tectyl 506 with Waxy Finish

Three basic types of rust preventives per Table 3.1 shall be available and used as outlined herein. The Client equivalent products shall be used where possible.

Bearings, cylinders and other internal surfaces shall be protected with a lubricating oil base rust preventive, Type A. It may be applied by brushing, splashing, spraying or through lubricating systems. All gearboxes and bearing housings shall be flushed clean to remove rust preventives and accumulated dust prior to putting equipment into service.

External surfaces, where a hard durable finish is desired, shall be protected with an asphaltic base rust preventive, Type B. It may be applied by brushing or dipping. It must be completely removed by a petroleum solvent before installing equipment or putting equipment in service.

External surfaces where removal of Type B rust preventive would be difficult or where a lubricating feature is desirable shall be protected by a petroleum grease base rust preventive, Type C. As an alternative, rust preventive that will dry to a thin plastic or waxy finish may be used if the application does not require lubrication and removal would not be difficult.

Type C rust preventive may be applied by brushing or dipping. It must be completely removed by a petroleum solvent before installing equipment or putting equipment in service. Special water repelling rust preventives and vapour type protection for packaged items or interior surfaces can also be used where necessary for the proper care of stored equipment, subject to prior approval by the Client.

Internal and external surfaces shall be clean and dry before any rust preventive of Type A, B or C is applied. Petroleum naphtha or solvent shall be used for this purpose. Contractor recommendations shall supersede Types A,

Worksite storage and equipment protection

B, C, where specified. THE CLIENT approved alternates may also be used.

5.2.3. Overall storage requirements

Normally, equipment shall be stored such that the setting is similar to the operating position. Fluid containers shall be stored so that openings, such as vents, are partially filled with the contained fluid, thus preventing inward leakage of moisture. Free standing panels, switch racks, etc., shall be stored upright. When internal access is required for inspection, etc., storage shall allow access.

Outdoor Storage

In general, equipment and materials to be installed outdoors may be stored outdoors where accidental damage is not likely to occur. Such items shall be placed on solid supports, pallets or dunnage, in well-drained areas and covered for weather and dirt protection. Supports shall provide at least 25 mm clearance between ground and the item.

Similar type equipment shall be stored in a common area in view of the rust preventive inspection and renewal program, gas pressurising program and supplying power to electrical equipment space heaters. Temporary cribbing or support shall be provided as required for vessels, columns and exchangers that cannot be set in place on foundation or support when received at worksite.

Indoor Storage

In general, equipment and materials to be installed indoors shall be stored indoors on supports providing at least 1-inch clearance between concrete slab and the case or item bottom surface. An insulated and air-conditioned storage space shall be provided for any critical item sensitive to high temperature. Critical items sensitive to moisture shall be stored in an area maintained at least 5°C above lowest daily outdoor temperature or hermetically sealed with desiccant.

Storage buildings for items, which deteriorate at temperatures over 38°C, shall be provided with powered roof vents to prevent high rise of temperature. The need for air intake filters shall be considered. Some indoor type equipment may be stored outdoors if a shed roof and tarpaulin siding, or equivalent, are provided and the equipment or material itself is sealed in plastic film or container and supported at least 25 mm above grade.

Gas Pressurisation or Desiccant Charge

Equipment such as pressure vessels, exchangers, closed tanks, centrifugal compressors, rotary compressors, blowers, steam turbines and gas turbines shall be nitrogen pressurised or have desiccant added whenever so specified by the Contractor. This requirement is applied to large mechanical equipment where the quantity of Type A rust preventive required to half-fill casings exceeds 20 gallons or where contamination of process fluids prohibits the use of Type A fluids. Unless otherwise noted, small pumps, centrifugal compressors, rotary compressors and blowers may be Type A protected as noted in paragraph 5.2.

All protected equipment shall be adequately marked to indicate the type of protection applied.

Gas pressurisation, if required, shall be provided:

a) If equipment is relatively gas tight, the unit may be gas pressurised to 35 kPa. The pressure shall be checked at 2-week intervals, and the gas shall be replenished whenever the pressure decreases 14 kPa.
b) Equipment that is large in volume or has a high leakage rate at 35 kPa may be pressurised 2.5 cm to 5 cm water column and maintained by a pressure regulating valve. A manometer shall be provided at a point on the equipment remote from the pressure connection and shall be monitored at 2-week intervals.
c) Mechanical equipment shall be purged with a quantity of gas equal to 1 to 3 times the casing volume to be protected prior to establishing the normal gas pressurisation level.

Indicator type desiccant, if required, may be provided as follows:

a) Type of equipment will determine the type of desiccant container to use; contamination of some equipment with dust or particles of desiccant may be prohibitive.
b) Desiccant charges shall be located at major openings of equipment. The quantity of desiccant shall be such that protection is provided throughout the period between scheduled inspections; re-sealing of major openings may be required if desiccant life is unduly short. A 2 to 4 week or longer active period is desirable.

Spare Parts Storage

In general, spare parts shall be stored indoors, preferably in a separate spare parts storage area. All spares shall be clearly designated, and the protection measures applied clearly defined. The Client shall be advised of any damage incurred during shipment. As spare parts will be subject to prolonged storage, special attention shall be paid to prevent rust and to protect against general atmospheric weathering.

Lubricant Storage

Lubricants shall not be stored for periods greater than 6 months. Lubricants shall be purchased fresh. Indoor storage is preferred. Adequate space shall be provided for storage and for handling of dispensing equipment, and for cleaning and servicing dispensing equipment. The space shall be kept locked and its use restricted to authorised personnel.

Outdoor storage shall be avoided but, if necessary, drums shall be stored on planks, upright and titled with the bungs at 3 and 9 o'clock positions. All containers shall be elevated and covered with tarpaulin for weather protection. One or more lubricant storage spaces may be located for efficient operation at convenient dispersal points. Storage areas shall be properly covered and smoking not permitted. Adequate firefighting apparatus shall be located for convenient use.

5.2.3.1. Small General Service Pumps, Turbines and Gearboxes

If Contractor has not applied rust preventives or has not made a specific recommendation that rust preventives not be applied, flush all interior surfaces including case, and bearing housing, with solvent or Type A oil, per rust preventive Contractor's instructions, until clean. If packing, or seal, is not installed, pack the clearance between the shaft and housing with rags soaked in Type A oil. Pour sufficient Type A oil into the case and housings such that shaft seal and bearings are covered. Rotate shaft to coat shaft impeller bearings and mechanical seal, drain Type A oil from case and seal the case to prevent ingress of contaminants.

If Contractor has applied rust preventive, check all drains for presence of water. If water is present, prepare equipment for storage as per clause 5.2.1, otherwise the unit can be placed into storage. Renew flange and coupling protection as required. Close all openings. When the equipment is set on its foundation, install a gasketed, blind flange between flanged item and piping. Do not remove blinds until piping has been cleaned. Caps or plugs shall not be removed from threaded connections until connecting piping has been cleaned.

For long-term storage, at least once per six-month period, check casing drain for water. If water is present, drain case, flush, and refill with Type A oil as per clause 5.2.1. Where applicable, drain, flush and refill bearing and packing/mechanical seal, housings. Rotate shaft 1¼ revolutions to mitigate against shaft sag. Do not use tools that will mar the shaft.

Each flange for centrifugal or rotary compressor shall be shipped with protection plates. Preliminary piping fit-up shall be made with plates in place. Plates shall be kept in place as long as possible. The removal of each plate shall be witnessed by THE CLIENT and/or manufacturer's representative and is to be done only immediately before final pipe fit-up.

Worksite storage and equipment protection

5.2.3.2. Gear Units

Protection procedure is the same as for pumps except retain the Type A fluid in the case and, subject to manufacturer's instructions, rotate shaft so that both drive and driven shafts are rotated 1¼ revolutions. During inspection, drain about one litre and replace if not contaminated. If moisture is evident, drain completely, flush with solvent and refill with Type A oil. Take corrective action to prevent recurrence. (Note that Manufacturer's instructions take precedence over the foregoing).

5.2.3.3. Reciprocating Pumps and Compressors

Subject to manufacturer's instructions, protection procedure is the same as for pumps except retain Type A fluid in the cases and housings and turn drive shaft to move piston about 1¼ strokes. Reciprocating compressor cylinders are usually coated with a special film that will be destroyed if the cylinder is stroked. Manufacturer's instructions must be consulted.

Temporary piping or other means shall be provided at suction and discharge to permit piston movement without over pressuring the unit. If required, renew protective coatings on exposed rods, eccentrics, plungers, guides, flanges, threaded openings, etc. Type C protective coating may be used provided outdoor storage cover is adequate. Type B coating is required for uncovered storage and must be removed from reciprocating parts before piston is cycled.

Steam cylinders, liquid cylinders, bearing housing, valve chamber and proportioning/metering pump drive mechanism shall be Type A oil protected. Inspect at 6-month intervals; take and inspect drain sample, as noted in Paragraph 5.4.

5.2.3.4. Internal Combustion Engines

Review Contractor's recommendations for special requirements. If storage period is less than 2 to 3 months, the equipment container and/or component packages shall not be disturbed except where obviously damaged. When storage exceeds 6 months, open and inspect all items and renew all rust preventives as required. Fill radiator system with pre-mixed water and inhibitor. Drain crankcase and fill with Type A oil or renew VSI materials if previously applied by Contractor. Turn engine crankshaft and re-inject Type A oil into cylinders.

5.2.3.5. Instruments and Control Panels

Indoor storage of instruments, except relief and control valves over 2" NPS, shall be required. Refer to Paragraph 4.2 for various types of indoor storage that may be required to provide storage in accordance with Contractor recommendations.

Most containers shall be opened to permit inspection, count, specification check, etc. Renewal of rust preventive coatings, flange covers, hermetic enclosures, VSI materials may be required, depending on type of instrument and expected storage duration. Electronic instruments shall be stored in a dry location at temperatures between 10°C and 50°C. Opening of containers or inclusion of a VSI material may be required to prevent mildew and corrosion. Air-conditioned storage shall be arranged if required by individual equipment specification.

Shop assembled control panels shall be retained in shipping containers until moved to the control room. The desiccant or VSI material included in the panel hermetic enclosure shall be inspected at 6-month intervals and renewed when required.

All valves except as noted in 5.10.1 shall be stored outdoors on a cleared area provided that accessories must not be subject to severe moisture and weather. Machine finish surfaces shall be properly coated, and flange openings shall be protected and sealed. Valves shall be stored on palletised supports with a covering. Outdoor items shall be



inspected at 6-month intervals and rust preventives, cover, etc., renewed when required. Valves shall be stored with stem in approximately vertical position to avoid entrapping moisture and dirt in the bonnet.

5.2.3.6. Piping, Valves and Fittings

Piping

Protection of finished pipe ends and exclusion of dirt shall be enforced. All piping, which will be located in storage more than two to three months, shall be wood stripped both ways to provide 6 mm minimum space between pipes. Open ended pipe shall be set on unequal height supports so pipe is self-draining.

Painted and galvanised pipe shall be handled with care to reduce abrasion of the coating. Valves and Fittings Valve and Fitting items, 2" NPS and smaller, shall be stored indoors. Protection of flanged facing and weld ends shall be enforced. Apart from ring type joints, in general, flange facings' and valve parts' rust preventative coating applied by Contractor, will not require renewal. Inspect and reapply rust preventive on sealing surface of all ring type joint flanges.

Valves

3" NPS and large, may be stored outdoors on covered dunnage. Fittings, 3" NPS and larger, may be stored outdoors on wood supports provided with adequate cover. Renew coating and cover on flanged or other special items as required and provide tarp or film cover. Inspect flanged items at 3-month intervals and renew protecting as required. Other fittings shall be stored on dunnage and positioned so as to be self-draining. Provide wood spacers, bracing, etc., to prevent damage to bevelled ends.

Slide Valves require the following precautions to be taken: The stem of the valve shall be rotated every 2 weeks to stop any breakdown of packing lubricant in the stem-stuffing box assembly. A bag of silica gel shall be installed in any electrical control boxes and electrical equipment shall be sealed against moisture with silicone spray. Manual gear shifts and clevis end rods shall be protected.

5.2.4. Switchgear, Starters and Control Equipment

Except for large outdoor type units, this type of equipment shall be stored indoors in a dry, dust free area and where condensation cannot occur. Space heaters, if provided, shall be powered when units are stored. Free standing metal enclosed units shall be stored upright. Before start-up, check insulation of all electrical circuits using a megger. Low readings indicate that unit requires drying before placing into operation.

5.2.5. Cable and Wire

Large cable reels and wire spools shall be stored outdoors in a cleared and well drained area, on wood supports and covered and protected from corrosion. Protect cable ends using Duct Seal tape or shrinkage caps. Wire rope slings and other lifting cable shall be stored indoors, or outdoors beneath a protective roof as a minimum, hung on racks or stacked on pallets clear of the ground.

5.2.6. Mechanical Equipment protection record

Table 24: Machine Equipment Protection record

	Contract No:
Equipment Name:	Purchase Order No.:
Tag No.:	Contractor Print No.:

Worksite storage and equipment protection

Inspected Upon Arrival By	CONTRACTOR:	Date
	OWNER:	Date
Condition Upon Arrival:		
Type of Protection:		
Rotation Required:	Interval:	

5.2.7. Inspection and rotation history

Table 25: Inspection and Rotation History

DATE	CONTRACTOR	CLIENT	DATE	CONTRACTOR	CLIENT

Comments:

5.2.8. Instrument inspection record

Table 26: Instrument Protection Record

	Contract No:	
Equipment Name:	Purchase Order No.:	
Tag No.:	Contractor Print No.:	
Inspected Upon Arrival By	CONTRACTOR:	Date
	CLIENT:	Date
Condition Upon Arrival:		

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TAG NO.	DATA SHEET NO.	DISPOSITION REMARKS	CHECKED		STORED		P.O.#
			DATE	BY	AISLE	SHELF	

5.2.9. Inspection report for major electrical equipment

Table 27: Inspection Record for Major Equipment

		Contract No:	
Equipment Name:		Purchase Order No.:	
Tag No.:		Contractor Print No.:	
Inspected Upon Arrival By	CONTRACTOR:		Date
	CLIENT:		Date
Visual Examination (Before Off-Loading):			
Visual Examination (After Off-Loading):			
Name Plate Date:			

GENERAL INFORMATION

Item Description:			
Photographs:			
	ES	O	COMMENTS

Worksite storage and equipment protection

Doc. Included					
Lifting Lugs					
Paint Damage					
Glass Damage					
Instr. Damage					
Tagged Properly					
Loose Parts					
Parts Missing					
Special Storage Req'd					
Special Maint. Req'd					
Vdr. Storage Instruct'n					
Estimated Weight:	Lbs		kg		
Dimensions:	L (ft)		Wd (ft)		Ht (ft)
	L (m)		Wd (m)		Ht (m)

Remarks:

5.3. Spare parts requirement

This specification covers the obligations and responsibilities of the Contractor with respect to spare parts, when:

a) Making the equipment quotation.
b) After receipt of the equipment/spare parts Purchase Order.

This specification applies to all equipment supplied, purchased or constructed by all Contractors and Contractors supplying this project. This specification covers spare parts required for commissioning, start-up, and for two (2) years of continuous operation.

All spare parts, wherever practical, will be purchased along with the original equipment. Contractor's quotation shall identify what price protection is available for parts, the nearest stocking point and what parts are unique to the Contractor versus generic parts.

5.3.1. Precedence

Some requirements in this specification may be modified by specific requirements in the Purchase Specification. In case of conflict, the specific requirements supersede this specification. Deviations from this specification must first be submitted, in writing, to THE CLIENT for review and approval. Such written approval must be obtained prior to the commencement of any work that constitutes such a deviation.

5.3.2. General

Items specified or referenced by manufacturers name and/or number are intended to describe the type and quality level or equipment desired and are not intended to be restrictive or to exclude similar items by other manufacturers. Actual component selection will be made in strict accordance with procurement policies established for this project.

Definitions:

Spare Parts refers to parts and assemblies or warehoused units to be purchased with the original equipment order and warehoused at the job site prior to equipment start-up.

Mandatory Spares refers to parts or assemblies, which due to their specialised or custom-made nature (either design or fabrication), will be included in the original Purchase Order. Mandatory (Specialty) spares (as proposed by the Contractor) shall be identified as such in the original bid.

Start-up Spares refers to parts or assemblies, which are supplied to replace originally installed items, subject to damage and breakage during shipment, installation, start-up and initial run-in period. These are also submitted with the original bid.

Operational Spares refers to parts or assemblies, normally used or consumed on the basis of scheduled maintenance, overhauls and inspections, or wear, corrosion, erosion or deterioration in normal service. These parts are identified in the original bid.

Insurance Spares refers to parts and assemblies, which are not normally required for ordinary maintenance, but which may be needed or desirable to avoid extended down time in the event of a major breakdown. These parts are identified in the original bid.

Note: All spare parts must be identified and priced prior to the award of any Purchase Order for original equipment.

Spare parts requirement

5.3.3. Equipment quotation requirements

Contractor shall, unless otherwise specified in the Tender Document, include with the equipment quotation, a quotation for spare parts required for commissioning, start-up, and for two (2) years of continuous operation of the equipment. Contractor shall, in addition to 4.1, recommend spare parts or assemblies, which in his judgment, are best ordered with the original equipment in order to:

a) Achieve economies (e.g. quantity discounts).
b) Eliminate spare parts supply delays.

5.3.4. Requirements upon receipt of purchase order

Contractor shall submit Spare Parts documentation (parts lists, pricing, manuals, drawings, etc.) as soon as possible after authorisation to proceed with manufacture, but not later than was agreed to on the Contractor Data Commitment Form, unless otherwise stated in the Purchase Order.

5.3.5. Spare parts selection guidelines

The recommendation, selection and procurement of spare parts is best accomplished through the combined experience and knowledge of the Contractor and the Client. The Contractor is expected to base his recommendations on his experience with the equipment and parts usage in similar applications and the requirements of this project.

The following factors and their impact on plant operations shall be considered in making recommendations:

a) Spare (stand-by) or single train unit.
b) Critical nature of the service.
c) Severity of the application including job-site environment.
d) Accessibility of the jobsite to qualified service personnel.
e) Availability of local stock in vicinity of the jobsite.
f) Long delivery items.
g) Deterioration in storage.
h) Economics of ordering high cost items with the original equipment, such as rough machined forgings, spare rotor assemblies or complete spare units and sub-assemblies.
i) Price escalation protection.
j) Identification of custom made/unique parts of the Contractor's versus generic jobber parts (i.e. gaskets, bolts, hoses, etc.).

Spare parts recommendations are to include all components, auxiliaries, accessories, controls, drivers, etc. Spare parts for all equipment items included in the scope of Contractor's supply, including subsuppliers' and subcontractors' equipment, shall be fully identified. All component parts of assemblies, kits, etc., shall be listed and identified immediately below the item recommended.

Special tools required for field maintenance and repairs shall be recommended and identified. Contractor is to advise of optional provisions available for the loan or rental of expensive, specialised tools or appliances when required.

Interchangeability

A maximum effort will be required to identify interchangeability of parts. Project-wide interchangeability of common items such as mechanical seals, anti-friction bearings, O-rings, exchanger tubes, filters, pressure switches, etc. requires that the Contractor shall provide complete identification of such items.

Spare parts requirement

Interchangeability within the equipment furnished by the Contractor must be readily identified to assure the availability of the proper parts in sufficient quantities. All spare parts are to be packaged and shipped separately from the equipment, unless otherwise specified in the Purchase Order.

Spare parts shall be identified with the Purchase Order number, Purchase Order item number and Manufacturer's part number. Packaging, marking preservation and long-term storage requirements for spare parts are to be as specified in the Tender Document and/or in the Contract.



5.4. Equipment noise level

This specification:

a) establishes maximum noise level for equipment;
b) defines noise measurement procedures including required noise measurement locations, and
c) defines Contractor information that must be supplied with the proposal.

5.4.1. Codes, regulations, and standards

Contractor shall meet or exceed the requirements of the latest edition of the following codes, regulations and standards, except as superseded herein. In cases where more than one code, regulation or standard apply to the same condition, the most stringent shall be followed. In the event of a conflict between this specification and other specifications or correspondence, the Client shall be consulted and a ruling, in writing, shall be obtained before any work is started.

a) OHS Act Occupational Health and Safety Act (Act 85 of 1993).
b) SANS 0103 Measurement and rating of Environment Noise.
c) ANSI S1.4 "Specification for Sound Level Meters"
d) ANSI S1.9 "Instruments For Measurement of Sound Intensity"
e) ANSI S1.11 "American National Standard for Octave, and Fractional Octave Band Analog and Digital Filters"
f) ANSI S1.13 "Methods for Measurement of Sound Pressure Level in Air"
g) ASME PTC 36 "Measurement of Industrial Sound"

Some requirements in this specification may be modified by specific requirements in the Purchase Specification. In case of conflict, the specific requirements supersede this specification.Any deviation from this specification must receive prior approval, in writing, from THE CLIENT. Such written approval must be obtained prior to the commencement of any work that would constitute such deviation.

5.4.2. Definitions

The unit "dBA" as used in this Specification, is defined as sound pressure level in decibels (reference 20 µPa) as read on a sound level meter set to the "A" weighting network, slow response setting. Sound Pressure Level (SPL), as used in this Specification, is expressed in decibels (reference 20 µPa). Sound Power Level (PWL), as used in this Specification, is expressed in decibels (reference 1 pW). The term "Equipment Train", as used in this Specification, is defined as a system, supplied or packaged by the Contractor, comprised of a driver, all driven equipment including gears and couplings, and all auxiliary equipment.

5.4.3. Noise limits and measure procedures

Noise Limit Consideration

The Client's objective is to procure equipment that will not exceed a noise level of 85 dBA or as otherwise noted on equipment data sheets. The Client will additionally evaluate other noise limits proposed by the Contractor provided the requirements of Section 4.2 are satisfied. Noise from equipment trains includes the total combined noise from driver, all driven equipment, including any gears and couplings, and all auxiliary equipment, supplied, but not necessarily manufactured by Contractor. Individual equipment items in an equipment train supplied by the Contractor need not be limited to 85 dBA provided that the complete equipment train does not exceed 85 dBA when measured in accordance with Section 4.6. Noise limits apply at all operating points within the equipment normal performance range.

Octave-Band Noise Limits

Equipment noise level

Octave-band sound pressure limits in dB for the 85 dBA sound pressure level established in this specification shall generally be as follows:

Table 28: Noise Limits

Octave-Band Centre Frequency (Hz)	1.5	3	25	50	00	000	000	000	000
SPL (dB)	12	01	0	4	8	5	4	4	6

Impulsive or Impact Noise Limits

Impulsive or impact noise shall not exceed 140 dB peak sound pressure level at the measurement locations listed in Section 4.6.

Emergency Services

Emergency services, including, but not limited to safety relief valves, alarms, and fire water pumps, are excluded from meeting any noise limit defined in this specification when operating outdoors.

Measurement Procedures

Sound pressure measurement procedures shall be guided by the provisions of the applicable Standard listed in Section 2.0, or equivalent, except where other test codes are specified. Sound measuring equipment shall meet the requirements of ANSI S1.4, Type 1 sound level meter and ANSI S1.11 octave-band filter Class II.

Noise Measurement Locations

The basic noise measurement locations for individual equipment and equipment trains are listed below. Any deviation in measurement location shall be clearly identified and described on the Contractor's standard Equipment Noise Data Sheet.

Air Cooled Heat Exchangers

Measurements shall be made at the following positions:

a) 1.5 m above grade and horizontal distance of 1.0 m outside the periphery of the coolers. At least four random points around the coolers shall be used.
b) Where header access platforms are furnished 1.5 m above the platform at positions a worker would ordinarily be standing or walking.

Compressor-Driver Trains:

Measurements shall be in accordance with the general provisions of the Performance Test Code (ASME PTC 36).

Pump-Driver Trains

Measured at a horizontal distance of 1.0 m from nearest major equipment surface at an elevation of 1.5 m from the equipment base.

Motors and Generators

Equipment noise level

Measured at a distance of 1.0 m from the nearest major surface of the equipment and at a height of 1.5 m above the base of the equipment.

Exhaust Heads and Vents (including start-up and intermittent service)

Measured at a distance of 1.0 m from the point of exhaust from the discharge to the atmosphere, perpendicular to the direction of flow to the exhaust. (For emergency service refer to Paragraph 4.4.)

Control Valves

Operating at design conditions (with upstream and downstream pipe schedule as indicated on the control valve data sheet), measured 1.0 m downstream of the valve and at a distance of 1.0 m from the pipe.

Diesel Engines, Gas Engines

Measured at a distance of 1.0 m from casing. Measurements should also be taken 1.0 m from any intake or exhaust duct or opening.

Miscellaneous Equipment (equipment not covered by above)

Measured at a horizontal distance of 1.0 m from the nearest major surface of the equipment and at a height of 1.5 m above the base of the equipment.

Noise Reduction Treatment

If an acoustical enclosure or other noise reduction treatment is supplied by the Contractor, the guaranteed noise levels must be met at a distance of 1.0 m from any and all surfaces of the enclosure or treatment.

5.4.4. Proposal data

The following data shall be submitted for each component of each equipment train or for each equipment train as a whole. Supporting calculations and a sketch showing measurement locations shall also be included. The data shall be identified with the equipment and its capacity and be submitted whether or not the maximum permitted noise levels are met.

Permitted Noise Levels

Octave-band and overall sound pressure levels (SPL) and dBA sound levels, at the specified worker exposure locations (shown in Section 4.6), both with and without any proposed acoustical treatment and the additional cost, if any, that may be required to meet the specified criteria.

Octave-band and overall sound power level values (PWL) including Directivity Index for the equipment, both with and without any proposed acoustical treatment. Separate sound power level values shall be given for each emitting source in equipment trains (such as turbine, coupling, compressor combination).

Contractor's base proposal should normally be his standard offering without special construction or equipment to reduce noise. If the equipment environment is not described on the Equipment Noise Data Sheet, the installation is assumed to be in a hemispherical free field, solidly attached to a concrete foundation or reinforced concrete structure.

Outside Permitted Noise Levels
If the noise level is above the specified limits, Contractor shall submit the following information:

Equipment noise level

The description and effect on performance of recommended or proposed modifications necessary to meet Section 4.0 of this Specification, detailed drawings, specifications and engineering design data shall be submitted so that the mechanical design and noise attenuation design may be fully evaluated.

If Contractor does not supply the necessary special noise attenuation devices or enclosures, they shall be defined in sufficient detail to permit THE CLIENT to specify and procure the devices. The description and effect on performances of modifications to reduce the noise level to some intermediate value, if meeting Section 4.2 is impossible.

Advise as to whether modifications described under 5.2.1 and 5.2.2. must be included on the equipment initially or if they can be made later to the installed unit. If the latter, modification must be made without shutdown of equipment.

Excluded Noise Sources

If the Contractor supplies sound levels measured in accordance with an accepted industry standard or practice which does not include important sound sources normally associated with the equipment (e.g. intake and exhaust noise of engines, separately supplied auxiliary equipment, etc.), then the noise levels of the excluded noise sources should be determined and reported as separate items.

Control Valve Contractors

Control valve Contractors shall utilize their standard calculation or measurement procedures for determining control valve noise.

Octave-band Noise

Octave-band noise data is required with Contractor's quotation to permit prediction of the total combined noise from all sources, at any point within the facility and adjacent to the facility, and to assist in the planning of noise attenuation measures.

5.4.5. Test procedures for determining noise levels

If specified on the Client Purchase Order, THE CLIENT may witness noise level tests. Contractor shall notify the Client at least five (5) days in advance of these tests. All noise tests should follow the procedures stated in ASME PTC 36.

If sound level tests are run in an environment not covered in ASME PTC 36, procedures for calculating or correcting the data supplied in the Equipment Noise Data Sheet shall be included in Contractor's proposal. The order of preference for obtaining the required noise data is as follows:

a) From tests of a comparable piece of equipment in an environment remote from other noise sources (shop or field tests) or installed in an operating plant.
b) From noise data obtained by tests on similar equipment and corrected for the actual equipment size and operating conditions. Both measured data and correction procedure shall be reported.
c) From calculation by theoretical or empirical techniques.

5.4.6. Guarantee

Equipment shall be guaranteed to meet the noise limits specified in Section 4.2 of this Specification, unless other limits are agreed to and included in the purchase order. Guarantee shall be stated on the Equipment Noise Data Sheet.

The Equipment Contractor is responsible for noise measurement and shall provide a report to the Client. The

Equipment noise level

Equipment Contractor is not responsible for the total noise level in the environment in which his equipment is installed. The maximum equipment noise levels guaranteed are for the individual piece(s) of equipment measured essentially near field conditions that are reasonably independent of the acoustic characteristic of the environment.

Equipment noi
s

DATA SHEETS

5.5. Passenger lift

Tenderers are required to complete the Lift Installation: Schedule of Technical Information and shall in addition, under separate cover, give full particulars of the equipment and installations offered as well as detailed descriptions of the various methods of control and operation.

Deviations from Specification as Alternative Offer

If answer to 20 in Lift Installation: Schedule of Technical Information is NO, tenderers shall give full details of all deviations between the alternative offered and specified equipment hereunder:

.....

.....

.....

.....

.....

.....

.....
TENDERER'S NAME AND ADDRESS

.....
Signature of Tenderer's

..... Authorised Signatory

TEL NO. ..... DATE : .....

Electrical Works - Specifications

THOYHOYANDOU HIGH COURT

TECHNICAL SPECIFICATION

FOR

REPAIR AND UPGRADE OF THE ELECTRICAL INSTALLATION

MOTLA

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THOYHOYANDOU HIGH COURT – REPAIR AND UPGRADE OF THE ELECTRICAL INSTALLATION.

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SCOPE OF THE PROJECT SPECIFICATION

The Project Specification is set out in four parts. The purpose of each of the four parts is as follows:

Part A : This part of the specification provides general information in respect of the project.

Part B : This part of the specification provides the installation specifications for the equipment and material required for this project. The installation specifications detail the requirements to be complied with and the inspections and testing to be done for each section of the works in order to verify compliance with these specifications.

Part C : This part of the specification provides quality specifications for the equipment and services required for this project.

Part D : Part D specification provides the detail of the equipment and services required specifically for this project.

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PART A

SPECIFICATION FOR ELECTRICAL INSTALLATION

GENERAL SPECIFICATION

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PART A : PROJECT DESCRIPTION AND GENERAL INFORMATION

1. GENERAL

1.1 The work to be carried out under this contract comprises of the electrical services installation at the existing Thoyhoyandou High Court – Limpopo.

1.2 The Project Specification shall be read in conjunction with the schedule of quantities and the drawings contained in this document. Where contradictions occur between the documents, the most stringent requirement shall rule, unless otherwise stated by the Engineer.

1.3 Only equipment based on proven technology and of high reliability shall be considered for use.

1.4 All schedules included in the project documentation shall be completed in full and submitted with the tender. Failure to comply with the above will result in the tender being disqualified.

1.5 All relevant technical information regarding each component or item offered shall be included either in the forms to be completed by the tenderer or as an appendix to the tender in order that the Engineer can make a true evaluation of the offer.

1.6 Tenderers shall be deemed to have waived and renounced any condition printed upon any stationary used by him for the purpose of or in connection with the submission of his tender.

1.7 Where Tenderers choose to offer items imported from other countries, these shall be offered as an alternative offer. Complete technical details of all alternative equipment shall be included in the tender and the Tenderer shall prove that all the requirements of the specification have been complied with.

2. SITE LOCATION AND DETAILS

2.1 The site is situated at Thoyhoyandou in the Limpopo Province.

2.2 The site is subject to the following prevailing conditions.

- Maximum Temperature : 45 ° C
- Minimum Temperature : 4° C
- Relative Humidity : High
- Altitude : ±900 m above sea level

2.3 The system conditions are as follows:

- Supply voltage : 400 V Three Phase Supply
- Rated frequency : 50 Hz

3. DETAILS OF CONTRACT

The work to be carried out under this contract consists mainly of removal of existing redundant material and installation of new material as specified in the bill of quantities and drawings.

4. INSPECTION OF SITE

Tenderers are required to visit the site to thoroughly acquaint themselves with the nature and extent of the work to be done, and to make allowance for items obviously intended and necessary for the proper completion of the work although not specifically specified in this document. Claims due to lack of knowledge will not be entertained. All uncertainties shall be cleared out with the Engineer before the tender closing date.

5. SITE FACILITIES

5.1 No provisions have been made for these facilities under this subcontract. The Electrical Sub-Contractor shall be expected to supply all equipment e.g. scaffolding, ladders and other resources required for the proper execution of the works. Tenderers shall therefore include the costs of these items in their tender prices.

5.2 The Electrical Sub-Contractor may negotiate with the Main Contractor for establishment of stores/yard and site office on the premises.

5.3 Water, electricity and sanitary facilities are available on site. It shall be the responsibility of the Electrical Sub-contractor to make prior arrangements with the existing building manager regarding connection or use of these services. Connection or permission to use any of the existing facilities is strictly at the discretion of the building manager.

6. CONSTRUCTION PROGRAMME

6.1 A detailed construction programme shall be submitted within seven days after acceptance of the tender. This programme shall be finalised in liaison with the Main Contractor and shall have to be approved by the Engineer.

6.2 The Main Contractor's programme shall be co-ordinated with the programme of all his Sub-contractors and shall include allowance for builders holidays and public holidays as specified in the Standard Conditions of Contract.

7. STANDARD SPECIFICATIONS, REGULATIONS AND CODES

7.1 The latest edition, including all amendments up to date of tender of all the applicable SABS specifications, publications and codes of practice including Manufacturers' specifications and installation instructions, shall be read in conjunction with this specification and shall be deemed to form part thereof. All relevant quality and installation specification published by the National Department of Public Works listed in Part B & C of this section of the document shall also be deemed to form part of this subcontract.

8. DELAYS AND OVERTIME

8.1 If the Electrical Sub-Contractor's work should cause any delay to the late completion of the works, he will be held responsible for any claims arising out of such delays in accordance with the stipulations of the Principal Contract.

8.2 Payments for overtime will only be considered if formally instructed by the Engineer and no payment will be made for overtime to maintain progress in accordance with the programme or to make good lack of progress by the Electrical Sub-Contractor.

9. SECURITY OF MATERIALS AND EQUIPMENT

9.1 The Electrical Sub-Contractor shall provide and maintain, at his own cost, all lights, guards, barriers, fencing and safeguarding as may be required for his works, installations, materials, equipment and public safety, until all works have been completed in full. Any materials damaged or stolen from site prior to final handover of the whole project shall be replaced by the Electrical Sub-Contractor with no cost to the Client.

9.2 All materials and equipment e.g. distribution boards, light fittings, etc supplied as part of this Subcontract shall be well protected against damage during transport, off loading, storage and building operations.

10. STORAGE

The Sub-Contractor shall be responsible for provision of an adequate and safe storage for all his materials. All materials shall be stored or stacked in positions that will not interfere with other work in progress in the area, or the safe and unhindered movement of the public in the area.

11. QUALITY OF MATERIALS

11.1 All materials supplied by the Electrical Sub-Contractor under this Subcontract Works shall be new and unused. Only materials of first class quality shall be utilised. Samples of all materials e.g. luminaires, outlets, cable support systems, etc, shall be subject to approval by the Engineer before the procurement process commences.

11.2 All materials shall comply with the relevant specifications as listed in Section 7 above.

11.3 All materials shall be unconditionally guaranteed for a period of 12 months from the date of practical completion of the Whole of the Contract Works. Where Supplier's guarantees are of a shorter duration than 12 months, the Sub-Contractor shall unreservedly agree to the extension and cession of all warranties and guarantees.

11.4 The Sub-Contractor shall replace any materials that are found to be defective during the 12 months defects liability period.

11.5 Factory tests

The Contractor shall arrange factory inspections and tests by the Engineer of equipment manufactured and supplied as part of this Contract e.g. UPS units, standby generator, distribution boards, etc.

12. COMPETENCE OF PERSONNEL, WORKMANSHIP AND STAFF

12.1 The contractor shall ensure that all safety regulations and measures are applied and enforced during construction work on existing live cabling, wiring, distribution boards, luminaires, power points, fixed appliances, etc.

12.2 Only suitably qualified Artisans shall be permitted to carry out work. The Electrical Sub-Contractor shall provide proof of current Artisan qualifications and experience on request.

12.3 Work shall at all times be subject to full time supervision by qualified and experienced Artisans. These representatives must be authorised and competent to receive instructions on behalf of the Sub-Contractor.

12.4 The Sub-Contractor shall at all times have an adequate number of employees, plant and equipment available during the construction period to ensure that the electrical work does not delay the construction programme.

13. FINISHING AND TIDYING

13.1 In view of the fact that the hospital is a public area and that most of the existing buildings around the new building site will still be occupied plus the concentration of construction and other activities likely to be experienced during the Contract period, progressive and systematic finishing and tidying will form an essential part of this Contract. On no account shall soil, rubble, materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of others including safe movement of patients, hospital staff and the public in general. In the event of this occurring, the Client shall have the right to withhold payment for as long as may be necessary in respect of the relevant Works in the area(s) concerned, without thereby prejudicing the rights of others to institute claims against the Sub-Contractor on the ground of unnecessary obstruction.

13.2 Finishing and tidying shall therefore not be left to the end of the Contract, but shall be a continuous operation.

14. PROTECTION OF OTHER SERVICES AND STRUCTURES

14.1 The Sub-Contractor shall take all the necessary precautions to protect finishes, structures and existing services during the execution of the Contract.

14.2 The Sub-Contractor shall be responsible for obtaining information regarding services and existing works which may be affected by the new works. Before the Sub-Contractor commences with any work on site, he must discuss with and have the approval of the

Engineer regarding the method he proposes to use for safeguarding any services and existing works he may encounter during construction.

The cost of all precautionary measures which may be necessary to ensure the safety of such services and existing works, as well as the protection for all persons, shall be borne by the Electrical Sub-Contractor. Any alteration to services which may be required shall be carried out by the Authority concerned at the expense of the Sub-Contractor. The Electrical Sub-Contractor shall be held responsible for any damage, injury or accident caused as a result of his failure to take the necessary precautionary measures.

14.3 The Electrical Sub-Contractor shall, during the execution of this contract, suitably protect the working area and his staff and shall indemnify the Owner in respect of all claims arising out of injury or deaths of any persons lawfully on the premises, whose injury or death is caused by the execution of this Sub-Contract.

14.4 The Sub-Contractor shall also exercise extreme care when and where excavations are made to avoid damage to existing or newly installed services. Any damage to other services shall be rectified forthwith and the costs for the rectification will be recovered from the Sub-Contractor.

15. SHOP DRAWINGS

A set of three (3) copies of all drawings must be submitted to the Engineer for approval before manufacture commences. This specifically applies to the purpose-made distribution boards.

16. INSPECTIONS

16.1 The Engineer will inspect the installation at any time. All inferior, unsuitable, unacceptable or rejected work shall, if indicated by the inspecting officers, be removed and shall be rectified by the Sub-Contractor at his own expense. Under no circumstances will these inspections relieve the Sub-Contractor of his obligations in terms of the document nor will these inspections be regarded as final approval of the works or portions thereof.

16.2 Where inspections are requested by the Engineer, the Engineer's inspection shall only be carried out after the Sub-Contractor has carried out his own preliminary inspection to ensure that the works are completed and comply with the documents. The Engineer's inspection shall therefore not be regarded as supervision, fault listing, quality assurance or site management.

17. SITE TESTS AND COMMISSIONING

17.1 It is the responsibility of the Electrical Sub-Contractor to provide all labour, accessories and properly calibrated and certified measuring instruments necessary for all the tests required under this Sub-Contract.

17.2 Prior to beginning any aspect of commissioning, the Sub-Contractor shall present for the Engineer's review/approval, two copies of a complete commissioning procedures manual including checklists. The relevant checklists shall be utilised and formally signed off as part of the commissioning phase.

17.3 Preparation of commissioning report shall include, but not necessarily limited to:

17.3.1 Manufacturer's operating, servicing and maintenance manuals for each and every individual item of plant installed.

17.3.2 Inventory for the items of mechanical/electrical plant(s) and or equipment that shall be for the installation on the project.

17.4 The following minimum site tests shall be carried out by the electrical contractor and the results presented to the Engineer:

- Insulation resistance between all conductors and earth

- Insulation resistance between all conductors and neutral
- Insulation resistance between all 3 phase conductors
- Resistance of earth path between the main earth bar, all exposed conductive parts of the installation and distribution boards
- Polarity of light switches and socket outlets
- Earth leakage protection
- Phase rotation of three phase circuits

17.5 After submission of the test results, the Electrical Sub-Contractor shall notify the Engineer that the installation is complete, tested and in working order. The Engineer and/or the Client shall witness the re-testing of the installation.

18. AS-BUILT / OPERATING AND MAINTENANCE MANUALS

18.1 The Contractor shall prepare as-built drawings for the complete installation and any other equipment installed as part of this Sub-Contract.

18.2 One copy of the Operating and Maintenance Manuals shall be submitted to the Engineer for approval at least four weeks prior to commissioning of the works.

18.3 Approved "as-built" drawings and documents shall be bound in hard cover dossiers, fully indexed. The same information shall also be submitted on compact disc.

18.4 Hard copies of the test sheets and certificates, Guarantees and Warranties shall also be submitted.

18.5 Three copies of CD and hard copies of all items listed in 18.2 to 18.4 above must be submitted. The Contract will be regarded as incomplete until this requirement has been complied with.

19. 12-MONTH DEFECTS LIABILITY PERIOD

19.1 The equipment and installation supplied under this Sub-Contract shall be guaranteed for a period of twelve months from date of completion of the whole project of the Contract Works. The tender price shall include for the above.

19.2 The defects liability will be for a period of twelve months, calculated from the date of issue of the Certificate of Completion of the whole of the contract works. Retention funds will be reduced to 5% upon the commencement of the defects liability period. The balance of the retention money will be paid out after the lapse of the defects liability, provided the installation has in the opinion of the Engineer been in satisfactory working order during this period.

THOYHOYANDOU HIGH COURT – REPAIR AND UPGRADE OF THE ELECTRICAL INSTALLATION

PART B

SPECIFICATION FOR ELECTRICAL INSTALLATION

INSTALLATION SPECIFICATION

The Standard Installation Specifications published by the South African National Standards listed below form part of the electrical subcontract. The Electrical Sub-Contractor is expected to acquaint himself with the contents thereof and carry out all the installations in strict compliance with the requirements of the specifications unless specified otherwise in the detail specification which is included in Part D of this Subcontract document.

Copies of all the Installation Specifications listed below shall be made available to the Subcontractor by the Engineer on request.

List of Installation Specifications

B.1 Installation and Termination of Conduits and Conduit Accessories

B.2 Installation Of Wiring Channels, Under floor Ducting And Power Skirting

B.3 Installation Of Cable Trays And Ladders

B.4 Fixing Materials

B.5 Wiring

B.6 Installation Of Cables

B.7 Installation Of Light Switches And Socket-Outlets

B.8 Photo-Electric Daylight Sensitive Switch For Outside Lighting

B.9 Installation Of Luminaires

B.10 Connections To Equipment

B.11 Earthing

B.15 Inspections, Testing, Commissioning And Handing Over

THOYHOYANDOU HIGH COURT – REPAIR AND UPGRADE OF THE ELECTRICAL INSTALLATION

PART C

SPECIFICATION FOR ELECTRICAL INSTALLATION

QUALITY SPECIFICATION

The Standard Quality Specifications published by the South African National Standards W listed below form part of the electrical subcontract. The Electrical Sub-Contractor is expected to acquaint himself with the contents thereof and procure all material and equipment required for this project in strict compliance with the requirements of the specifications unless specified otherwise in the detail specification which is included in Part D of this Subcontract document.

Copies of all the Quality Specifications listed below shall be made available to the Subcontractor by the Engineer on request.

List of Quality Specifications

C.1 Conduit and Conduit Accessories

C.2 Wiring Channels, Under floor Ducting And Power Skirting

C.3 Cable Trays And Ladders

C.4 PVC-Insulated Cables 600/1000 V Grade

C.5 Glands For PVC-Insulated Cables

C.6 Cable Terminations and Joints

C.9 Wiring Terminals

C.10 Light Switches

C.11 Unswitched and Switched Socket-Outlets

C.12 Luminaires For Interior And Exterior Applications

C.12.1 Tubular Fluorescent Lamp Luminaires For Interior Applications

C.12.3 Bulkhead Luminaires For Use With Compact Fluorescent Or Tungsten Filament Lamps For Interior And Exterior Applications

C.12.7 High Bay Luminaires

C.12.8 Floodlight Luminaires

12.9 Pendant Luminaires For Use With Compact Fluorescent Or Tungsten Filament Lamps For Interior Applications

C.12.11 Bulkhead Luminaires For Use With Discharge Lamps For Interior And Exterior Applications

C.16 Earthing Electrodes

C.17 Switchboards (Up To 1 KV)

C.20 Moulded-Case Circuit-Breakers



C.23 Direct Acting Indicating Instruments

C.24 Earth Leakage Relays

C.26 Current Transformers

C.27 Indicator Lights

C.28 Triple Pole On-Load Isolators

C.30 Time Switches And Photocells

C.39 Standard Paint Specification

THOYHOYANDOU HIGH COURT – REPAIR AND UPGRADE OF THE ELECTRICAL INSTALLATION.

PART D

SPECIFICATION FOR ELECTRICAL INSTALLATION

DETAIL SPECIFICATION

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PART D : DETAIL PROJECT SPECIFICATION

1. GENERAL

1.1 The work to be carried out under this contract comprises of the repair and upgrade of the installation at the existing Thoyhoyandou High Court in Limpopo.

1.2 It shall be the Electrical Sub-Contractor's responsibility to safely and properly remove all obsolete electrical material and equipment from the buildings before the Main Contractor commences with the demolishing / dismantling work. These shall include but not be limited to the following: distribution boards, cabling, light fittings, power outlets, draw boxes, power skirting, conduit, wiring and wire ways, etc.

1.3 Extreme care shall be taken when working on existing and new live electrical installations. Only qualified electricians shall be expected to work on live installations e.g. distribution boards, cabling, etc.

1.4 The Detail Specification shall be read in conjunction with the Standard Specifications listed in section 3 below, quality and installation specifications forming Part B and C of this subcontract document, schedule of quantities, drawings and the Conditions of Contract for the Main Contract. Where contradictions occur between the documents, the most stringent requirement shall rule, unless otherwise stated by the Engineer.

1.5 All work shall be scheduled in liaison with the Main Contractor to suit his master programme.

2. SCOPE OF WORKS

The scope of the installation shall comprise of the supply, delivery, off-loading, installation, commissioning, testing and guarantee of the following material and equipment associated with the above-mentioned works:

2.1 Isolation, dismantling and removal of all obsolete electrical material and equipment from the existing buildings including cabling, light fittings, power outlets, draw boxes, power skirting, conduit, wiring, etc.

2.2 Compilation of shop drawings, manufacture and installation of new distribution boards

2.3 Upgrading and servicing of existing power distribution boards, where required

2.4 New internal and external lighting installation for building.

2.5 New power installation, power skirtings, etc.

2.6 New wire ways and conduits to lights, socket outlets, power outlets and all electrical equipment and or plant

2.7 New cable tray and ducting installation including new power skirting as indicated on the relevant drawing

2.8 New wiring of lighting and power points with PVC insulated conductors and bare copper earth wire as instructed by engineer.

2.9 Remove and re installation of the PABX system and data cabling installation.

2.10 Draw wires in all conduits installed as part of this contract for communication and other electronic services, wiring to be provided by Others

2.11 Earthing and bonding of metal structures and ware accessories

2.12 Excavation, backfilling and compaction of cable trenches

2.13 New low voltage cable installation

2.14 Upgrading of low voltage cables to sub distribution boards as may be required

2.15 Sleeve and manhole installation

2.16 Services of existing X Ray Scanner and installation of new Metal Detector as specified.

2.17 Installation of new fire detection system as per BOQ's and drawings – work to be carried out by quality approved institute.

2.18 Installation of two new containerized generators complete as per DPW Spesifications.

2.19 Site supervision and quality management

2.20 Commissioning, testing and handing over of complete electrical installation detailed above and to provide "as-built" drawings

2.21 12-month defects liability period from the completion of the whole project.

These aspects should be seen only as a brief summary of the scope of work and not as a complete record. Quantities and volume of work shall be read or obtained from the drawings and the text of the specification.

All components, mounting brackets, draw boxes, junction boxes, cabling, wiring and all other electrical, mechanical and civil works required to complete the works in accordance with the specification, prior to handover, shall be deemed to be included in the tendered rates and prices even though some items may not be mentioned separately. No claims whatsoever, in this regard, will be considered after the contract has been awarded.

3. STANDARDS AND CODES OF PRACTICE

3.1 The electrical work shall be carried out strictly in accordance with:-

- SANS Code of Practice - 10142-1:2003: "The Wiring of Premises"
- SANS Code of Practice - 10313-1999: "The Protection of Structures Against Lightning"
- SANS code of practice – 10139: Fire Detection Systems.
- Occupational Health and Safety Act 85/1993.
- The Municipal By-Laws and any Local Authority Regulations which may be in force
- The Local Fire Office Regulations.

3.2 Manufacturers' specifications and installation instructions.

POWER SUPPLY TO SITE

4.1 Three phase, 400V low voltage mains.

4.2 Local Supply Authority

The successful tenderer shall make all the necessary arrangements with the municipal authority regarding registration work to be done, testing and certificate on completion. Proof of registration shall be submitted to the engineer within 14 days

of the contract being awarded. All regulations and requirements of the local supply authority shall be strictly complied with.

A separate item in the schedule of quantities allows for the liaison as set out above.

4. WORK PROVIDED BY OTHERS

The following work shall be provided by others:

5.1 Mechanical Sub-Contractor

Air conditioning and ventilation equipment shall be supplied and installed by the Mechanical Sub-Contractor.

The Electrical Sub-Contractor shall be responsible for provision of all the necessary outlet points and isolators. The final connection from the isolator to the equipment shall be done by the Mechanical Sub-Contractor.

5.2 Plumbing Sub-Contractor

Geysers where required shall be supplied and installed by the Plumbing Sub-Contractor. The Electrical Sub-Contractor shall be responsible for providing the local isolator and sprague adjacent to each geyser and the final connection from the isolator to the geyser shall be done as part of this Sub-Contract.

5.3 Electronic Services

5.3.1 Supply and installation of all communication systems e.g. data and telephone shall be done by others. The supply and installation of all wire ways including conduit and cable trays for these services shall however, form part of this Sub-Contract.

5.3.2 Cabling and wiring for telephone and data systems shall be carried out by Others

5.3.3 Supply, service or installation of the X – Ray Scanner and Metal Detector shall be carried out by Others as specified in the Bill of Quantities.

5.3.4 Fire detection installer to be approved by engineer. Installer to be registered at S.A.Q.C.C.

6. LOW VOLTAGE CABLE INSTALLATION

6.1 The installation shall comply with Section B6 and B11 of the Installation Specification and Sections C4, C4 and C6 of the Quality Specification.

6.2 The tender price shall include the supply, delivery, installation, testing and commissioning of all the cables specified including the marking off and connections at both ends.

6.3 All cables shall have stranded copper conductors and shall be of the PVC/SWA/PVC type, 600/1000V Grade and shall comply with SANS 1507. Cables with aluminium conductors are not acceptable.

6.4 All terminations shall be done with lugs, glands and shrouds as specified. Shrouds shall cover the gland completely.

6.5 All cables shall be labelled at both ends. The cables shall be labelled by means of "Grafoplast" or approved type cable markers. The cable label shall indicate the full name of both distribution boards. Thus if DB A1 feeds DB B2, the label at each cable end shall read "DB A1/DB B2".

6.6 Copper earth continuity conductors shall be installed with all low voltage cables, and shall be strapped to the cable at 1500mm intervals.

6.7 Cables in which the phase conductors are colour coded by means of a coloured stripe along the insulation will not be accepted. The entire conductor PVC insulation shall be fully colour coded in red, white, blue or black. The conductors of cables used for single phase loads or connections shall be red and black. Cables with red, white and blue conductors will not be accepted for use on single phase loads or connections.

6.8 All cables shall be tested after installation in accordance with SABS 1507 by means of a 600V megger. In addition all cables shall be phased out to ensure correct phase rotation.

6.9 All test results shall be submitted to the Engineer in writing, before the final commissioning of the equipment and cables take place.

6.10 It shall be the responsibility of the Electrical Sub-contractor to determine the correct lengths of cable required on site, before placing an order. The Sub-Contractor shall not be reimbursed for any surplus or shortfall of cable.

6.11 Main cable reticulation into the building shall be via flexible cable sleeves installed in ground. Inside the buildings, the reticulation shall be by means of cables installed on either cable trays or trunking run in the ceiling void and service shafts.

6.12 The Sub-Contractor shall take cognisance of the fact that other services might be installed along the same routes as the cables. The Sub-Contractor shall, before commencing with any work, mark out the proposed cable route and confirm it with the Engineer.

6.13 Joints will not be permitted in any of the low voltage cables.

6.14 Cables Installed on Cable trays

6.14.1 Cables shall be fixed to the cable trays by means of stainless steel strapping at 600mm spacing.

6.14.2 The Contractor shall plan cable runs prior to installation of cables as crossing of cables will not be accepted unless it is impossible to avoid.

6.15 Cables schedule

Refer to Bill of Quantities for details.

7. DISTRIBUTION BOARDS

7.1 General

7.1.1 The Sub-Contractor to note that some of the existing structures on site shall be demolished / dismantled as part of this contract. It shall be the Sub-Contractor's responsibility to safely and properly remove all obsolete electrical material and equipment including the distribution boards from the buildings before the Main Contractor commences with the demolishing / dismantling work.

7.1.2 Extreme care shall be taken when working on existing live electrical installations. Only qualified electricians shall be expected to work on live distribution boards.

7.1.3 Existing Distribution Boards

Where existing distribution boards need to be upgraded, the Electrical Sub-contractor shall be expected to carry out the following work in each existing distribution board:

(a) Examine the existing DB enclosure for adequacy where additional circuits are required first; any comments shall be forwarded to the engineer

(b) Inspect and clean the distribution board, treat the enclosure for moisture ingress and corrosion.

(c) Check for rigidity and fastening of equipment trays, panels, doors and door handles.

(d) Check locking mechanism and fit padlock (if applicable).

(e) Replace damaged or missing faceplates, doors, mounting frames, handling devices etc.

(f) Remove all obsolete equipment and meters.

(g) Check operation of distribution board equipment and meters, remove existing switchgear and wiring and install new CBI switchgear and rewire the board according to the new line diagrams. All new distribution board equipment shall bear the SABS mark of approval

(h) Re-arrange wiring and equipment to give a neat installation.

(i) Check and fasten wiring and cable terminations.

(j) Check earth bar and earth continuity

(k) Fit labelling and any blank face plate covers.

(l) Test and commission the distribution board and issue a certificate of compliance for each distribution board.

7.1.4 New Distribution Boards

(a) Manufacture

(i) Electrical Sub-Contractor is advised to order all new distribution boards from a reputable manufacturer as inferior boards will not be accepted.

(ii) The Electrical Sub-Contractor to note that manufacturer of the distribution boards shall only commence after approval of the factory drawings by the Engineer.

(iii) Distribution boards shall be of the surface mount type with pad lockable doors.

(iv) All equipment shall be mounted behind removable panels.

(v) The front panel of the board shall be secured by means of the Perano or Procast type knurled edge catches. Catches with slots or square key facilities will not be acceptable. Each front panel shall also be fitted with 2 approved D type handles top and bottom, to assist removal and replacement.

(vi) Door hinges shall be of the "Procast" or similar type. All panels shall be supplied with handles.

(b) Equipment

(i) All distribution board equipment shall bear the SABS mark of approval and be of Merlin Gerin or CBI manufacture or approved equal.

(ii) All phase, neutral and earth bars shall be adequately sized to accommodate the specified circuits as well as allowance for 40% future circuits.

(iii) Circuit breakers shall be used in the cascade arrangement and only cascade arrangements proven by SABS tests shall be utilised throughout.

(iv) All circuit breakers shall be rated for a fault level as indicated on the relevant distribution board schematic diagram.

(c) Drawings

(i) Three sets of manufacturers drawings of each new distribution board shall be submitted for approval by the Engineer before manufacture of the distribution board may commence.

(ii) It shall be noted that late approval of drawings and distribution boards due to non-compliance with the specification will not relieve the Sub-Contractor from his obligations to complete the installation according to programme. No claims for delays or for extension of time in this regard will be entertained.

8. CONDUITS, POWERSKIRTING, BEDHEAD UNITS, CABLE TRAYS AND CABLE DUCTS

8.1 Conduits

8.1.1 All conduits and accessories shall bear the SABS mark of approval.

8.1.2 PVC conduit and accessories may be used for indoor installation unless specified otherwise.

8.1.3 All external conduits exposed to sunlight or rain shall be galvanised steel. External draw box covers shall be sealed with white silicone after the installation is completed.

8.1.4 Conduit installation on masonry wall surfaces shall **not** be permitted inside and outside the building. For existing structures, the Electrical Sub-Contractor shall, as far as possible run his wiring via existing conduit installed inside walls to avoid chasing of the existing masonry walls. Should new points which cannot be accessed via existing conduit work be required, the Electrical Sub-Contractor shall request permission from the Engineer to chase the conduit into the existing walls. The contractor shall make allowance in his price for chasing of walls as required.

8.1.5 All chasing work where approved, shall be carried out by means of power driven machinery using abrasive cutting discs. Chasing by means of hammer and chisel will not be accepted.

8.1.6 Conduit work under open roof structures and inside accessible ceilings shall be done in a rectangular grid pattern. All conduit offsets shall be neat and at equal angles. Steel saddles installed at 1500mm intervals shall be used inside ceilings. Caddy clamps shall be used on roof purlins, maximum spacing of saddles and clamps shall be 750 mm.

8.1.7 All steel conduits shall be securely bonded to earth.

8.1.8 Bushes fitted to steel conduits shall be brass only. Other materials are unacceptable.

8.1.9 All conduits installed for services provided by others shall be fitted with 2,5 mm ø galvanised draw wire if the wiring is not installed as part of this subcontract.

8.1.10 Conduit installed for electronic services inside ceiling voids or on the roof structure shall be colour coded by means of 30 mm wide PVC bands at 1,5 m intervals:

(a) blue - telephone

(b) yellow - data

(c) green- fire detection

(d) red - power

8.1.11 For existing areas, access to new power skirting and all power and communication outlets shall be via conduit installed in the ceiling void. The conduit and cables shall run from the distribution boards via the ceiling void and shall branch off into the various rooms and terminate either in the power skirting or the outlet boxes.

8.2 Power skirting

8.2.1 New power skirting shall be the 165 mm high x 55 mm deep, 2-lid 3-compartment type manufactured from 0.8mm galvanised steel. The Electrical Sub-Contractor shall confirm colour with the Architect and or Engineer before placing an order.

8.2.2 Power skirting shall be supplied complete with purpose-made faceplate equipment and all the necessary accessories including covers, bends, clip-on partitions, etc.

8.2.3 Power skirting shall be used for power, data and telephone wiring and outlets shall be compatible with the power skirting.

8.2.4 At least three 25 mm diameter and two 25 mm diameter PVC conduits shall be used to link any section of the power skirting to the power distribution board and telephone termination board respectively.

8.4 Cable trays

8.4.1 Cable trays shall be the perforated, heavy-duty, 2.5 mm thickness hot dipped galvanised steel type. The cable tray width shall be as specified on the relevant drawings or in the bills of quantities.

8.4.2 Only purpose-made accessories, e.g. splices, risers, offsets and bends shall be used.

8.4.3 Trays shall be fastened onto 500 mm lengths of P2000 unistrut. Each unistrut section shall be fixed to the roof, wall or floor with galvanized 10 mm x 50mm Ø Fisher anchors. Unistrut spacing shall be 600 mm maximum. Only purpose-made accessories shall be used.

8.5 Cable ladders

8.5.1 Cable ladders if required, shall be hot dipped galvanized and all members shall be 2 mm thick, with 76 mm side rails and cross rungs at 375 centres. Cable ladders shall be supported at maximum 800 mm intervals with approved galvanized suspension brackets or P2000 unistrut or 10 mm galvanized threaded rod hangers.

8.5.2 The width shall be as specified and only purpose-made accessories shall be used.

8.6 Trunking

8.6.1 Steel trunking, where required, shall be the hot dip galvanised type with 0,8 thickness complete with elbows, tees and covers. The width shall be as specified.

8.6.2 Where sleeves are not indicated on drawing, any surface-mounted distribution boards not installed behind a cupboard shall be linked to openings in ceilings or floors by means of 127 mm wide, hot dip galvanised steel trunking supplied complete with distribution outlets and covers. The trunking shall be powder coated and the colour shall match the DB exterior colour.

9. LIGHTING INSTALLATION

9.1 General

9.1.1 The Electrical Sub-Contractor shall allow for the supply and installation of the complete new internal lighting system as indicated on the relevant drawings.

9.1.2 The successful tenderer shall be required to remove all the existing fittings, wire ways, wiring, etc from the existing theatre before commencing with the new installation. Due allowance shall be made in the tender price for this.

9.1.3 Samples of luminaires shall be submitted to the engineer for approval before ordering commences.

9.1.4 All light fittings shall be delivered to site in boxes as packed by the manufacturer. When the work is handed over, all light fittings shall be in a working condition, new and unused.

9.1.5 The permanent light fittings intended for installation shall not be used for temporary lighting during construction. The certificate of completion for the installation will not be finalised, unless all light fittings and lamps are in working order.

9.1.6 All linear fluorescent type luminaires shall be equipped with high efficiency 16 mm diameter tubes (T5), generally 600 and 1200 mm long and with a colour temperature of 4 300 k (cool white) and minimum colour rendering index (Ra) of 64 unless otherwise stated. The engineer will reject unmarked lamps. All costs to replace these lamps with marked lamps will be for the contactor's account.

9.1.7 All PL type lamps shall be colour 41, with a temperature of 2 700 k. Lamps not marked thus will not be accepted, as stipulated above.

9.1.8 Wiring for the lighting installation shall generally be installed inside conduits. 63mm deep x 76mm wide galvanised steel wiring duct with pre-punched knockouts for 3-pin sockets shall be used where indicated on the drawing.

9.1.9 Special care shall be taken to ensure that conduit connections do not violate the IP rating of luminaires. This applies specifically to the exterior luminaires. Mounting holes and conduit entries shall be sealed with black silicone after connection.

9.1.10 No luminaires shall be fitted to masonry wall with fasteners smaller than 3,5 mm diameter and a wall plug smaller than 8 mm diameter. Galvanised 30 mm ø fender washers shall be used with each fastener.

9.1.11 Tenderers to note that recessed type fluorescent luminaires shall be installed in all office areas and corridors. Wiring to the recessed fluorescent fittings shall consist of 20 mm conduits and standard 100 x 50 mm draw boxes above the ceiling. In close vicinity of the luminaire positions, 1 x 6A unswitched socket outlet shall be provided, fixed to the conduits for support, for power supply to luminaires. All indoor fluorescent luminaires shall therefore be supplied with 3 m electrical cord fitted with a 6 Amp plug.

9.2 Light Switches

9.2.1 Tenderers to note the 16A current rating of light switches.

9.2.2 100 x 50 x 50 mm draw boxes shall be provided for light switches.

9.2.3 Light switches shall be the 16A, of Crabtree or Clipsal manufacture or similar approved equal, supplied complete with white cover plate.

9.2.4 Photocell shall be accommodated inside IP 65 bulkhead luminaires. No direct switching of lighting circuits via photocell contacts shall be accepted.

9.3 Mounting position

9.3.1 Internal and external light fittings shall be installed at positions shown on the relevant lighting drawings.

9.3.2 Mounting heights for wall mounted light fittings shall be as shown on the relevant drawings.

9.3.3 Chasing for new external light fitting installation, if required, shall be done from the inside of the building and a hole shall then be drilled though the existing wall onto the new light point.

9.4 Schedule of Luminaires

9.4.1 All luminaires shall bear the SABS mark of approval. Luminaires shall be provided complete with lamps and control gear.

9.4.2 The following luminaire types are to be installed in the positions indicated on the drawing:

Type	Description
A	(1200 mm x 600 mm) 60W Recessed LED Flat Panels, complete with control gear, surge protect, Ra-80, 4000k, life span of 50 000h and 3 m power cord.
AA	Same as per A with 1hour battery backup.
B	(600 mm x 600 mm) 60W Recessed LED Flat Panels, complete with control gear, surge protect, Ra-80, 4000k, life span of 50 000h and 3 m power cord.
BB	Same as per B with 1hour battery backup.
C	2 x 28 W Open Channel Flourescent Light Fitting complete with lamps and ECG.
D	Bulkhead – 20W LED Light Fitting complete with lamp and ECG.
DD	Same as per B with 1hour battery backup.
F	Prison Light – Tamper Proof 2 x 28 W Fluorescent Light fitting complete with lamps and ECG.
G	Weatherproof – 2 x 28 W Fluorescent Light Fitting.
H	LED Emergency Exit Signs Complete with 1 hour battery backup.

10. POWER INSTALLATION

10.1 General

10.1.1 The Electrical Sub-Contractor shall be expected to safely and properly remove all obsolete electrical material and equipment from the existing buildings. Due allowance for this shall be made in the bills of quantities.

10.2 Power skirting

10.2.1 All power skirting outlets shall be compatible with the power skirting installed as part of this contract.

10.2.2 Normal outlets shall be the standard 16 Amp, 3-pin of the switched type. Dedicated outlets shall be red 16 A, 3 pin of the switched type with a half round earth pin. One red plug top shall be supplied with each dedicated socket outlet installed.

10.2.3 Outlets for cassette type air-conditioning units in offices, if required, shall consist of 30 Amp double pole isolators mounted in the power skirting with "cord grip" grommets to accommodate the air conditioner cable.

10.2.4 Telephone and data outlets shall consist of purpose-made outlet covers. Telephone outlets shall be RJ11 sockets. Data outlets shall consist of RJ45 sockets.

10.3 Single phase socket outlets in wall

Normal socket outlets shall be the 16 Amp, flush mounted double 3-pin switched socket with white cover plates.

10.4 Isolators

10.4.1 Local isolators for hand dryers, shall consist of normal 20A recessed double pole complete with outlet box, white cover plate and "cord grip" grommet to accommodate the hand dryer cable; final position shall be agreed on site.

10.4.2 Isolators for geysers in ceiling void shall consist of 30A surface mounted double pole complete with outlet box and cover plate. Final position shall be agreed on site.

10.4.3 Isolators for external air conditioning units shall consist of surface mounted double or triple pole units contained inside 200 x 100 x 100 polycarbonate weatherproof boxes with vertical sliding doors with cord outlets. For internal units, the isolators shall generally consist of normal 30A double pole recessed either in wall or surface mounted in ceiling void complete with outlet box, white cover plate and "cord grip" grommet to accommodate the cable; final position shall be agreed on site.

11. WIRING

11.1 All internal wiring shall generally comprise of PVC insulated stranded copper conductors and bare stranded copper earth continuity conductors.

11.2 Only new wiring shall be used under this Sub-contract.

11.3 Wiring shall not be drawn into conduit until the conduit installation has been completed, fitted with bushes and all moisture and debris has been removed.

11.4 No joints of any kind shall be permitted in wiring. No more than 1 single or 1 three phase circuit may be drawn into any conduit.

11.5 No "surfix" / "twin & earth" wiring will be accepted.

11.6 The following minimum conductor sizes shall be used:

Circuit	Minimum conductor (size)	
	Phase (mm^2)	Earth (mm^2)
Lighting	2.5	2.5
Socket outlet	4	2.5
Geyser	4	2.5
Hand dryer	4	2.5
Air conditioning unit	4	2.5

11.7 Wiring for information and communication services i.e. data and telephone, shall be supplied, installed and terminated by Others. The Electrical Sub-Contractor shall only be responsible for provision of all wire ways, sockets and termination panels required for such installations. Steel draw wires shall also be provided by the Electrical Sub-Contractor in all conduit and other wire ways provided for information and communication services as indicated on the relevant drawings.

12. TELEPHONE AND DATA INSTALLATION

12.1 The supply, delivery and installation of the telephone distribution boards, conduit, draw boxes, outlets and cover plates, external sleeves and manholes form part of this contract.

12.2 Telephone points not installed in power skirting shall be flush mounted 100 x 50 x 50 mm draw boxes complete with cover plate.

12.3 2,5mm diameter galvanised draw wire shall be installed in all telephone and data conduits. All information and communication outlet points shall be interlinked by means of 25mm diameter conduit which shall terminate in the telephone distribution boards supplied and installed as part of this Sub-Contract.

12.4 Telephone outlets shall be RJ11 sockets and data outlets shall be the RJ45.

12.5 Telephone distribution board shall be 600mm x 500 mm surface mounted cabinet with door and fitted with a wooden backboard. The board shall be labelled "Telephone DB". Engraved labels shall be used.

13. CABLE SLEEVES AND MANHOLES

13.1 All electrical and communication sleeves and manholes shown on the drawings shall be supplied and installed as part of this Sub-Contract.

13.2 The sleeves shall be installed at a minimum depth of 600mm below final ground level.

13.3 Crossings of all sleeves must be at 90º with the communication sleeves on the top.

13.4 All communication sleeves shall be fitted with 4 mm ø galvanised draw wire.

13.5 On completion of the project, the end of all unused sleeves shall be sealed with paper and weak cement mixture.

14. EARTHING AND BONDING

14.1 General

14.1.1 The Electrical Sub-Contractor is to ensure that the installations covered in this document are effectively earthed and bonded in accordance with the requirements of SABS 0142.

14.1.2 All hot and cold water and waste metal pipes are to be effectively bonded by means of 12,5 mm x 1,6 mm solid or perforated copper tape (not wire), clamped by means of brass bolts and nuts. The tape is to be fixed to walls by means of rounded brass screws at intervals not exceeding 150 mm.

14.1.3 Metal cable supports and others structures e.g. aerials shall be bonded by means of green insulated copper earth conductor of 16mm^2 minimum size. The same shall apply to medical electrical equipment such as dental chairs, etc.

14.2 Supplementary equipotential bonding

14.2.1 An equipotential bonding busbar housed in a recessed draw box shall be provided at the position shown on the relevant drawings. A 300mm wide x 300mm high draw box with painted cover plate with handle shall be used for this purpose.

14.2.2 The subcontractor to note that the resistance of the conductors between the equipotential bonding busbar and terminals for the protective conductors of outlets for fixed equipment or of any extraneous conductive parts shall not exceed 0,2Ω.

15. BALANCING OF LOADS

The Electrical Sub-Contractor shall be responsible for the measurement, testing and balancing of load between all the phases of busbars to the satisfaction of the Engineer. Distribution board equipment shall be connected in such an order that the load is balanced across all three phases.

16. SITE TESTS AND COMMISSIONING

17.1 It shall be the responsibility of the Electrical Sub-Contractor to provide all labour, accessories and properly calibrated and certified measuring instruments necessary for all the tests required under this contract.

17.2 Prior to beginning any aspect of commissioning, the contractor shall present for the Engineer's review/approval, two copies of a complete commissioning procedures manual including checklists. The relevant checklists shall be utilised and formally signed off as part of the commissioning phase.

17.3 Preparation of commissioning report shall include, but not necessarily limited to:

17.3.1 Manufacturer's operating, servicing and maintenance manuals for each and every individual item of plant installed.

17.3.2 Inventory for the items of mechanical/electrical plant(s) and or equipment that shall be for installation in the project.

17.4 The following minimum site tests shall be carried out by the electrical contractor and the results presented to the Engineer:

- Insulation resistance between all conductors and earth
- Insulation resistance between all conductors and neutral
- Resistance of earth path between the main earth bar, all exposed conductive parts of the installation and distribution boards
- Polarity of light switches and socket outlets
- Earth leakage protection

17.5 After submission of the test results, the Electrical Sub-Contractor shall notify the Engineer that the installation is complete, tested and in working order. The Client and/or the Engineer will witness the re-testing of the installation.

17. MAINTENANCE PERIOD

18.1 The equipment and installation supplied under this Sub-Contract shall be guaranteed for a period of twelve months from date of completion of the whole project of the Contract Works. The tender price shall include for the above.

18.2 The maintenance period will be for a period of twelve months, calculated from the date the installation has been taken over by the Client. Payment of the full amount

of the retention money will be effected after the lapse of the maintenance period, provided the installation has been in satisfactory working order during this period.

18.3 THOYHOYANDOU HIGH COURT:

SCHEDULE OF DRAWINGS

DRG No.	DESCRIPTION
	New Lighting Layout (A1) – Ground Floor
	New Power Layout (A1) - Ground Floor
	New Distribution Board Line Diagram (A3) – DB- A1
	New Distribution Board Line Diagram (A3) – DB- A2
	New Distribution Board Line Diagram (A3) – DB- A3
	New Distribution Board Line Diagram (A3) – DB- A4
	New Distribution Board Line Diagram (A3) – DB- A5
	New Distribution Board Line Diagram (A3) – DB- A6
	New Distribution Board Line Diagram (A3) – DB- A7
	New Distribution Board Line Diagram (A3) – DB- A8
	New Lighting Layout (A1) – First Floor
	New Power Layout (A1) – First Floor
	New Fire Detection Layout (A1) – Ground Floor
	New Fire Detection Layout (A1) – First Floor

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THOYHOYANDOU HIGH COURT – REPAIR AND UPGRADE OF THE ELECTRICAL INSTALLATION.

TECHNICAL DATA SCHEDULE

The trade name and/or catalogue numbers of all equipment forming part of the tender offer must be submitted. This information schedule must be fully completed by the Contractor.

1. **General Electrical**

1.1 Cables

(a) Manufacturer :.....

(b) Type :.....

(c) Complies with SABS 1507 :..... (Yes/No)

1.2 Labeling system for cables

(a) Manufacturer :.....

(b) Type :.....

1.3 Cable trays

(a) Manufacturer :.....

(b) Type :.....

1.4 Cable ladders

(a) Manufacturer :.....

(b) Type :.....

1.5 Cable trunking

(a) Manufacturer :.....

(b) Type :.....

1.6 Wall-mounted isolators

1.6.1 Flush-mounted double pole

(a) Manufacturer :.....

(b) Type (No of pins) :.....

(c) IP rating :.....

1.6.2 Flush-mounted triple pole

(a) Manufacturer :.....

(b) Type (No of pins) :.....

(c) IP rating :.....

1.6.3 Surface mounted double pole

(a) Manufacturer :.....

(b) Type (No of pins) :.....

(c) IP rating :.....

1.6.4 Surface mounted triple pole

(a) Manufacturer :.....

(b) Type (No of pins) :.....

(c) IP rating :.....

1.7 Light switches

(a) Manufacturer :.....

(b) Range / Type :.....

(c) Current rating :.....

(d) Industrial type: manufacturer :.....

(e) Industrial type: current rating :.....

(f) Industrial type: IP rating :.....

1.8 Switched socket outlets

(a) Manufacturer :.....

(b) Range / Type :.....

(c) Current rating :.....

1.9 Telephone outlets

(a) Manufacturer :.....

(b) Range / Type :.....

(c) To spec :..... (yes/no)

1.10 Data outlets

(a) Manufacturer :.....

(b) Range / Type :.....

(c) To spec :..... (yes/no)

1.11 Luminaires

1.11.1 Type A : (1200 mm x 600 mm) 4 x 28 W Recessed Single Parabolic Fitting, complete with T5 Lamps, Electronic Control Gear and 3 m power cord.

(a) Manufacturer :.....

(b) Type :.....

(c) Complies with Spec? :..... (Yes/No)

1.11.2 Type B : 2 x 28 W Surface Mounted Single Parabolic Fitting complete with T5 lamp and ECG.

(a) Manufacturer :.....

(b) Type :.....

(c) Battery back-up time :.....

(d) Complies with Spec? :..... (Yes/No)

1.11.3 Type C : 2 x 28 W Open Channel Flourescent Light Fitting complete with lamps and ECG.

(a) Manufacturer :.....

(b) Type :.....

(c) Complies with Spec? :..... (Yes/No)

1.11.4 Type D : Bulkhead – 2 x 18 W Light Fitting complete with lamp and ECG.

(a) Manufacturer :.....

(b) Type :.....

(c) Battery back-up time :.....

(d) Complies with Spec? :..... (Yes/No)

1.11.5 Type E : Recessed Downlighters – 2 x 18 W Light Fitting complete with Lamp and ECG.

(a) Manufacturer :.....

(b) Type :.....

(c) Complies with Spec? :..... (Yes/No)

1.11.6 Type F: Prison Light – Tamper Proof 2 x 28 W Fluorescent Light fitting complete with lamps and ECG.

(a) Manufacturer :.....

(b) Type :.....

(c) Battery back-up time :.....

(d) Complies with Spec? :..... (Yes/No)

1.11.7 Type G: Weatherproof – 2 x 28 W Fluorescent Light Fitting.

(a) Manufacturer :.....

(b) Type :.....

(c) Battery back-up time :.....

(d) Complies with Spec? :..... (Yes/No)

1.11.8 Type H: Emergency Exit Signs Complete with 1 hour battery back up.

(a) Manufacturer :.....

(b) Type :.....

(c) Battery back-up time :.....

(d) Complies with Spec? :..... (Yes/No)

1.12 Photocell

(a) Manufacturer :.....

(b) Installation method :.....

(c) Type and IP rating of enclosure :

1.13 Wiring

(a) Manufacturer :.....

(b) Type :.....

(c) Complies with Spec :..... (Yes/No)

1.14 Labeling system for wiring

(a) Manufacturer :.....

(b) Type :.....

1.1 1.15 Distribution boards

Surface-mounted distribution boards

(a) Manufacturer :.....

(b) Enclosure type :.....

(c) Current density of busbars :.....A/mm²

1.16 Circuit breakers

(a) Manufacturer :.....

(b) Trade name :.....

(c) Port of delivery :.....

(d) Minimum fault level :..... kA

1.17 Isolators

(a) Manufacturer :.....

(b) Trade name :.....

(c) Minimum fault level :..... kA

1.18 Earth leakage units

(a) Manufacturer :.....

(b) Sensitivity rating :.....

(c) Minimum fault level :..... kA

1.19 Contactors

(a) Manufacturer :.....

(b) Type :.....

(c) Current rating reference :..... (e.g. AC3)

(d) Control voltage :.....

1.20 Powerskirting

(a) Manufacturer :.....

(b) Type :.....

(c) Dimensions :.....

(d) To spec? :.....yes/no

:

2. TENDER QUALIFICATIONS

Please list all the Tenderer's deviations from this specification.

(a).....

(b).....

(c).....

(d).....

(e).....

(f).....

(g).....

(h).....

SIGNED ON BEHALF OF TENDERER : .....

NAME IN FULL : .....

COMPANY : .....

DATE : .....

SCHEDULE OF PROPOSED SUBCONTRACTORS

The tenderer shall list below any subcontractors he wishes to employ to carry out part(s) of the work. The acceptance of this tender shall not be construed as being approval of all or any of the listed subcontractors. Should any or all of the subcontractors not be approved subsequent to the acceptance of the tender, it shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding even in the event of a subcontractor not listed below being approved by the employer.

PART OR TYPE OF WORK	PROPOSED SUBCONTRACTOR	WORK RECENTLY EXECUTED BY SUBCONTRACTOR	TYPE OF TRAINING TO BE OFFERED

SIGNED ON BEHALF OF TENDERER : .....

DATE : ……..

public works & infrastructure
Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

DPW-23 (EC): SCHEDULE FOR IMPORTED MATERIALS AND EQUIPMENT

Project title:	***Thohoyandou High Court: Repairs and Renovations***		
Tender no:	*PLK23/09*	**Reference no:**	*6054/0070*

This schedule should be completed by the tenderer. *(Attach additional pages if more space is required)*

Item	Material / Equipment	Rand (R) (Excluding VAT)
1.		**R**
2.		**R**
3.		**R**
4.		**R**
5.		**R**
6.		**R**

The Contractor shall list imported items, materials and/or equipment which shall be excluded from the Contract Price Adjustment Provisions (if applicable) and shall be adjusted in terms of currency fluctuations only. Copies of the supplier's quotations for the items, materials or equipment (provided that such costs shall not be higher than the relevant contract rate as listed above) should be lodged with the Principal Agent / Engineer of the Department of Public Works and Infrastructure within 60 (sixty) days from the date of acceptance of the tender. No adjustment of the local VAT amount, nor the contractor's profit, discount, mark-up, handling costs, etc. shall be allowed.

These net amounts will be adjusted as follows:

FORMULA:

The net amount to be added to or deducted from the contract sum:

$$A = V\left(\frac{Z}{Y} - 1\right)$$

A = the amount (R) of adjustment

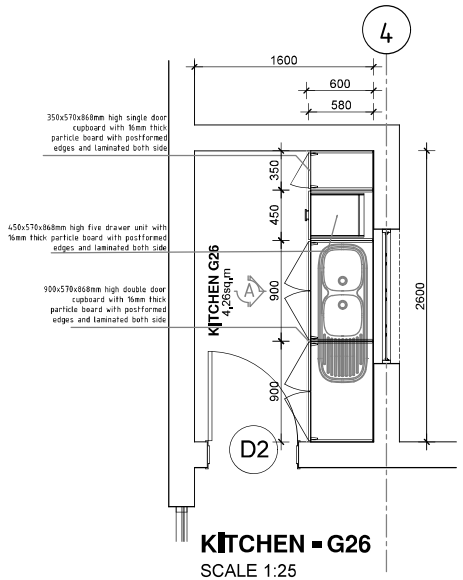
V = the net amount (supplier's quotation) (R) of the imported item

Y = exchange rate at the closing date of tender submission

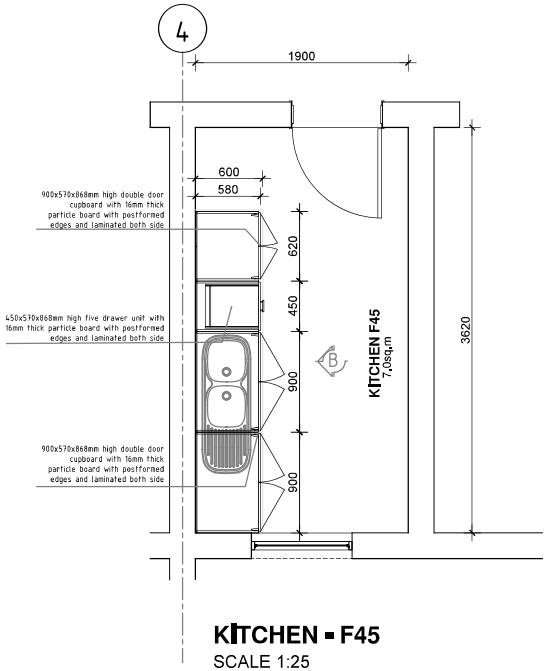
Z = exchange rate on the date of payment.

Name of Tenderer	Signature	Date

T2.2 Returnable Documents: Other documents that will be incorporated into the contract



KITCHEN - G26
SCALE 1:25



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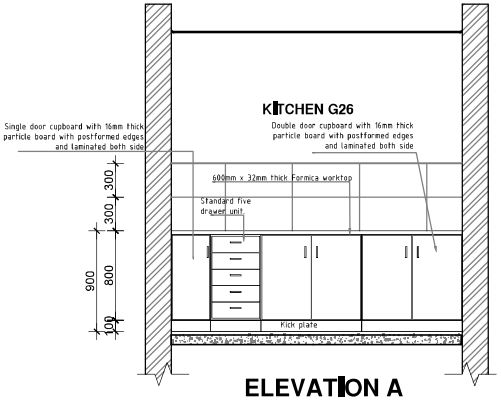
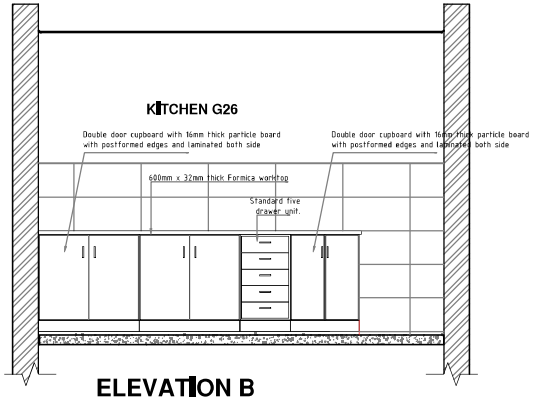


ELEVATION A
SCALE 1:25



ELEVATION B
SCALE 1:25

No.	DATE	AMENDMENT	DRWG

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drawings

certified drawings as per Centralised Drawing Archive DRAWING REQUIREMENTS

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date: 03 February 2021

professional registration no: PrArch 21026

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page type: A 1

public works
Department:
Public Works
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POLOKWANE

discipline: ARCHITECTS

service

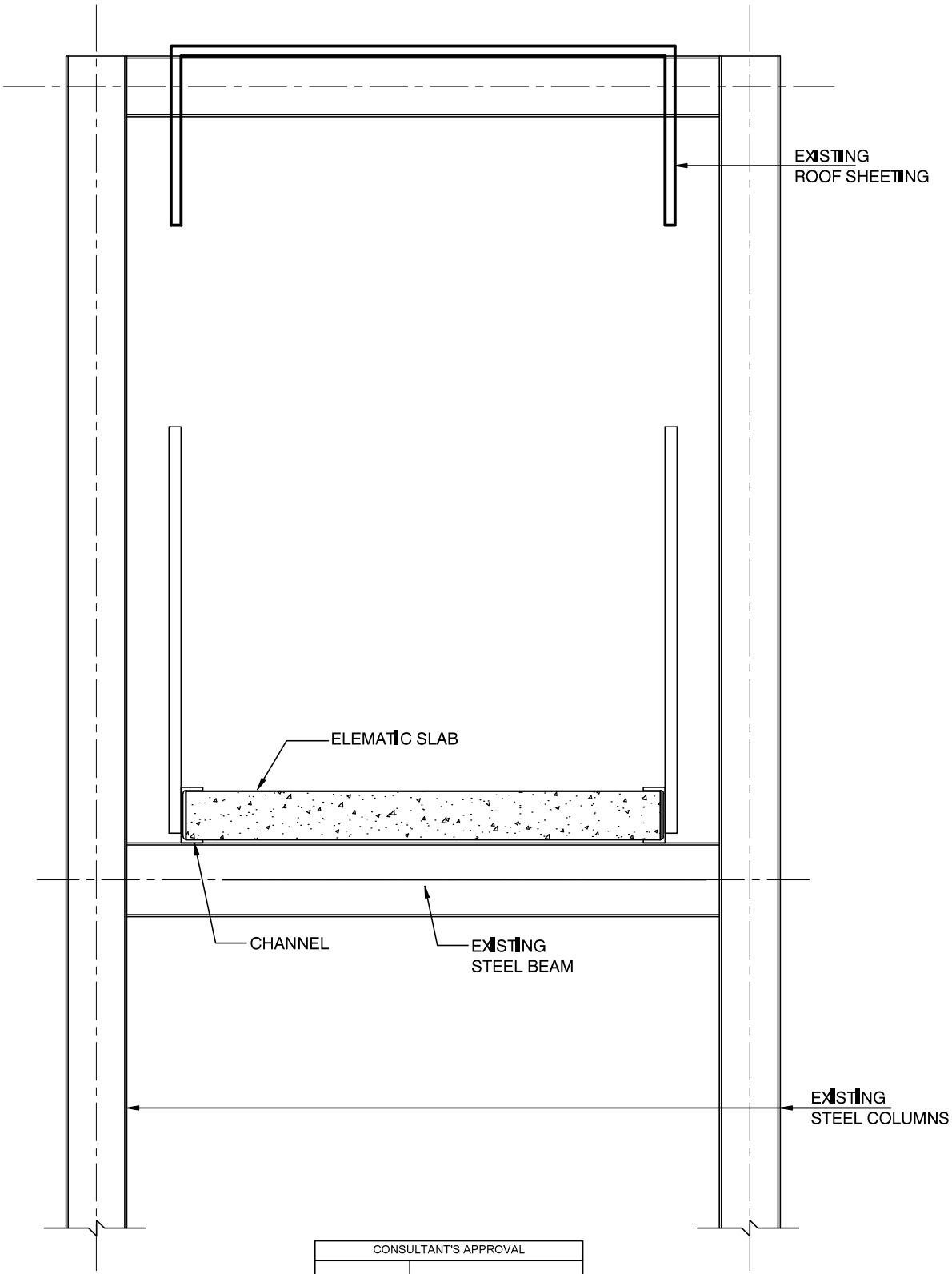
REPAIR AND RENOVATIONS FOR THOHOYANDOU HIGH COURT

WCS number: 048609

drawing title: JOINERY DETAILS

ref no: 16/KMS/100	designed: P KAGORI
scale: 25	drawn: T MPE
date: 2016.12.02	checked: P KAGORI

drawing number: 25649/JOINERY/510



CONSULTANT'S APPROVAL	
NAME	S S SEMENYA
DATE	12-02-2021
Prof. Reg. No.	940386

GRO ENGINEERS
SOARING TO NEW HEIGHTS

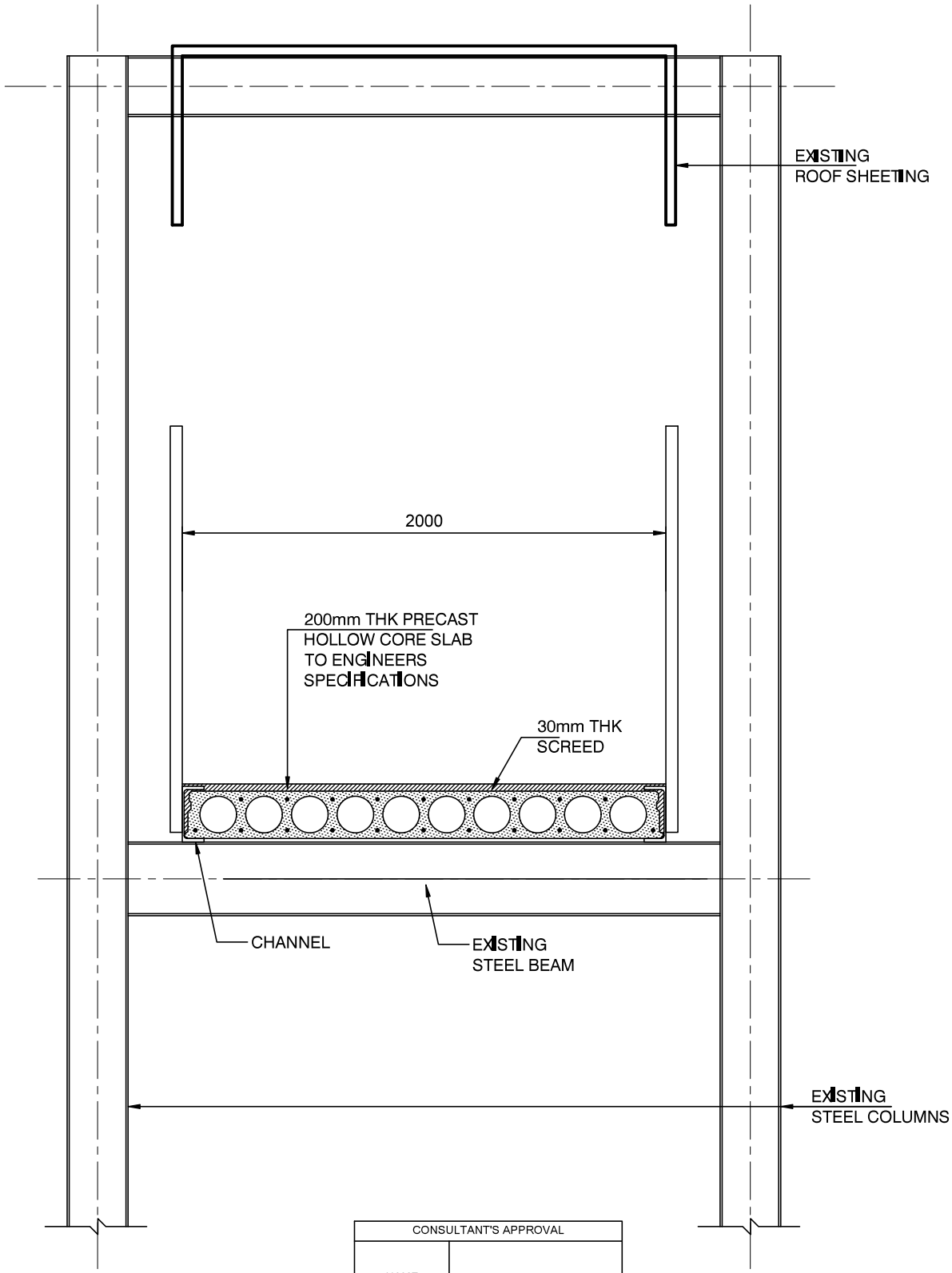
DEPARTMENT OF
PUBLIC WORKS
Private Bag X9489
Polokwane
0700
Tel (015) 291 6479

THOYOHANDOU HIGH COURT

REPAIRS AND RENOVATIONS ON CIVIL AND STRUCTURAL WORKS
SECTION THROUGH EXISTING ELEVATED WALKWAY

WCS 048609

S9709-TD-001



CONSULTANT'S APPROVAL	
NAME	S S SEMENYA
DATE	12-02-2021
Prof. Reg. No.	940386

ORO ENGINEERS
SOARING TO NEW HEIGHTS

DEPARTMENT OF
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Polokwane
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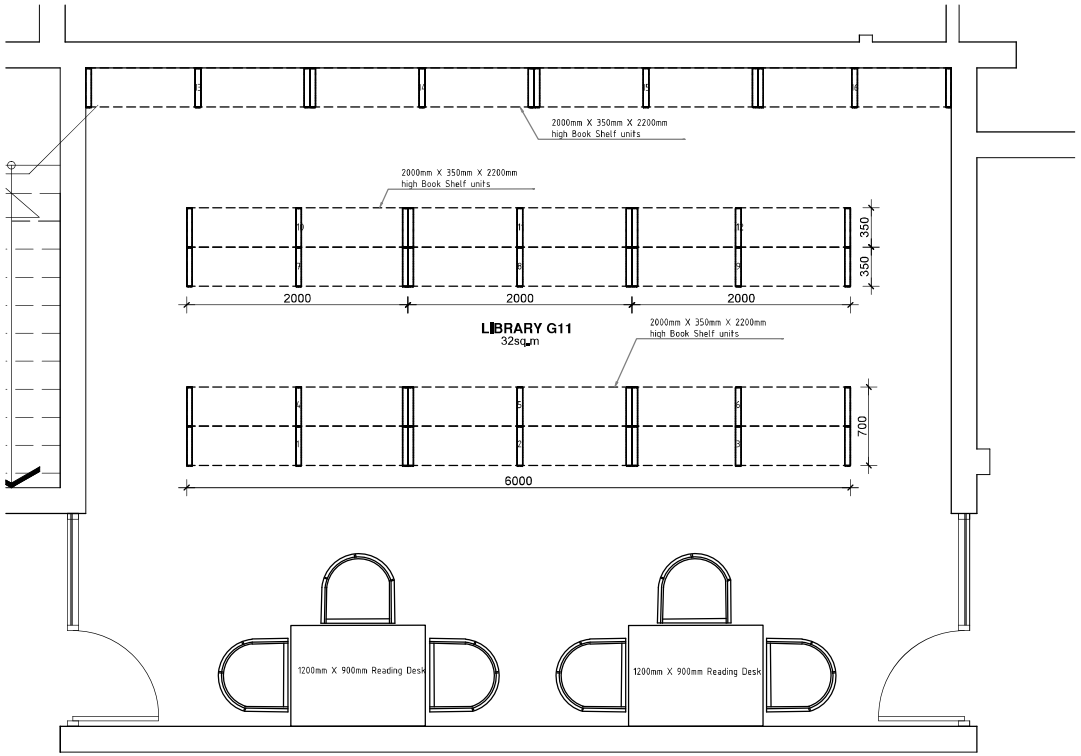
THOYOHANDOU HIGH COURT

REPAIRS AND RENOVATIONS ON CIVIL AND STRUCTURAL WORKS

SECTION THROUGH PROPOSED ELEVATED WALKWAY

WCS 048609

S9709-TD-002



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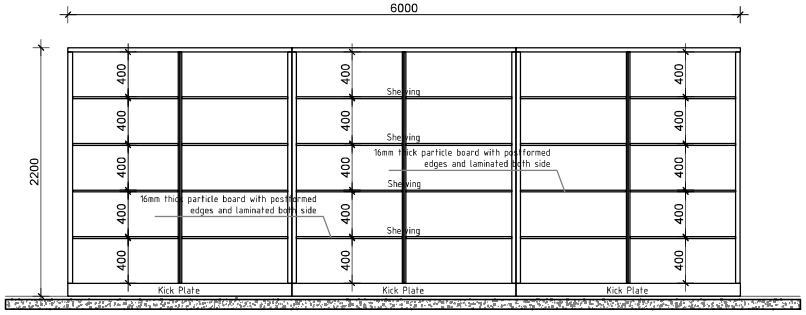

ELEVATION

SCALE 1:25

No.	DATE	AMENDMENT	D.P.W.

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drawings

certified drawings as per Centralised Drawing
Archive DRAWING REQUIREMENTS

name: Patrick Kagori

date: 03 February 2021

professional registration no: PrArch 21025

cad file name: AutoCAD

page type: A 1

public works
Department:
Public Works
REPUBLIC OF SOUTH AFRICA

DIRECTOR-GENERAL
MR. MZIWONKE DLABANTU

consultant

KMS ARCHITECTS

Kruger Office Park Unit No 7,
100 Marshall Street Tel: (015) 590 0995
Email: admin@kmsarch.co.za
Website: www.kmsarch.co.za
POLOKWANE

discipline: ARCHITECTS

service

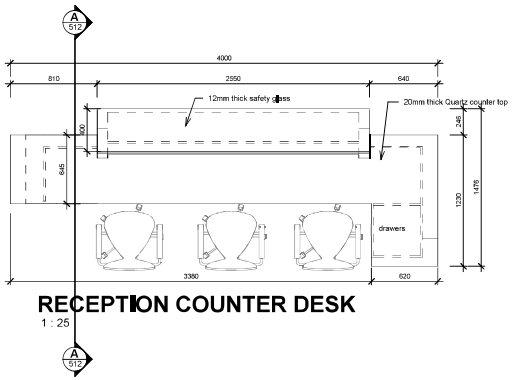
REPAIR AND RENOVATIONS FOR THOHOYANDOU HIGH COURT

WCS number: 048609

drawing title: SHELF DETAILS

refine	16/KMS/100	designed	P KAGORI
scale	25	drawn	T MPE
date	2016.12.02	checked	P KAGORI

drawing number: 25649/JOINERY/511



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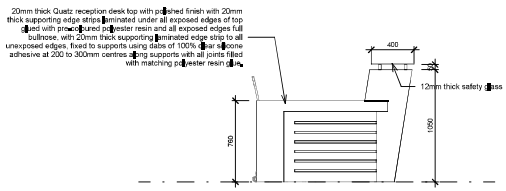

SIDE ELEVATION
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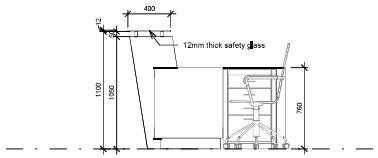
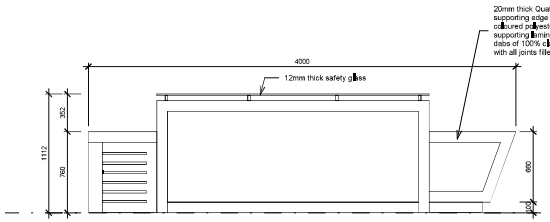
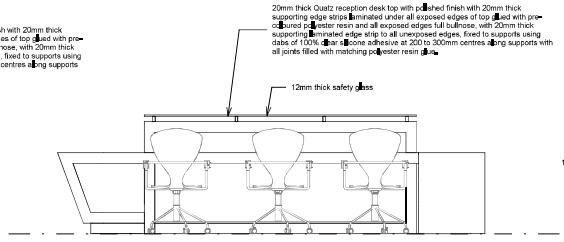


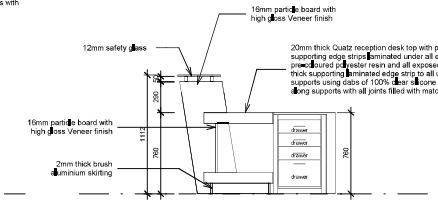
SIDE ELEVATION 1
1 : 25



FRONT ELEVATION
1 : 25



BACK ELEVATION
1 : 25



SECTION THROUGH RECEPTION DESK
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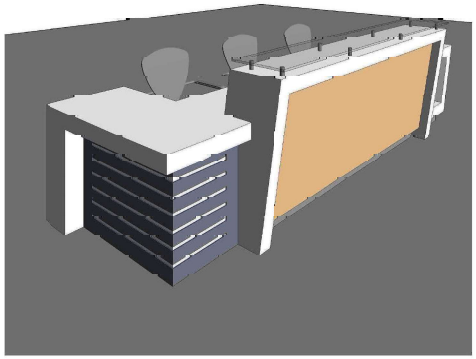

NO.	DATE	AMENDMENT	D.P.W.

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drawings

certified drawings as per Centralised Drawing Archive DRAWINGS REQUIREMENTS

name: Patrick Kagori

date: 03 February 2021

professional registration no.: PrArch 21025

cad file name: AUTOCAD

page type: A1

public works

[redacted]

consultant

K|M|S ARCHITECTS

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Website: www.kmsarchitects.za
POLOKWANE

discipline: ARCHITECTS

service

REPAIR AND RENOVATIONS FOR THOHOYANDOU HIGH COURT

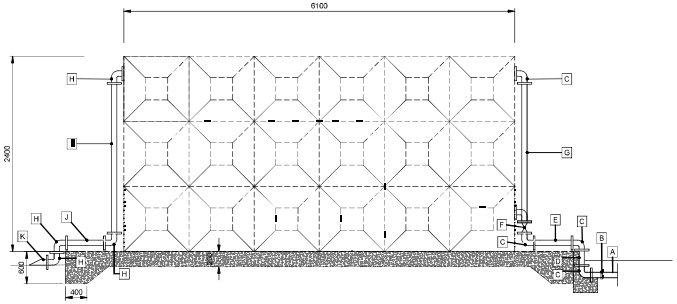
WCS number: 048609

drawing title: JOINERY DETAILS

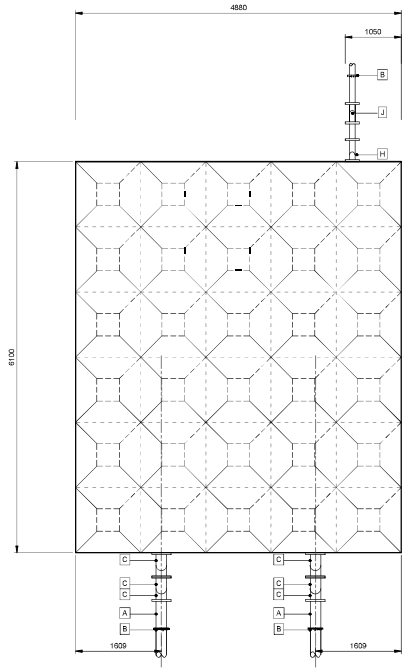
res no.: 16/KMS/108	designed: P KAGORI
scale: As Shown	drawn: T MPE
date: 2022/10/12 4:26:38 PM	checked: P KAGORI

drawing number: 25649/JOINERY/512

PIPE FITTING SCHEDULE			
REF	SIZE	DESCRIPTION	QTY
A	90Ø	LENGTH VARIES GALVANISED DIATANCE PIECE	2
B	90Ø	90Ø VIKING JOHNSON TO CONNECT TO HDPE PIPE	2
C	90Ø	90° GALVANISED BEND	8
D	90Ø	101.2mm LONG GALVANISED DISTANCE PIECE	1
E	90Ø	437.45mm LONG GALVANISED DISTANCE PIECE	2
F	90Ø	ISOLATING VALVE	2
G	90Ø	1662mm LONG GALVANISED DISTANCE PIECE	1
H	90Ø	90° GALVANISED BEND	4
I	60Ø	1662mm LONG GALVANISED DISTANCE PIECE	1
J	60Ø	437.45mm LONG GALVANISED DISTANCE PIECE	1
K	60Ø	LENGTH VARIES GALVANISED DIATANCE PIECE	1



TANK SIDE ELEVATION
SCALE 1:50



TANK PIPE LAYOUT PLAN
SCALE 1:50

DATE	NO	AMENDMENT	WYSIGING
03/11/2022	P	PRELIMINARY DESIGN	

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DEPARTMENT OF
PUBLIC WORKS &
INFRASTRUCTURE

DIRECTORATE: CIVIL
&STRUCTURAL
ENGINEERING
SERVICES

PRIVATE BAG X65
0001

SFC ENGINEERS
Civil Engineers • Structural Engineers
Development Managers • Project Managers

discipline
CIVIL

WCS number
WCS 048609

project title
THOHOYANDOU HIGH COURT
REPAIRS AND RENOVATIONS ON CIVIL WORKS

drawing title
ELEVATED TANK PIPE DETAILS

ref.no	designed M.M.
scale AS SHOWN	drawn A.V.G
date 03-11-2022	checked S.S. SEMENYA 940386
type number	
drawing number C5672-C-TD-011	

CONSULTANT'S APPROVAL	
NAME	S S SEMENYA
DATE	03-11-2022
Prof. Reg. No.	940386

VOLUME 3: CONTRACT

Part C1: Agreement and Contract Data

C1.2: Contract Data

public works & infrastructure
Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

DPW-04 (EC): CONTRACT DATA: JBCC PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018)

Project title:	Thohoyandou High Court: Repairs and Renovations

Tender / Quotation no:	PLK23/09	**WCS no:**	048609	**Reference no**:	6054/0070

	The Conditions of Contract are clauses 1 to 30 of the **JBCC®** Principal Building Agreement (Edition 6.2 of May 2018) prepared by the Joint Building Contracts Committee. **Contractors are cautioned to read the JBCC PBA and Contract Data (DPW-04 (EC)) together as some clauses in the JBCC PBA have been amended in the Contract Data (DPW-04 (EC)).** Copies of these conditions of contract may be obtained through most regional offices of the Association of South African Quantity Surveyors, Master Builders Association, South African Association of Consulting Engineers, South African Institute of Architects, Association of Construction Project Managers, Building Industries Federation South Africa, South African Property Owners Association or Specialist Engineering Contractors Committee. Bidders to note that materials procured for the works should be from South African manufactures and suppliers. Imported materials shall only be considered under exceptional circumstances, based on compelling technical justifications, and subject to the approval by the NDPWI.
	CONTRACT VARIABLES **THE SCHEDULE** The **schedule** is the listed variables in this agreement and contains all variables referred to in this document including specific changes made to JBCC® documentation. It is divided into part 1: contract data completed by the **employer** and part 2: contract data completed by the **tenderer**. Part 1 must be completed in full and included in the tender documents. Both the part 1 and part 2 form part of this **agreement.** **Spaces requiring information must be filled in, shown as 'not applicable' or deleted but not left blank.** Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the **schedule**. Reference to clause numbers in the JBCC Principal Building Agreement are shown in [square brackets] in this contract data e.g. [3.1].

PART 1: CONTRACT DATA COMPLETED BY THE EMPLOYER:

A PROJECT INFORMATION

A 1.0 Works [1.1]

Works description	Refer to document ***PG01.2 (EC) – Scope of Works*** for detailed description
Repair and Renovations to the building, paint works, civil works, structural works, electrical and mechanical works, tiling, plumbing etc. Employer Agent: Department of Public Works & Infrastructure Agents employed: QS, Architect, Civil Engineer, Structural Engineer, Electrical Engineer and Mechanical Engineer.	

Tender / Quotation no: PLK23/09

A 2.0 Site [1.1]

Erf / stand number	Portion 2 of erf 16
Site address	Thohoyandou old parliament building
Township / Suburb	Thohoyandou
City / Town	Thohoyandou
Province	Limpopo
Local authority	Vhembe
GPS Coordinates	Latitude: -22.9724389007. Longitude: 30.4575325794

A 3.0 EMPLOYER AND ITS REPRESENTATIVE

A 3.1 Employer:

Official Name of Organ of State / Public Sector Body	Government of the Republic of South Africa in its Department of Public Works & Infrastructure		
Business registration number	Not applicable	VAT number	Not applicable
E-mail	Fhumulani.Tshidavhu@dpw.gov.za	Telephone	015 291 6425
Postal address	Private Bag X9469 Polokwane Polokwane 0700		
Physical address	78 Hans van Rensburg street Polokwane Polokwane 0699		

A 3.2 Employer's representative:

Name	Fhumulani Tshidavhu	Telephone number	015 291 6425
E-mail	Fhumulani.Tshidavhu@dpw.gov.za	Mobile number	071 679 8604
Postal address	Private Bag X9469 Polokwane Polokwane 0700		
Physical address	77 Hans van Rensburg street Polokwane Polokwane 0699		

Tender / Quotation no: PLK23/09

A 4.0	**Principal Agent** [1.1; 6.2]	**Discipline**	Quantity Surveyor

Name	QS Consult Africa		
Legal entity of above	QS Consult Africa	Contact person	Albertus Lubbe
Practice number		Telephone number	012 111 1998
Country	South Africa	Mobile number	
E-mail	bongani@qsconsult.co.za / bertus@qsconsult.co.za		
Postal address	P.O. Box 12749 Queenswood 0121		
Physical address	30 Kilnerton Road Colbyn Pretoria 0083		

A 5.0	**Agent** [1.1; 6.2]	**Discipline**	Architect

Name	KMS Architect (PTY) LTD		
Legal entity of above	KMS Architect (PTY) LTD	Contact person	Patrick Kagori
Practice number		Telephone number	015 590 0995
Country	South Africa	Mobile number	078 234 1043
E-mail	admin@kmsarch.co.za		
Postal address	P.O.Box 1206 Polokwane Polokwane 0700		
Physical address	Unit 7, Kruger Office Park 100 Marshall Street Polokwane 0699		

A 6.0	**Agent** [1.1; 6.2]	**Discipline**	Structural Engineer

Name	SFC Engineers		
Legal entity of above	SFC Engineers	Contact person	Mzobanzi Masuku
Practice number		Telephone number	012 643 0560
Country	South Africa	Mobile number	
E-mail	mzobanzi.masuku@sfce.co.za		
Postal address	P.O.Box 4879 Polokwane Polokwane 0700		
Physical address	DZB Building,Ground floor, Platinum Park 25 Watermelon Street, Bendor Polokwane 0699		

Tender / Quotation no: PLK23/09

A 7.0	**Agent** [1.1; 6.2]	**Discipli**ne	Civil Engineer

Name	SFC Engineer		
Legal entity of above	SFC Engineer	Contact person	Enos Mamabolo
Practice number		Telephone number	015 297 1045
Country	South Africa	Mobile number	083 275 3901
E-mail	enos.mamabolo@sfce.co.za		
Postal address	P.O.Box 4879 Polokwane Polokwane 0700		
Physical address	DZB Building,Ground floor, Platinum Park 25 Watermelon Street, Bendor Polokwane 0699		

A 8.0	**Agent** [1.1; 6.2]	**Discipli**ne	Electrical Engineer

Name	Motla Consulting Engineers (PTY) LTD		
Legal entity of above	Motla Consulting Engineers	Contact person	Johan Thiart
Practice number		Telephone number	015 307 7378
Country	South Africa	Mobile number	083 270 2416
E-mail	JohanT@motla.co.za		
Postal address	Private Bag X 4019 Tzaneen Tzaneen 0850		
Physical address	26 Agatha Street Tzaneen Tzaneen 0850		

A 9.0	**Agent** [1.1; 6.2]	**Discipli**ne	Mechanical Engineer

Name	Motla Consulting Engineers (PTY) LTD		
Legal entity of above		Contact person	Terrence Mvuyane
Practice number		Telephone number	012 663 1328
Country	South Africa	Mobile number	076 736 7254
E-mail	TerrenceM@motla.co.za		
Postal address	Private Bag X 4019 Tzaneen Tzaneen 0850		
Physical address	26 Agatha Street Tzaneen Tzaneen 0850		

Tender / Quotation no: PLK23/09

A 10.0	**Agent** [1.1; 6.2]	**Discipli**ne	

Name			
Legal entity of above		Contact person	
Practice number		Telephone number	
Country		Mobile number	
E-mail			
Postal address			
Physical address			

A 11.0	**Agent** [1.1; 6.2]	**Discipli**ne	

Name			
Legal entity of above		Contact person	
Practice number		Telephone number	
Country		Mobile number	
E-mail			
Postal address			
Physical address			

A 12.0	**Agent** [1.1; 6.2]	**Discipli**ne	

Name			
Legal entity of above		Contact person	
Practice number		Telephone number	
Country		Mobile number	
E-mail			
Postal address			
Physical address			

Tender / Quotation no: PLK23/09

B CONTRACT INFORMATION

B 1.0 Definitions [1.1]

Bills of quantities: System/Method of measurement	Standard system of measurement of building works 7th edition

B 2.0 Law, regulations and notices [2.0]

Law applicable to the works, state country [2.1]	Law of the Republic of South Africa

B 3.0 Offer and acceptance [3.0]

Currency applicable to this agreement [3.2]	South African Rand

B 4.0 Documents [5.0]

The original signed agreement is to be held by the principal agent [5.2], if not, indicate by whom	Employer
Number of copies of construction information issued to the contractor at no cost [5.6]	3

Documents comprising the agreement	Page numbers
The JBCC® Principal Building Agreement, Edition 6.2 May 2018	1 to 30
DPW-04 (EC): CONTRACT DATA: JBCC PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018)	1 to 31
The JBCC® General Preliminaries for use with the JBCC® Principal Building Agreement, Edition 6.2 May 2018	1 to 31
Drawings as per drawing register issued with the tender	6 pages
Specifications issued with the tender	101 & 32 pages
Schedules issued with the tender	
Bills of Quantities issued with the tender	178 pages
Addenda as issued during tender stage, if applicable	As issued

B 5.0 Employer's agents [6.0]

Authority is delegated to the following agents to issue contract instructions and perform duties for specific aspects of the works [6.2] [6.7 [CD]]	**Principal Agent**
Principal agent's and agents' interest or involvement in the works other than a professional interest [6.3]	
None, apart from the professional fees.	

Tender / Quotation no: PLK23/09

B 6.0 Insurances [10.0]

Insurances by contractor
NB: Insurances submitted must be issued by either an insurance company duly registered in terms of the Insurance Act [Long-Term Insurance Act, 1998 (Act 52 of 1998) or Short-Term Insurance Act, 1998 (Act 53 of 1998)] or by a bank duly registered in terms of the Banks Act, 1990 (Act 94 of 1990). **Insured amounts to include VAT.**

	New works [10.1.1] With a deductible not exceeding 5% of each and every claim	Contract sum plus 10%	Not Applicable
Or	Works with practical completion in sections [10.2] With a deductible not exceeding 5% of each and every claim	Contract sum plus 10%	Not Applicable
Or	Works with alterations and additions [10.3] (reinstatement value of existing structures with or including new works) With a deductible not exceeding 5% of each and every claim	Contract sum plus 10%	Applicable
	Direct contractors [10.1.1; 10.2] where applicable, to be included in the contract works insurance	R	Not Applicable
	Free issue [10.1.1; 10.2] where applicable, to be included in the contract works insurance	R	Not Applicable
	Escalation, professional fees and reinstatement costs must be included in the above respective insurances		Applicable
Supplementary insurance [10.1.2; 10.2]		Contract sum plus 10%	Applicable
Public liability insurance [10.1.3; 10.2]		R 5 000 000	Applicable
Removal of lateral support insurance [10.1.4; 10.2]		R	Not Applicable
Other insurances [10.1.5]			
Hi Risk Insurance Refer B18.0 [10.1.5.1]		R	Not Applicable
Other insurances: If applicable, description 1:		R	Not Applicable
Other insurances; If applicable, description 2:		R	Not Applicable

Tender / Quotation no: PLK23/09

B 7.0 Obligations of the employer [12.1]

Existing premises will be in use and occupied [12.1.2]	Applicable
If applicable, description: The building is occupied and being used by Department of Justice and Constitutional development.	
Restriction of working hours [12.1.2]	Applicable
If applicable, description: Sometimes when court is in session, it will not be possible to do the work which is noisy e.g welding, using of hammers, grinders, etc	
Natural features and known services to be preserved by the contractor [12.1.3]	Not Applicable
If applicable, description:	
Restrictions to the site or areas that the contractor may not occupy [12.1.4]	Not Applicable
If applicable, description:	
Supply of free issue of material and goods [12.1.10]	Not Applicable
If applicable, description:	

B 8.0 Appointment of Nominated Subcontractors [14.0]

Not Applicable	If applicable, description of specialisation

Specialisation 1	
Specialisation 2	
Specialisation 3	
Specialisation 4	
Specialisation 5	

B 9.0 Appointment of Selected Subcontractors [15.0]

Not Applicable	If applicable, description of specialisation

Specialisation 1	Assessments, Repairs, Commissioning, inspections and integration of the lift
Specialisation 2	
Specialisation 3	
Specialisation 4	
Specialisation 5	

Tender / Quotation no: PLK23/09

B 10.0 Appointment of Direct Contractors [16.0]

Not Applicable	If applicable, description of extent of work [12.1.11]
Extent of work	
Extent of work	
Extent of work	
Extent of work	
Extent of work	

B 11.0 Works to be completed in sections [20.1]

Not Applicable	If applicable, description of sections
Section 1	
Section 2	
Section 3	
Section 4	
Section 5	
Section 6	
Remainder of the works.	

B 12.0 Contract period [B18: 1.2], Construction period [B18: 1.1], Possession of site [12.1.5], Practical Completion [19.0; 20.0], Works Completion Refer B18.0 [19.8], Final Completion [21] and Penalties [24.0]

B12.1 Contract Period

Contract period [B18: 1.2]**:** Period in **months** as indicated**,** include time for submitting contractual obligatory documents, submission of Health & Safety Plan and approval, period for obtaining the Construction Permit (if applicable), the Construction Period and the Defect Liability Period up to and including Final Completion	
The contract period is determined as follows (Period/s indicated in months):	
Period to submit contractual obligatory documents including submission and approval of health and safety plan by the appointed Health & Safety Agent	1 Month

Tender / Quotation no: PLK23/09

Period to obtain Construction Permit from Department of Labour upon approval of the Health & Safety Plan by the appointed Health & Safety Agent	1 month
Total construction period for the Works as a whole up to and including Practical Completion, as indicated below [24.1]	18 Months
Period to achieve Works Completion Refer B18.0 [19.8]	1 Month
Defect liability period up to and including Final Completion	3
Total Contract period [B18: 1.2]	24 Months
Penalty amount per calendar day for late submission of contractual obligatory documents: Ten percent (10%) of the penalty amount per calendar day for late Practical Completion, excluding VAT. [24.1]	R 480.00

B12.2 Construction Period for completion of the Works as a whole

Construction period [B18: 1.2] and **Practical Completion for the Works as a whole** [19.0] The time for achieving Practical Completion of the whole of the Works is **measured from the** date of possession of the **site** by the **contractor** inclusive of all **public holidays, special non-working days and builders' holiday shut down periods.**	Applicable
The date for practical completion for the works as a whole shall be the period in **months** as indicated, starting from the date of possession of the site by the contractor inclusive of all special non-working days and builders' holiday shut down periods [12.2.7; 24.1]	18 Months
Period for inspection in **working days** by the principal agent [19.3]	34
Penalty amount per calendar day for **late Practical Completion**, excluding VAT. [24.1]	R 4 800.00
Penalty amount per calendar day for **late Works Completion** Refer B18.0 [19.8]: Thirty percent (30%) of penalty amount per calendar day for late Practical Completion, excluding VAT.	R 1 400.00
Penalty amount per calendar day for **late Final Completion** [21]: Fifteen percent (15%) of penalty amount per calendar day for late Practical Completion, excluding VAT.	R 720.00

B12.3 Construction Period for completion of the Works in portions

Construction period [B18: 1.1] and **Practical completion for portions of the Works** [20.0]					Not Applicable	
Portions of the Works in sections:	1	2	3	4	5	6
Period for inspection by the principal agent in **working days** [19.3]						
The date for practical completion shall be the period in **months** as indicated from the date of possession of the site by the contractor [12.2.7; 24.1]						

The date for practical completion for **the whole** of the Works, if applicable shall be the period in **months** as indicated from the date of possession of the site by the contractor inclusive of all **public holidays, special non-working days and builders' holiday shut down periods** [12.2.7; 24.1]	N/A
Penalty for late Practical Completion, ***if completion in sections is required***, excluding VAT	
The penalty amount per day for failing to complete **section 1** of the Works is:	R
The penalty amount per day for failing to complete **section 2** of the Works is:	R
The penalty amount per day for failing to complete **section 3** of the Works is:	R
The penalty amount per day for failing to complete **section 4** of the Works is:	R
The penalty amount per day for failing to complete **section 5** of the Works is:	R
The penalty amount per day for failing to complete **section 6** of the Works is:	R
The penalty amount per day for failing to complete **the whole** of the Works, if applicable, is:	R
Penalty amount per calendar day for late Works Completion Refer B18.0 [19.8]: To be calculated at Thirty percent (30%) of penalty / calendar day to complete **Select** , excluding VAT	
Penalty amount per calendar day for late Final Completion [21]: To be calculated at Fifteen percent (15%) of penalty / calendar day to complete **Select** , excluding VAT	

B 13.0 Criteria to achieve Practical Completion [19.0; 20.0]

Criteria to achieve Practical Completion not covered in the definition of practical completion	
13.1	All relevant CoCs
13.2	All guarantees
13.3	Training on electrical, security and mechanical installations if contractually required
13.4	Maintenance / operating manuals
13.5	CPG and cidb BUILD Programme achievement, certificates submitted with substantiating documentation
13.6	
13.7	
13.8	
13.9	
13.10	

B 14.0 Defects liability period [21.0]

Extended defects liability period: Refer B18.0 [21.13]

Appliable	If applicable, description of applicable elements

14.1	Emergency generator/s
14.2	Air conditioning system and plant
14.3	Security system/s (e.g. Access control, Intruder alarm, etc.)
14.4	Electrical equipment (e.g. Electric operated doors, Electric motors, etc.)
14.5	Lifts
14.6	Mechanical equipment (e.g. Fire detection, Fire suppression system, Kitchen equipment, etc.)
14.7	Civil works
14.8	Landscaping including automated systems (irrigation)
14.9	
14.10	

B 15.0 Payment [25.0]

Date of month for issue of regular payment certificates Refer B18.0 [25.2]	25
Contract price adjustment / Cost fluctuations Refer [25.3.4; 26.9.5]	Applicable
If applicable, method to calculate	CPAP
Employer shall pay the contractor within: Refer B18.0 [25.10]	Thirty (30) calendar days

B 16.0 Dispute resolution [30.0]

Mediation	Applicable
Name of nominating body	Association of Arbitrators (Southern Africa)
Appointment of Mediator	State Attorney
Litigation	Court with Jurisdiction

B 17.0 JBCC® General Preliminaries - selections

Provisional bills of quantities [P2.2]		Applicable
Availability of construction information [P2.3]		Applicable
Previous work - dimensional accuracy - details of previous contract(s) [P3.1]		Not Applicable
Previous work - defects - details of previous contract(s) [P3.2]		Not Applicable
Inspection of adjoining properties - details [P3.3]		Not Applicable
Handover of site in stages - specific requirements [P4.1]		Applicable
Enclosure of the works - specific requirements [P4.2]		Not Applicable
Geotechnical and other investigations - specific requirements [P4.3]		Not Applicable
Existing premises occupied - details [P4.5]		Applicable
Services - known - specific requirements [P4.6]		Applicable
Water [P8.1]	By contractor	Not Applicable
	By employer	Applicable
	By employer – metered	Not Applicable
Electricity [P8.2]	By contractor	Not Applicable
	By employer	Applicable
	By employer – metered	Not Applicable
Ablution and welfare facilities [P8.3]	By contractor	Applicable
	By employer	Not Applicable
Communication facilities - specific requirements [P8.4] Mobile phone, email		Applicable
Protection of the works - specific requirements [P11.1]		Applicable
Protection / isolation of existing works and works occupied in sections - specific requirements [P11.2]		Applicable
Disturbance - specific requirements [P11.5] Sometimes when the court is in session, it will not be possible to do work which is noisy, such as the usage of welding, grinders, drills, hammers, etc		Applicable
Environmental disturbance - specific requirements [P11.6]		Not Applicable

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B 18.0 SPECIFIC CHANGES MADE TO JBCC® DOCUMENTATION

[Details of changes made to the provisions of **JBCC** standard documentation]

1.2	**Definitions** **The following definitions replace corresponding definitions or are added to the definitions in the JBCC PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018), whatever the case may be.** **ADVERSE WEATHER CONDITIONS:** Adverse weather and inclement weather has the same meaning and used interchangeably and means any weather conditions i.e.: Rain, wind, snow, frost, temperature (cold or heat) that are not in the norm for the area where the construction takes place and during which no work is possible on site. **AGREEMENT:** The completed Form of Offer and Acceptance, the completed JBCC® Principal Building Agreement and contract data for organs of state and other public sector bodies, the contract drawings, the priced document and any other documents reduced to writing and signed by the authorised representative or representatives of the parties. **CONSTRUCTION PERIOD:** The period commencing on the date of possession of the **site** by the **contractor** and ending on the date of **practical completion.** **CONTRACT PERIOD:** The period commencing on the date of the letter of acceptance and ending on the date of final completion. **COST FLUCTUATION** shall mean contract price adjustment provision (CPAP) for the adjustment of fluctuation in the cost of labour, plant, material and goods as stated in the schedule. **DEFAULT INTEREST**: No clause. **GUARANTEE FOR CONSTRUCTION**: A security in terms of the DPWI's Guarantee for Construction form/s, obtained by the contractor from an institution approved by the employer [CD]. **INTEREST:** The interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be the rate as determined by the Minister of Finance from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No 1 of 1999) as amended, calculated as simple interest, in respect of debts owing to the State, and will be the rate as published by the Minister of Justice and Correctional Services from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No 55 of 1975) as amended, calculated as simple interest, in respect of debts owing by the State. **LETTER OF ACCEPTANCE**: The letter of formal acceptance of the Contractor's or Service Provider's Tender / Bid, issued and signed by the Employer. **PAYMENT CERTIFICATE**: A certificate issued at regular agreed intervals [CD] by the principal agent to the parties certifying the amount due and payable in terms of clause 25.3. **PRINCIPAL AGENT:** The person or entity appointed by the **employer** and named in the **contract data for organs of state and other public sector bodies.** In the event of a **principal agent** not being appointed, then all the duties and obligations of a **principal agent** as detailed in the **agreement** shall be fulfilled by the employer's representative as named in the **contract data for organs of state and other public sector bodies.** **TARGETED SUBCONTRACTORS:** Subcontractors that must be appointed to a total of 30% or more of the contract sum, by the contractor, projects with a contract sum of the amount determined by the Minister in terms of the latest Preferential Procurement regulations, as may be amended from time to time.

CONTRACT SPECIFIC DATA	
The following contract specific data, referring to the General Conditions of Contract for Construction Works, JBCC PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018), are applicable to this Contract:	
3.3	Replace clause with the following: This agreement shall come into force on the date of letter of acceptance and continue to be of force and effect until the end of the latent defects liability period [22.0] notwithstanding termination [29.0] or the certification of final completion [21.0] and final payment [25.0].
4.2	Refer to clause 6.7 [CD].
4.3	Replace clause with the following: Where a contractor cedes any right or any monies due to or to become due under this agreement as security in favour of a financial institution, the prior written consent of the employer, which consent shall not be unreasonably withheld, must be obtained.
5.2	Replace last sentence with the following: The original signed agreement shall be held by the Employer.
5.4	Replace clause with the following: The Bills of Quantities shall not be used as a specification of material and goods or methods unless so instructed by the Principal Agent. The contractor may not use the Bills of Quantities for purpose of ordering material. All dimensions and quantities must be determined on site before ordering. In the event of discrepancy between the drawings and Bills of Quantity, the drawings shall take preference.
5.5	Replace clause with the following: The parties may publish or disclose on any platform only the contract scope and contract amount.
6.5	Replace clause with the following: Where the principal agent and/or an agent fails to act or is unable to act or ceases to be the principal agent or an agent in terms of this agreement, the employer may appoint another principal agent and/or an agent, be it temporary or permanently.
6.7	Add the following as clause 6.7: In terms of the clauses listed hereunder, the employer has retained its authority and has not given a mandate to the principal agent, notwithstanding other provisions in the contract. The employer shall sign all documents in relation to clauses 4.2, 14.1.4, 14.4.1, 14.6, 15.1.4, 15.4.1, 23.1, 23.2, 23.3, 23.7, 23.8, 26.1, 26.7, 26.12.
7.2	Replace first sentence with the following: Any design responsibility undertaken by a subcontractor shall not devolve on the contractor except for items that require specific component design and or compatibility design and or shop drawings and or the assembly thereof.
8.4	Replace clause with the following: The contractor shall bear the full risk of damage to and/or destruction of the works by whatever cause during construction of the works and hereby indemnifies and holds harmless the employer against any such damage. The contractor shall take such precautions and security measures and other steps for the protection and security of the works as the contractor may deem necessary.
9.2.7	Add the following to the end of the first sentence: "…. due to no fault of the contractor".

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9.2.9	No clause.
9.2.10	No clause.
9.3	Add the following as clause 9.3: The employer's rights to claim damages for the contractor's omissions and actions will not be affected.
10.1	Replace clause with the following: The party responsible shall effect and keep the respective insurances [CD] in force, in favour of the employer as beneficiary, from the date of possession of the site until the issue of the certificate of practical completion and with an extension to cover the contractor's obligations after the date of practical completion [8.2.2].
10.1.5.1	Add the following as clause 10.1.5.1: Hi Risk Insurance In the event of the project being executed in a geological area classified as a "High Risk Area", that is an area which is subject to highly unstable sub-surface conditions that might result in catastrophic ground movement evident by sinkhole or doline formation the following will apply:
10.1.5.1.1	Add the following as clause 10.1.5.1.1: Damage to the works The contractor shall, from the date of possession of the site until the date of the certificate of practical completion, bear the full risk of and hereby indemnifies and holds harmless the employer against any damage to and/or destruction of the works consequent upon a catastrophic ground movement as mentioned above. The contractor shall take such precautions and security measures and other steps for the protection of the works as he may deem necessary. When so instructed to do so by the principal agent, the contractor shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the works and to rebuild, restore, replace and/or repair the works, at the contractor's own costs.
10.1.5.1.2	Add the following as clause 10.1.5.1.2: Injury to persons or loss of or damage to property The contractor shall be liable for and hereby indemnifies and holds harmless the employer against any liability, loss, claim or proceeding arising at any time during the period of the contract whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of or caused by a catastrophic ground movement as mentioned above. The contractor shall be liable for and hereby indemnifies the employer against any and all liability, loss, claim or proceeding consequent upon loss of or damage to any moveable, or immovable property, or personal property, or property contiguous to the site, whether belonging to or under the control of the employer or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned above, which occurred during the period of the contract.
10.1.5.1.3	Add the following as clause 10.1.5.1.3: It is the responsibility of the contractor to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.1.5.1.1 and 10.1.5.1.2. Without limiting the contractor's obligations in terms of the contract, the contractor shall, within twenty-one (21) calendar days of the date of letter of acceptance, but before commencement of the works, submit to the employer proof of such insurance policy.

10.1.5.1.4	Add the following as clause 10.1.5.1.4: The employer shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred consequent upon the contractor's default of his obligations as set out in 10.1.5.1.1; 10.1.5.1.2 and 10.1.5.1.3. Such losses or damages may be recovered from the contractor or by deducting the same from any amounts still due under this contract or under any other contract presently or hereafter existing between the employer and the contractor and for this purpose all these contracts shall be considered one indivisible whole.
10.2	Replace clause with the following: Where practical completion in sections is required [20.0), or where the works is for alterations and additions, the contractor shall effect and keep in force contract works insurance [10.1.1], supplementary insurance [10.1.2], public liability insurance [10.1.3] and where applicable, removal of lateral support insurance [10.1.4] and other insurances [10.1.5) in favour of the employer as beneficiary.
10.6	No clause.
10.11	Add the following as clause 10.11 In the event that an insurer dispute the amount of the claim to be paid to the employer, the contractor shall be liable to the employer for the difference between the claim (as determined by the employers QS appointed on the project) made by the employer and the amount that the insurer is willing to pay.
11.1	Add the following to clause 11.1. In respect of contracts with a contract sum up to R1 million, the security to be provided by the contractor to the employer will be a payment reduction of five per cent (5%) of the value certified in the payment certificate (excluding VAT). In respect of contracts with a contract sum above R1 million, the contractor shall have the right to select the security to be provided in terms of C 1.0 Securities, as stated in the schedule. Such security shall be provided to the employer within fifteen (15) working days from contract commencement date. Should the contractor fail to select the security to be provided or should the contractor fail to provide the employer with the selected security within fifteen (15) working days from the contract commencement date, the security in terms of C 1.0 Option C shall be deemed to have been selected. The payment reduction of the value certified in a payment certificate shall be *mutatis mutandis* in terms of 25.12.1 - 25.12.5.
11.1.1	No clause.
11.1.2	No clause.
11.2.2	No clause.
11.3	No clause.
11.4.1	Replace clause 11.4.1 with the following: Hand over the site to the contractor and withhold an amount equal to ten per cent (10%) of each interim payment certificate until practical completion is achieved. The value certified shall be subject to the adjustments in terms of 25.12.6 to 25.12.10.
11.5	No clause.
11.6	No clause.

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11.7	No clause.
11.8	No clause.
11.9	No clause.
11.10	No clause.
11.11	Add the following as clause 11.11 Where the security as a cash deposit of ten per cent (10%) of the contract sum (excluding VAT) has been selected:
11.11.1	Add the following as clause 11.11.1 The contractor shall furnish the employer with a cash deposit equal in value to ten percent (10%) of the contract sum (excluding VAT) within fifteen (15) working days from the contract commencement date. Failure to furnish the employer with a cash deposit within fifteen (15) working days clause 11.4 will apply *mutatis mutandis*.
11.11.2	Add the following as clause 11.11.2 The employer shall be entitled to recover expense and loss from the cash deposit in terms of 27.0 provided that the employer notifies the Contractor in which event the employer's entitlement shall take precedence over his obligations to refund the cash deposit security or portions thereof to the contractor.
11.11.3.	Add the following as clause 11.11.3 Within fifteen (15) working days of the date of practical completion of the works the employer shall reduce the cash deposit to an amount equal to three per cent (3%) of the contract value (excluding VAT).
11.11.4	Add the following as clause 11.11.4 Within fifteen (15) working days of the date of final completion of the works the employer shall reduce the cash deposit to an amount equal to one per cent (1%) of the contract value (excluding VAT).
11.11.5	Add the following as clause 11.11.5 On the date of payment of the amount in the final payment certificate, the employer shall refund the remainder of the cash deposit to the contractor.
11.11.6	Add the following as clause 11.11.6 The parties expressly agree that neither the employer nor the contractor shall be entitled to cede the rights to the deposit to any third party.
11.12	Add the following as clause 11.12 Where security as a variable construction guarantee of ten percent (10%) of the contract sum (excluding VAT) has been selected:
11.12.1	Add the following as clause 11.12.1 The contractor shall furnish the employer with an acceptable variable construction guarantee equal in value to ten per cent (10%) of the contract sum (excluding VAT) within fifteen (15) working days after issuance of the letter of acceptance. Failure to submit an acceptable variable construction guarantee within fifteen (15) working days clause 11.4 will apply *mutatis mutandis*.
11.12.2	Add the following as clause 11.12.2 The variable construction guarantee shall reduce and expire in terms of the Variable Construction Guarantee form included in the invitation to tender.

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11.12.3	Add the following as clause 11.12.3 The employer shall return the variable construction guarantee to the contractor within fourteen (14) calendar days of it expiring.
11.12.4	Add the following as clause 11.12.4 Where the employer has a right of recovery against the contractor in terms of 27.0, the employer shall issue a written demand in terms of the variable construction guarantee.
11.13	Add the following as clause 11.13 Where security is a fixed construction guarantee of five per cent (5%) of the contract sum (excluding VAT) and a five per cent (5%) payment reduction of the value certified in the payment certificate (excluding VAT) has been selected:
11.13.1	Add the following as clause 11.13.1 The contractor shall furnish a fixed construction guarantee to the employer equal in value to five per cent (5%) of the contract sum (excluding VAT).
11.13.2	Add the following as clause 11.13.2 The fixed construction guarantee shall come into force on the date of issue and shall expire on the date of the last certificate of practical completion.
11.13.3	Add the following as clause 11.13.3 The employer shall return the fixed construction guarantee to the contractor within fourteen (14) calendar days of it expiring.
11.13.4	Add the following as clause 11.13.4 The payment reduction of the value certified in a payment certificate shall be *mutatis mutandis* in terms of 25.12.1 - 25.12.5.
11.13.5	Add the following as clause 11.13.5 Where the employer has a right of recovery against the contractor in terms of 27.0, the employer shall be entitled to issue a written demand in terms of the fixed construction guarantee or may recover from the payment reduction or from both.
11.14.1	Add the following as clause 11.14.1 Where security as a cash deposit of five per cent (5%) of the contract sum (excluding VAT) and a payment reduction of five per cent (5%) of the value certified in the payment certificate (excluding VAT) has been selected:
11.14.2	Add the following as clause 11.14.2 The contractor shall furnish the employer with a cash deposit equal in value to five per cent (5%) of the contract sum (excluding VAT) within fifteen (15) working days from the contract commencement date. Failure to submit a cash deposit within fifteen (15) working days clause 11.4 will apply *mutatis mutandis*.
11.14.3	Add the following as clause 11.14.3 Within fifteen (15) working days of the date of practical completion of the works the employer shall refund the cash deposit in total to the contractor.
11.14.4	Add the following as clause 11.14.4 The payment reduction of the value certified in a payment certificate shall be *mutatis mutandis* in terms of 25.12.1 - 25.12.5.
11.14.5	Add the following as clause 11.14.5 Where the employer has a right of recovery against the contractor in terms of 27, the employer may recover from the payment reduction or cash deposit or from both.

11.15	Add the following as clause 11.15 Where security as a payment reduction of ten per cent (10%) of the value certified in the payment certificate (excluding VAT) has been selected:
11.15.1	Add the following as clause 11.15.1 The payment reduction of the value certified in a payment certificate shall be *mutatis mutandis* in terms of 25.12.6 to 25.12.10.
11.15.2	Add the following as clause 11.15.2 The employer shall be entitled to recover expense and loss from the cash deposit in terms of 27.0 provided that the employer notifies the Contractor in which event the employer's entitlement shall take precedence over his obligations to refund the cash deposit security or portions thereof to the contractor.
11.16	Add the following as clause 11.16 Payments made by the guarantor to the employer in terms of the fixed or variable construction guarantee shall not prejudice the rights of the employer or contractor in terms of this agreement.
11.17	Add the following as clause 11.17 Should the contractor fail to furnish the security in terms of 11.2 the employer, in his sole discretion, and without notification to the contractor, is entitled to change the contractor's selected form of security to that of a ten per cent (10%) payment reduction of the value certified in the payment certificate (excluding VAT).
12.1.1	No Clause.
12.1.5	Replace clause with the following: Give possession of the site to the contractor within ten (10) working days after approval of the Health and Safety Plan or the issue of a construction permit by the Department of Labour, if applicable, after the contractor complied with the terms of 12.2.22.
12.1.6	No clause.
12.1.8	No clause.
12.2.2	Replace clause with the following: The priced Bills must be submitted to the Employer within fourteen (14) calendar days from date of request. Where the **priced document** contains errors or discrepancies and/or prices considered by the employer or **principal agent** to be imbalanced or unreasonable the employer or **principal agent** and the **contractor** shall adjust such prices without any change to the **contract sum.**
12.2.5	Replace clause with the following: Effect and keep in force insurances in favour of the employer as beneficiary where the contractor is responsible for providing insurances [10.0) [CD].
12.2.13	Replace clause with the following: Designate a competent person full time on site to continuously administer and control the works on site and to receive and implement notices and contract instructions on behalf of the contractor.
12.2.22	Insert the following clause as 12.2.22: Within fourteen (14) working days of the date of the letter of acceptance submit to the principal agent an acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993).

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12.2.23	Insert the following clause as 12.2.23: The contractor shall within reasonable time inform the agents regarding inspection of the works before covering / closing [B 12.0].
14.1.4	Refer to clause 6.7 [CD].
14.1.5	No clause.
14.4.1	Replace "principal agent "with "employer" [6.7 [CD]].
14.6	Refer to clause 6.7 [CD].
15.0	See clause 6.7 above for clauses, 15.5.
15.1.2	Replace clause with the following: The principal agent shall call for tenders from a list of tenderers agreed between the contractor and the employer.
15.1.4	Refer to clause 6.7 [CD].
15.1.5	No clause.
15.4.1	Replace "principal agent" with "employer" [6.7 [CD]].
17.4	Replace clause with the following: The contractor shall comply with and duly execute all contract instructions except any contract instruction for additional work issued after the date of practical completion other than making good physical loss and repairing damage to the works in terms of 8.0 and 21.
17.6	Add the following as clause 17.6: Minutes of meetings shall not constitute a site instruction unless reduced to a written contract instruction issued by the principal agent in terms of this contract / agreement.
19.5	Replace clause with the following: On issue of the only or last certificate of practical completion the employer shall be entitled to possession of the works and the site. On issue of the certificate of practical completion for a section, the employer shall be entitled to possession of such section.
19.8	Add the following as: 19.8 **WORKS COMPLETION** (1) Within seven (7) calendar days of the date of practical completion the principal agent shall issue to the contractor a works completion list defining the outstanding work and defects apparent at the date of practical completion to be completed or rectified to achieve works completion. (2) Where, in the opinion of the contractor, the works completion list has been completed the contractor shall notify the principal agent who shall inspect within seven (7) calendar days of receipt of such a notice. Where, in the opinion of the principal agent, the Works Completion list: (2)(a) Has been satisfactorily completed, the principal agent shall forthwith issue a certificate of Works Completion to the contractor with a copy to the employer

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19.8 Continued	(2)(b) Has not been satisfactorily completed, the principal agent shall forthwith identify the works completion list items that are not yet complete and inform the contractor thereof. The contractor shall repeat the procedure in terms of 19.8(2) (3) Should the principal agent not issue a works completion list, in terms of 19.8 (1) or 19.8 (2) (b), within seven (7) calendar days from the end of the inspection period, the contractor shall notify the employer and principal agent. Should the principal agent not issue such Works Completion list within seven (7) calendar days of receipt of such notice, the employer may within seven (7) calendar days issue to the contractor a Works Completion list. Should the employer: (3)(a) Not issue such works completion list within seven (7) calendar days, then the certificate of Works Completion shall be deemed to have been issued on the date of expiry of the initial notice period and works completion shall be deemed to have been achieved on such date (3b) Issue a works completion list and the work on Works Completion list not have been completed or where further defects have become apparent, the employer shall forthwith identify such items on the updated works completion list and notify the contractor. The contractor shall repeat the procedure in terms of 19.8 (2) (b) until such items have been completed to the satisfaction of the employer (4) Should the works completion list not be completed to the satisfaction of the employer within a period of twenty (20) working days of the issue final works completion list the contractor shall be liable to a daily penalty as described in B13. (5) The defects liability period in terms of 21.1 shall commence with the issue or deemed issue of the certificate of Works Completion in terms of 19.8(2)(a) or 19.8(3).
20.2.1.A	Add the following as: 20.2.1.A A certificate of Works Completion [19.8]
21.1	Replace clause 21.1 with the following: The defects liability period for the works shall commence on the calendar day following the date of works completion and end at midnight (00:00) ninety (90) calendar days from the date of works completion [CD] or when work on the list for completion has been satisfactorily attended to [21.6), whichever is the later (if we use works completion).
21.6	Replace clause 21.6 with the following: On the expiry of the ninety (90) calendar days defects liability period [21.1] for items not indicated as items with an extended liability as indicated in B14 and on receipt of the contractor's notice to the principal agent. And/or On the expiry of the defects liability period as indicated in B14, for items indicated in B14 and on receipt of the contractor's notice to the principal agent, the principal agent shall: (1) inspect the works And within ten (10) working days either issue a list for final completion detailing all outstanding work or defects that must be attended to, or rectified to achieve final completion or (2) issue the certificate of final completion to the contractor with a copy to the employer for that part of the works where defects liability period has expired.
21.6.1.	Omit clause.

21.6.2	Omit clause.
21.13	Add the following as clause 21.13 The ninety (90) calendar days defects liability period for the works [21.1] is replaced with an extended defects liability period of three hundred and sixty-five (365) calendar days in respect of the listed applicable elements in B14.
21.14	Add the following as clause 21.14 Penalties will be applied if the items on the completion list have not been attended to within a period of ninety (90) calendar days [21.1]. If additional defect items have being added to the list during this period, then the Principal Agent and Contractor will agree on a revised completion date. Failing in achieving the revised date will result in penalties being applied [B12.0].
22.3.2	No clause.
23.1	Refer to clause 6.7 [CD].
23.2	Refer to clause 6.7 [CD].
23.2.13	No clause.
23.3	Replace 23.3 with the following: Further circumstances that delays practical completion due to any other cause beyond the contractor's reasonable control that could not have reasonably been anticipated and provided for which the contractor may be entitled to a revision of the date for practical completion, with or without an adjustment of the contract value as determined by the Employer [6.7 CD].
23.7	Refer to clause 6.7 [CD].
23.8	Refer to clause 6.7 [CD].
24.1	Replace clause 24.1 with the following: Where the **contractor** fails to bring the **works,** or a **section** thereof, to **practical-, works-, or final- completion** by the applicable completion date [B10 CD], or the revised applicable completion date**,** the **contractor** shall be liable to the **employer** for the **penalty** [B10 CD].
24.2	Replace clause 24.2 with the following: Where the **employer** elects to levy such **penalty** the **employer,** or the **principal agent** on instruction from the **employer,** shall give **notice** thereof to the **contractor.** The **principal agent** shall determine the **penalty** due from the later of the date for **practical- works-, or final- completion** [B10 CD], or the revised date for **practical- works-, or final- completion,** up to and including the earlier of:
24.2.1	Replace clause 24.2.1 with the following: The actual or deemed date of **practical-, works- or final- completion** of the **works,** or a **section** thereof [23.7.1].
25.2	Replace clause 25.2 with the following: The principal agent shall issue at regular agreed intervals [CD] payment certificates, to the contractor with a copy to the employer, up to and including practical completion. Interim Payment certificates may be issued to the contractor between practical completion and the final payment certificate. A payment certificate may be for a nil or negative amount.

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25.3	Add the following to clause 25.3: 25.3.12 Monthly Local content report. 25.3.13 EPWP / NYS payment register, labour reports and certified ID document of EPWP/ NYS beneficiaries, Contract between Contractor and EPWP/ NYS beneficiaries, attendance register (if applicable). 25.3.14 Tax Invoice. 25.3.15 Labour intensive report. 25.3.16 Contract participation goal and cidb BUILD programme reports.
25.5	No Clause.
25.6	Replace clause 25.6 with the following: Materials and goods will only be certified and paid for upon providing proof of full payment to the supplier and proof of transfer of ownership from the supplier to the contractor by the contractor. Once paid, material and goods shall become the property of the employer and shall not be removed from site without the written authority of the Employer.
25.7.5	No clause.
25.10	Replace clause 25.10 with the following: The employer shall pay the contractor the amount stipulated in an issued payment certificate, correct in all material respects, within thirty (30) calendar days from the date of receiving the payment certificate and invoice including all other substantiating documentation for items certified in the payment certificate.
25.12	Replace clauses 25.12 to 25.12.3 with the following: The value certified shall be subject to the following percentage adjustments: (Clauses 25.12.1 to 25.12.5 shall be applicable to a contract sum up to R1 million. In the event of a contract sum more than R1 million for Options D & E (C 1.0 Securities [11.0]) Clauses 25.12.1 to 25.12.5 shall be applicable) 25.12.1 Where a **security** is selected in terms of C 1.0 Securities [11.0] the value of the **works** in terms of 25.1 and of the **materials and goods** in terms of 25.4 shall be certified in full. The value certified shall be subject to the following percentage adjustments: 25.12.2 Ninety-five per cent (95%) of such value in interim **payment certificates** issued up to the date of **practical completion.** 25.12.3 Ninety-seven per cent (97%) of such value in interim **payment certificates** issued on the date of **works completion** and up to but excluding the date of **final completion.** 25.12.4 Ninety-nine per cent (99%) of such value in interim **payment certificates** issued on the date of **final completion** and up to but excluding the final **payment certificate** in terms of 26. 25.12.5 One hundred per cent (100%) of such value in the final **payment certificate** in terms of 26 except where the amount certified is in favour of the **employer**. In such an event the payment reduction shall remain at the adjustment level applicable to the final **payment certificate**.

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25.12 Continued	(Clauses 25.12.6 to 25.12.10 shall be applicable to a contract sum more than R1 million for Option C (C 1.0 Securities [11.0]) 25.12.6 Where security is a payment reduction in term of Option C, the value of the **works** in terms of 25.1 and **materials and goods** in terms of 25.4 shall be certified in full. The value certified shall be subject to the following percentage adjustments: 25.12.7 Ninety per cent (90%) of such value in interim **payment certificates** issued up to the date of **practical completion.** 25.12.8 Ninety-seven per cent (97%) of such value in interim **payment certificates** issued on the date of **practical completion** and up to but excluding the date of **final completion.** 25.12.9 Ninety-nine per cent (99%) of such value in interim **payment certificates** issued on the date of **final completion** and up to but excluding the final **payment certificate** in terms of 26. 25.12.10 One hundred per cent (100%) of such value in the final **payment certificate** in terms of 26 except were the amount certified is in favour of the **employer**. In such an event the payment reduction shall remain at the adjustment level applicable to the final **payment certificate.**
26.1	Refer to clause 6.7 [CD].
26.4.3	Omit clause.
26.7	Refer to clause 6.7 [CD].
26.10	Replace 26.10 with the following: The **principal agent** shall prepare the final account in consultation with the employer and issue the **final account,** to the **contractor** within sixty (60) **working days** of the date of **practical completion.**
26.12	Refer to clause 6.7 [CD].
27.1. 2	Replace 27.1.2 with the following: Interest due to late payment only.
27.1.4	Replace 27.1.4 with the following: Interest due to late payment only.
27.1.5	No clause.
27.5	Add the following as clause 27.5: Where the employer decides to recover an amount due in terms of 27.2 from a construction guarantee, cash deposit or retention money held as security, the employer shall issue a written demand to the contractor before recovering the amount. Should such amount not be paid to the employer within fourteen (14) calendar days of the date-of notice by the employer, the employer may recover such an amount from the security.

27.6	Add the following as clause 27.6: Where a provisional sequestration or provisional liquidation order has been granted or where an order has been granted which commences sequestration, liquidation, bankruptcy, receivership, winding-up or any similar effect, against the contractor or this agreement is cancelled in terms of 29, the employer may issue a demand to the guarantor in terms of the construction guarantee or advance payment guarantee held as security.
28.0	No clause.
28.1	No clause.
28.1.1	No clause.
28.1.2	No clause.
28.1.3	No clause.
28.1.4	No clause.
28.1.5	No clause.
28.2	No clause.
28.3	No clause.
28.4	No clause.
29.1.4	Add the following as clause 29.1.4: The **contractor**'s estate has been sequestrated, liquidated or surrendered in terms of the insolvency laws in force within the Republic of South Africa.
29.1.5	Add the following as clause 29.1.5: The **contractor** has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
29.1.6	Add the following as clause 29.1.6: Honour his obligations in terms of clauses 10.1.5.1.3, 11.4.1 and 12.2. sub clauses 5, 6, 8, 9, 10, 11, 12, 13, 15, 16, 19, 20, 22.
29.7	Replace clause 29.7 with the following: The employer, on notice to the contractor, may recover damages from the contractor from the date of termination including, but not limited to, additional costs incurred in the completion, consultant cost, rental of alternative accommodation, invitation of completion tenders, salaries of officials and safeguarding the site, of the remaining work [25.3.7; 27.1.3].
29.9	Replace clause 29.9 with the following: The **employer** has the right of recovery against the **contractor,** where applicable, [CD] from: The guarantee for construction (variable) until the final payment has been made; **or** The guarantee for construction (fixed) until the date of practical completion**;** **or** The payment reduction until the final payment is made; **or** The cash deposit made as security until the final payment is made.
29.14.1	No clause.
29.14.3	No clause.

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29.14.4	No clause.
29.14.5	No clause.
29.14.6	No clause.
29.14.7	No clause.
29.15	No clause.
29.16	No clause.
29.17.3	No clause.
29.17.6	No clause.
29.21.5	No clause.
29.22	No clause.
29.23	No clause.
29.25.3	No clause.
29.25.4	No clause.
29.27	No clause.
30.2	Replace clause 30.2 with the following: Where such disagreement is not resolved within ten (10) working days of receipt of such notice it shall be deemed to be a dispute and shall be submitted to Mediation as a first method of dispute resolution failing which the parties will resort to Litigation.
30.3 to 30.7.7	No clauses.
30.8	Replace clause 30.8 with the following: The parties may, by agreement and at any time before Litigation, refer a dispute to mediation, in which event:
30.8.1	No clause.
30.8.2	Replace clause 30.8.2 with the following: The appointment of a mediator, the procedure, and the status of the outcome shall be agreed between the parties.
30.8.3	Replace clause 30.8.3 with the following: Regardless of the outcome of a mediation the parties shall bear their own costs concerning the Mediation and equally share the costs of the mediator and related expenses.
30.9	Replace clause 30.9 with the following: Institution of Litigation shall be commenced and process served within three (3) year from the date of existence of the dispute, failing which the dispute shall lapse.
30.10	No clause.
30.12	No clause.

B 19.0 CONTRACT PARTICIPATION GOAL TARGETS AND CIDB B.U.I.L.D. PROGRAMME

The contractor shall achieve in the performance of the contract the following Contract Participation Goals (CPGs) as described in PG-01.2 (EC): Scope of Work and PG-02.2 (EC): Pricing Assumptions and in accordance with the feasibility study, which forms part of the specifications in the CPG Section of the Specification of this contract.

(a)	Minimum 30% mandatory Subcontracting to SMMEs in accordance with the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2017 as published in the Government Gazette Notice No. 40553 of 20 January 2017 – Condition of Tender. (Applicable to all projects above R30 Mil for all class of works categories)	***Not applicable***
(b)	Minimum Targeted Local Manufacturers of Material Contract Participation Goal, in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract. (Applicable to projects which require 7GB or 7CE cidb grading, i.e. R20 000 001 and above with minimum 6 month construction period)	***Applicable***
(c)	Minimum Targeted Local Building Material Suppliers Contract Participation Goal in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract. (Applicable to projects which require 7GB or 7CE cidb grading, i.e. R20 000 001 and above with minimum 6 month construction period)	***Applicable***
(d)	Minimum Targeted Local Labour Skills Development Contract Participation Goal in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract. (Applicable to projects which require Grade 7 to 9 cidb grading, i.e. R20 000 001 and above with minimum 12 month construction period)	***Applicable***
(e)	cidb BUILD Programme: Minimum Targeted Enterprise Development Contract Participation Goal in accordance with the cidb Standard for Indirect Targeting for Enterprise Development through Construction Works Contracts, No 36190 Government Gazette, 25 February 2013, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract. (Applicable to projects which require 7GB or 7CE cidb grading, i.e. R20 000 001 and above with minimum 6 month construction period)	***Applicable***
(f)	cidb BUILD Programme: Minimum Targeted Contract Skills Development Goal in accordance with the cidb Standard for Developing Skills through Infrastructure Contracts as published in the Government Gazette Notice No. 43495 of 3 July 2020, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract. (Applicable to projects which require cidb Grade 7 and above for all class of works categories, i.e. R20 000 001 and above with minimum 12 month construction period)	***Applicable***
(g)	DPWI National Youth Service training and development programme (NYS) – Condition of Contract. (Applicable to projects with a minimum contract value R2 Mil and minimum 12 month construction period.	***Applicable***

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(h)	Labour Intensive Works – Condition of Contract. (Applicable to all CE projects and all GB projects ≥ R30 million)	***Not applicable***
(i)		***Select***
(j)		***Select***

PART 2: CONTRACT DATA COMPLETED BY THE TENDERER:

C TENDERER'S SELECTIONS

C 1.0 Securities [11.0]

In respect of contracts with a contract sum up to R1 million, the security to be provided by the contractor to the employer will be a payment reduction of five per cent (5%) of the value certified in the payment certificate (excluding VAT).

In respect of contracts with a contract sum more than R1 million, the security to be provided by the contractor to the employer will be selected by the Contractor as indicated below:

Guarantee for construction: Select Option A, B, C, D or E

Option A	cash deposit of 10 % of the contract sum (excluding VAT)
Option B	variable construction guarantee of 10 % of the contract sum (excluding VAT) (DPW-10.3 EC)
Option C	payment reduction of 10% of the value certified in the payment certificate (excluding VAT)
Option D	cash deposit of 5% of the contract sum (excluding. VAT) and a payment reduction of 5% of the value certified in the payment certificate (excluding. VAT)
Option E	fixed construction guarantee of 5% of the contract sum (excluding VAT) and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT) (DPW-10.1 EC)]

NB: Insurances submitted must be issued by either an insurance company duly registered in terms of the Insurance Act [Long-Term Insurance Act, 1998 (Act 52 of 1998) or Short-Term Insurance Act, 1998 (Act 53 of 1998)] or by a bank duly registered in terms of the Banks Act, 1990 (Act 94 of 1990) on the pro-forma referred to above. No alterations or amendments of the wording of the pro-forma will be accepted.

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Guarantee for payment by **employer** [11.5.1; 11.10]	Not applicable
Advance payment, subject to a **guarantee for advance payment** [11.2.2; 11.3]	Not applicable

C 2.0 Payment of preliminaries [25.0]

Contractor's selection

Select Option A or B

Where the **contractor** does not select an option, Option A shall apply

Payment methods

Option A	The **preliminaries** shall be paid in accordance with an amount prorated to the value of the **works** executed in the same ratio as the amount of the **preliminaries** to the **contract sum**, which **contract sum** shall exclude the amount of **preliminaries**. Contingency sum(s) and any provision for cost fluctuations shall be excluded for the calculation of the aforesaid ratio

Option B	The **preliminaries** shall be paid in accordance with an amount agreed by the **principal agent** and the **contractor** in terms of the **priced document** to identify an initial establishment charge, a time-related charge and a final dis-establishment charge. Payment of the time-related charge shall be assessed by the **principal agent** and adjusted from time to time as may be necessary to take into account the rate of progress of the **works**

Lump sum contract

Where the amount of **preliminaries** is not provided it shall be taken as 7.5% (seven and a half per cent) of the **contract sum**, excluding contingency sum(s) and any provision for cost fluctuations.

C 3.0 Adjustment of preliminaries [26.9.4]

Contractor's selection

Select Option A or B

Where the **contractor** does not select an option, Option A shall apply.

Provision of particulars

The **contractor** shall provide the particulars for the purpose of the adjustment of **preliminaries** in terms of his selection. Where completion in **sections** is required, the **contractor** shall provide an apportionment of **preliminaries** per **section.**

Option A	An allocation of the **preliminaries** amounts into Fixed, Value-related and Time-related amounts as defined for adjustment method Option A below, within fifteen (15) **working days** of the date of acceptance of the tender
Option B	A detailed breakdown of the **preliminaries** amounts within fifteen (15) **working days** of possession of the **site**. Such breakdown shall include, inter alia, the administrative and supervisory staff, the use of **construction equipment**, establishment and dis-establishment charges, insurances and guarantees, all in terms of the **programme**

Adjustment methods

The amount of **preliminaries** shall be adjusted to take account of the effect which changes in time and/or value have on **preliminaries**. Such adjustment shall be based on the particulars provided by the **contractor** for this purpose in terms of Options A or B, shall preclude any further adjustment of the amount of **preliminaries** and shall apply notwithstanding the actual employment of resources by the **contractor** in the execution of the **works.**

Option A	The **preliminaries** shall be adjusted in accordance with the allocation of **preliminaries** amounts provided by the **contractor,** apportioned to **sections** where completion in **sections** is required Fixed - An amount which shall not be varied. Value-related - An amount varied in proportion to the **contract value** as compared to the **contract sum**. Both the **contract sum** and the **contract value** shall exclude the amount of **preliminaries**, contingency sum(s) and any provision for cost fluctuations. Time-related - An amount varied in proportion to the number of **calendar days** extension to the date of **practical completion** to which the **contractor** is entitled with an adjustment of the **contract value** [23.2; 23.3] as compared to the number of **calendar days** in the initial **construction period** [26.9.4].
Option B	The adjustment of **preliminaries** shall be based on the number of **calendar days** extension to the date of **practical completion** to which the **contractor** is entitled with an adjustment of the **contract value** [23.2; 23.3] as compared to the number of **calendar days** in the initial **construction period** [26.9.4]. The adjustment shall take into account the resources as set out in the detailed breakdown of the **preliminaries** for the period of construction during which the delay occurred.

Failure to provide particulars within the period stated

Option A	Where the allocation of **preliminaries** amounts for Option A is not provided, the following allocation of **preliminaries** amounts shall apply: Fixed - Ten per cent (10%) Value-related - Fifteen per cent (15%) Time-related - Seventy-five per cent (75%) Where the apportionment of the **preliminaries** per **section** is not provided, the categorised amounts shall be prorated to the cost of each **section** within the **contract sum** as determined by the **principal agent**
Option B	Where the detailed breakdown of **preliminaries** amounts for Option B is not provided, Option A shall apply

Lump sum contract

Where the amount of **preliminaries** is not provided it shall be taken as 7.5% (seven and a half per cent) of the **contract sum**, excluding contingency sum(s) and any provision for cost fluctuations.

C1.3: Form of Guarantee

DPW-10.1 (EC): FIXED CONSTRUCTION GUARANTEE - JBCC 2000 PRINCIPAL BUILDING AGREEMENT (EDITION 6.2 OF MAY 2018)

Director-General
Department of Public Works and Infrastructure
Government of the Republic of South Africa

FOR ATTENTION

Project Manager
Private Bag X9469
Polokwane
0700

Sir,

FIXED CONSTRUCTION GUARANTEE FOR THE EXECUTION OF A CONTRACT IN TERMS OF JBCC 2000 (EDITION 6.2 OF MAY 2018)

1. With reference to the contract between _____

_____ _____(hereinafter referred to as the "**contractor**") and the Government of the Republic of South Africa in its Department of Public Works and Infrastructure (hereinafter referred to as the "**employer**"), Contract/Tender No: PLK23/09, for the Thohoyandou High Court: Repair and Renovations (hereinafter referred to as the "contract") in the amount of R _____,
(_____***),***
(hereinafter referred to as the **contract sum**),

I / We, _____

in my/our capacity as _____and hereby

representing _____ (hereinafter referred to as the "**guarantor**") advise that the **guarantor** holds at the **employer's** disposal the sum of R _____,
(_____**)**
being 5**%** of the **contract sum** (excluding VAT), for the due fulfillment of the contract.

2. The **guarantor** hereby renounces the benefits of the exceptions *non numeratae pecunia; non causa debiti; excussionis et divisionis;* and *de duobus vel pluribus reis debendi* which could be pleaded against the enforcement of this guarantee, with the meaning and effect whereof I/we declare myself/ourselves to be conversant, and undertake to pay the **employer** the amount guaranteed, on receipt of a written demand from the **employer** to do so, stating that the **employer** has a right of recovery against the **contractor** in terms of 33.0 of the contract.

3. Subject to the above, but without in any way detracting from the **employer's** rights to adopt any of the procedures provided for in the contract, the said demand can be made by the **employer**, at any stage prior to the expiry of this guarantee.

4. The amount paid by the **guarantor** in terms of this guarantee may be retained by the **employer** on condition that upon the issue of the last final **payment certificate**, the **employer** shall account to the **guarantor** showing how this amount has been expended and refund any balance due to the **guarantor**.

Tender no: ***(Insert Tender Number)***

5. The **employer** shall have the absolute right to arrange his affairs with the **contractor** in any manner which the **employer** deems fit and the **guarantor** shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the **guarantor**. Without derogating from the aforegoing, any compromise, extension of the **construction period**, indulgence, release or variation of the **contractor's** obligation shall not affect the validity of this guarantee.

6. The **guarantor** reserves the right to withdraw from this guarantee at any time by depositing the guaranteed amount with the **employer**, whereupon the guarantor's liability ceases.

7. This guarantee is neither negotiable nor transferable, and

   (a) must be surrendered to the **guarantor** at the time when the **employer** accounts to the **guarantor** in terms of clause 4 above, or
   (b) shall lapse on the date of the last **certificate of practical completion**.

8. This guarantee shall not be interpreted as extending the **guarantor's** liability to anything more than payment of the amount guaranteed.

SIGNED AT _____ **ON THIS** _____ **DAY OF**

_____ **20**__

AS WITNESS

1. _____

2. _____

_____

By and on behalf of

_____

_____

_____

(insert the name and physical address of the guarantor)

NAME: _____

CAPACITY: _____
(duly authorised thereto by resolution attached marked Annexure A)

DATE: _____

A. No alterations and/or additions of the wording of this form will be accepted.

B. The physical address of the guarantor must be clearly indicated and will be regarded as the guarantor's *domicilium citandi et executandi*, for all purposes arising from this guarantee.

C. This GUARANTEE must be returned to: _____

DPW-10.3 (EC): VARIABLE CONSTRUCTION GUARANTEE - JBCC 2000 PRINCIPAL BUILDING AGREEMENT (EDITION 6.2 OF MAY 2018)

Director-General
Department of Public Works and Infrastructure
Government of the Republic of South Africa

FOR ATTENTION

Project Manager
Private Bag ***X9469***
Polokwane
0700

Sir,

VARIABLE CONSTRUCTION GUARANTEE FOR THE EXECUTION OF A CONTRACT IN TERMS OF JBCC 2000 (EDITION 6.2 OF MAY 2018)

1. With reference to the contract between _____

_____ _____(hereinafter referred to as the "**contractor"**) and the Government of the Republic of South Africa, in its Department of Public Works and Infrastructure, (hereinafter referred to as the "**employer**"), Contract/Tender No: ***PLK23/09***, for the ***Thohoyandou High Court: Repair and Renovations*** (hereinafter referred to as the **"contract"** in the amount of R _____, **(**_____**)** (hereinafter referred as the **contract sum),**

I / We, _____

in my/our capacity as _____and hereby

representing _____ (hereinafter referred to as the "**guarantor**") advise that the **guarantor** holds at the **employer's** disposal the sum of R _____, **(**_____**)** being 10**%** of the **contract sum** (excluding VAT), for the due fulfillment of the contract.

2. I / We advise that the **guarantor's** liability in terms of this guarantee shall be as follows:

   (a) From and including the date on which this guarantee is issued and up to and including the date of payment of the amount in the last final **payment certificate**, the **guarantor** will be liable in terms of this guarantee to the maximum amount of 10% of the **contract sum** (excluding VAT);

   (b) The **guarantor's** liability shall reduce to 3 % of the **contract value** (excluding VAT) as determined at the date of the last **certificate of practical completion**, subject to such amount not exceeding 10% of the **contract sum** (excluding VAT).

   (c) The **guarantor's** liability shall reduce to 1 % of the **contract value** (excluding VAT) as determined at the date of the last **certificate of final completion**, subject to such amount not exceeding 10 % of the **contract sum** (excluding VAT).

   (d) This guarantee shall expire on the date of the last **final payment certificate**.

   (e) The **practical completion certificate** and the **final completion certificate** referred to in this guarantee shall mean the certificates issued in terms of the contract.

Tender no: ***PLK23/09***

3. The **guarantor** hereby renounces the benefits of the exceptions *non numeratae pecunia; non causa debiti; excussionis et divisionis;* and *de duobus vel pluribus reis debendi* which could be pleaded against the enforcement of this guarantee, with the meaning and effect whereof I/we declare myself/ourselves to be conversant, and undertake to pay the **employer** the amount guaranteed on receipt of a written demand from the **employer** to do so, stating that the **employer** has a right of recovery against the **contractor** in terms of 33.0 of the contract.

4. Subject to the above, but without in any way detracting from the **employer's** rights to adopt any of the procedures provided for in the contract, the said demand can be made by the **employer** at any stage prior to the expiry of this guarantee.

5. The amount paid by the **guarantor** in terms of this guarantee may be retained by the **employer** on condition that upon the issue of the last **final payment certificate**, the **employer** shall account to the **guarantor** showing how this amount has been expended and refund any balance due to the **guarantor**.

6. The **employer** shall have the absolute right to arrange his affairs with the **contractor** in any manner which the **employer** deems fit and the **guarantor** shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the **guarantor**. Without derogating from the aforegoing, any compromise, extension of the construction period, indulgence, release or variation of the **contractor's** obligation shall not affect the validity of this guarantee.

7. The **guarantor** reserves the right to withdraw from this guarantee at any time by depositing the amount guaranteed with the **employer**, whereupon the **guarantor's** liability ceases.

8. This guarantee is neither negotiable nor transferable, and

   (a) must be surrendered to the **guarantor** at the time when the **employer** accounts to the **guarantor** in terms of clause 5 above, or

   (b) shall lapse in accordance with clause 2(d) above.

9. This guarantee shall not be interpreted as extending the **guarantor's** liability to anything more than the payment of the amount guaranteed.

SIGNED AT _____ **ON THIS** _____ **DAY OF** _____ **20**__

AS WITNESS

1. _____

2. _____

Tender no: ***PLK23/09***

By and on behalf of

_____

_____

_____

(insert the name and physical address of the guarantor)

NAME: _____

CAPACITY: _____
(duly authorised thereto by resolution attached marked Annexure A)

DATE: _____

A. **No alterations and/or additions of the wording of this form will be accepted.**

B. **The physical address of the guarantor must be clearly indicated and will be regarded as the guarantor's *domicilium citandi et executandi*, for all purposes arising from this guarantee.**

C. **This guarantee must be returned to:** _____

_____

_____

Part C2: Pricing Data

C2.1: Pricing Instructions

PG-02.2 (EC) PRICING ASSUMPTIONS - JBCC 2000 PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018)

Project title:	***Thohoyandou High Court: Repair and Renovations***				
Tender / Quotation no:	*PLK23/09*	**WCS no:**	*048609*	**Reference no:**	*6054/0070*

C2.1 Pricing Assumptions

C2.1.1 BILLS OF QUANTITIES / LUMP SUM DOCUMENT

The **bills of quantities / lump sum document** forms part of and must be read and priced in conjunction with all the other documents forming part of the **contract documents**, the Standard Conditions of Tender, Conditions of Contract, Specifications, Drawings and all other relevant documentation.

The prices and rates to be inserted by the Tenderer in the Bill of Quantities shall be the full inclusive prices to be paid by the Employer for the work described under the several items, and shall include full compensation for all cost and expenses that may be required in and for the completion and maintenance during the defects liability period of all the work described and as shown on the drawings as well as all overheads, profits, incidentals and the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the Tender is based.

Each item shall be priced and extended to the "Total' column by the Tenderer, with the exception of the items for which only rates are required, or items which already have Prime Cost or Provisional Sums affixed thereto. If the Contractor omits to price any items in the Bill of Quantities, then these items will be considered to have a nil rate or price.

No alterations, erasures, omissions or additions is to be made in the text and/or conditions of these Bills of Quantities. Should any such alterations, amendments, note/s or addition be made, the same will not be recognized, but reading of these Bills of Quantities as originally prepared by the Quantity Surveyor will be adhered to.

The contractor is cautioned that the use of any quantities appearing in these Bills of Quantities for the purpose of ordering material, it is done at own risk and no liability whatsoever will be admitted by the Employer or Quantity Surveyor for the correctness of such Quantities. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

The prices and rates to be inserted by the Tenderer in the Bills of Quantities shall be the full inclusive prices to be paid by the Employer for the work described. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Market related prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out. The Employer reserves the right to balance the Bill rates were deemed necessary within the Tendered Amount.

A price or rate is to be entered against each item in the Bills of Quantities, whether the quantities are stated or not. An item against which no rate is/are entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or the word "included" or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been entered against that item, i.e. that there is no charge for that item. The Tenderer may be requested to clarify nil rates, or items regarded as having nil rates; and the Employer may also perform a risk analysis with regard to the reasonableness of such rates.

Should the full intent and meaning of any description not be clear, the bidder shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of National Best Practice.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract.

The Tenderer is required to check the Bills of Quantities and the numbers of the pages and should any be found to be missing or in duplicate, or should any of the typing be indistinct, or any doubt of obscurity arise as to the meaning of any description or particulars of any item, or if this Tender Enquiry contains any obvious errors, then the Tenderer must immediately inform the Principal Agent and have them rectified or explained in writing as the case may be. No liability whatsoever will be admitted by reason of the Contractor having failed to comply with the foregoing instruction.

The contractor is cautioned that the use of any quantities appearing in these Bills of Quantities for the purpose of ordering material, it is done at own risk and no liability whatsoever will be admitted by the Employer or Quantity Surveyor for the correctness of such Quantities. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

No alterations, erasures, omissions, or additions are allowed to be made to the text and/or conditions contained in these Bills of Quantities. If any such alteration, amendment, note or addition is made, it will not be recognised and the Bills of Quantities will be deemed to be as originally drawn up by the Quantity Surveyor.

A price or rate is to be entered against each item in the Bills of Quantities, whether the quantities are stated or not. An item against which no rate is/are entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or the word "included" or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been entered against that item, i.e. that there is no charge for that item. The Tenderer may be requested to clarify nil rates, or items regarded as having nil rates; and the Employer may also perform a risk analysis with regard to the reasonableness of such rates.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract.

The Tenderer shall fill in rates for all items where the words "rate only' appear in the "Total" column. "Rate Only" items have been included where:

(a) Variations of specified components in the make-up of a pay item may be expected; and
(b) No work under the item is foreseen at tender stage but the possibility that such work may be required is not excluded.

For 'Rate Only" items no quantities are given in the "Quantity" column but the quoted rate shall apply in the event of work under this item being required. The Tenderer shall however note that in terms of the Tender Data the Tenderer may be asked to reconsider any such rates which the Employer may regard as unbalanced.

Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the "PW 371" and the principles contained in the latest version of the Standard System for Measuring Builders' Work in South Africa. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the bidder shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of National Best Practice.

The price quoted against each item of this Bills of Quantities shall cover the full inclusive cost of the complete work to which it refers, as described in the Conditions of Contract and Specifications and as shown on the Drawings and shall allow for labour, material, transporting, loading, storage, supervision, commissioning, wastage, as well as the builders profit and attendance.

The Tenderer must ensure that he fully completes all columns of the Bill of Quantities including the Final Summary. The fully priced bill of quantities must be submitted with the tender or The Final Summary and the Section Summary pages MUST be returned with the tender document as indicated the PA-03 Notice and Invitation to Tender / PA-04 Notice and Invitation for quotation.

The tenderers are to ensure that they have read and understood the project specifications included in C3: Scope of Work. All the information provided in the Scope of Works form part of the work and must be included in the rates.

"The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself before submitting his tender (as far as is practicable) as to:

(a) the form and nature of the Site and its surroundings, including subsurface conditions,

(b) the hydrological and climatic conditions,

(c) the extent and nature of work and materials necessary for the execution and completion of the Works,
(d) the means of access to the Site and the accommodation he may require

and, in general, shall be deemed to have obtained all information (as far as is practicable) as to risks, contingencies and all other circumstances which may influence or affect his Tender"

C2.1.2 VALUE ADDED TAX

The contract sum must include for Value Added Tax (VAT). All rates, provisional sums, etc. in the bills of quantities / lump sum document shall be in Rands and cents and shall include all levies and taxes (other than VAT). VAT will be added in the summary of the Bill of Quantities. The rates must however be net (exclusive of VAT) with VAT calculated and added to the total value thereof in the Final Summary. All rates and amounts quoted in the Bill of Quantities

C2.1.3 CORRECTION OF ENTRIES

Incorrect entries shall not be erased or obliterated with correction fluid but must be crossed out neatly. The correct figures must be entered above or adjacent to the deleted entry, and the alteration must be initialled by the Tenderer.

C2.1.4 ARITHMETICAL ERRORS

Arithmetical errors found in the Bill of Quantities as a result of faulty multiplication of addition, will be corrected by the Engineer at the tender evaluation stage, as set out in the Tender Data.

C2.1.5 TRADE NAMES

Tenderers attention is drawn to the fact that wherever trade names or references to any catalogue have been made in these Bills of Quantities, it is purely to establish a standard for the required material. If use is made of any other equally approved material in lieu of the prescribed trade name or catalogue, the necessary price adjustments will be made.

C2.1.6 CONTRACT DOCUMENTS

The Tenderers are advised to examine the bills of quantities, drawings and specifications including all other contract documents and make themselves thoroughly acquainted with the nature and requirements of the work, as no claim for extra payment in this regard will be entertained. Should any parts of the drawings not be clearly intelligible to the Tender, he must, before submitting his tender, obtain clarification from the Principal Agent.

C2.1.7 FIXED PRICE CONTRACT

(a)

The Bills of Quantities document is not a fixed price contract and the Tenderers are to take note that contract price adjustments (CPAP) are applicable to this contract.

C2.1.8 PAYMENTS

Interim valuations and payments will be prepared on a monthly basis, all in terms of the conditions of contract.

The contractor is to note that no payment will be made for materials stored off site and in the case of materials being stored on site, payment will only be made for such materials on condition that they have not been delivered to the site prematurely, a tax invoice and proof of payment (ownership) is submitted by the Contractor.

C2.1.9 ACCOMMODATION ON SITE

It is imperative to note that no living quarters for construction workers on site will not be permitted for the full duration of the contract unless otherwise stated in the contract data or permission be granted by the Employer.

C2.1.10 LOCAL MATERIAL UTILISATION REPORT (LOCAL CONTENT)

Bidders to note that materials procured for the works should be from South African manufactures and suppliers. Imported materials shall only be considered under exceptional circumstances, based on compelling technical justifications, and subject to the approval by the NDPWI.

The contractor shall achieve in the performance of this contract the prescribed local content deliverables as listed in PA36 and annexures C thereto in the respective designated sectors as published by Department Trade Industry and Competition (DTIC). The Service Provider shall submit an accumulative monthly report to the Employer's representative indicating the percentage targets achieved which must be reconciled upon completion of the project and to form part of the final account.

The contractor shall be responsible for record keeping, documenting and submission of monthly local material utilization report with supporting documentation to the Employer's representative within 7 working days of the beginning of the successive month, in terms of DTI&C designated industry/sector/sub-sector schedule as per the PA36 and Annexures C attached to the tender document. The final percentage achievement to be reconciled upon completion of the project and form part of the final account.

Failure by the contractors to achieve the specified percentage of local content per designated industry/sector/sub-sector as listed will result in a thirty percent thirty percent (30%) penalty of the value not achieved, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control. Allowance must be made for submitting monthly reports illustrating the value of local material utilisation report.

C2.1.11 CONTRACT PARTICIPATION GOALS AND CIDB BUILD PROGRAMME

The contractor shall achieve in the performance of this contract the following Contract Participation Goals (CPGs) as indicated below:

Provision for pricing of compliance with the achieving the CPGs is made in the Contract Participation Goal Section of the Bills of Quantities and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced thereunder and no additional claims in this regard shall be entertained

Monthly progressive reports to be submitted to the Employer's representative indicating the percentage targets achieved which must be reconciled upon completion of the project and to form part of the final account.

C2.1.11.1 MINIMUM THIRTY PERCENT 30% SUB-CONTRACTING CONTRACT PARTICIPATION GOAL

MINIMUM THIRTY PERCENT (30%) MANDATORY SUBCONTRACTING TO SMMES: IMPLEMENTATION OF PREFERENCIAL PROCUREMENT RGULATIONS 2017

30% Mandatory subcontracting is *not applicable* to this project.

Provision is made within the Contract Participation Goal section in the Bill of Quantities for thirty percent (30%) subcontracting to SMMEs in the execution of this project as described in PG-01.2 (EC) SCOPE OF WORKS C3.6.1. The contractor shall price his Profit and Attendance, all inclusive of associated costs to the contractor for implementation. Allowance must be made for submitting reports to the Employer's Representative on a monthly basis in terms of monthly and accumulative targets achieved with audited supporting documentation.

C2.1.11.2 MINIMUM TARGETED LOCAL BUILDING MATERIAL MANUFACTURERS CONTRACT PARTICIPATION GOAL

The Minimum Targeted Local Building Material Manufacturers CPG is *applicable* to this project.

Provision is made within the Contract Participation Goal section in the Bill of Quantities for the Minimum Targeted Local Building Material Manufacturers CPG in the execution of this project as described in PG-01.2 (EC) SCOPE OF WORKS C3.6.2. The contractor shall price his Profit and Attendance, all inclusive of associated costs to the contractor for implementation. Allowance must be made for submitting reports to the Employer's Representative on a monthly basis in terms of monthly and accumulative targets achieved with audited supporting documentation.

C2.1.11.3 MINIMUM TARGETED LOCAL BUILDING MATERIAL SUPPLIERS CONTRACT PARTICIPATION GOAL

The Minimum Targeted Local Building Material Suppliers CPG is *applicable* to this project.

Provision is made within the Contract Participation Goal section in the Bill of Quantities for the Minimum Targeted Local Building Material Suppliers CPG in the execution of this project as described in PG-01.2 (EC) SCOPE OF WORKS C3.6.3. The contractor shall price his Profit and Attendance, all inclusive of associated costs to the contractor for implementation. Allowance must be made for submitting reports to the Employer's Representative on a monthly basis in terms of monthly and accumulative targets achieved with audited supporting documentation.

C2.1.11.4 MINIMUM TARGETED LOCAL LABOUR SKILLS DEVELOPMENT CONTRACT PARTICIPATION GOAL

The Minimum Targeted Local Labour Skills Development CPG is *applicable* to this project.

Provision is made within the Contract Participation Goal section in the Bill of Quantities for the Minimum Targeted Local Labour Skills Development CPG in the execution of this project as described in PG-01.2 (EC) SCOPE OF WORKS C3.6.4. The contractor shall price his Profit and Attendance, all inclusive of associated costs to the contractor for implementation. Allowance must be made for submitting reports to the Employer's Representative on a monthly basis in terms of monthly and accumulative targets achieved with audited supporting documentation.

C2.1.11.5 CIDB BUILD PROGRAMME: MINIMUM TARGETED ENTERPRISE DEVELOPMENT: CONTRACT PARTICIPATION GOALS (CPG)

The Minimum Targeted Enterprise Development CPG is *applicable* to this project.

A provisional amount has been allowed for within the Contract Participation Goal section in the Bill of Quantities for the Minimum Targeted Enterprise Development CPG in the execution of this project as described in PG-01.2 (EC) SCOPE OF WORKS C3.6.5. The provisional amount allowed is for the appointment of training coordinator, mentor, training service providers and training of the beneficiary enterprises.

The contractor shall price his Profit and Attendance, all inclusive of associated costs to the contractor for implementation. Allowance must be made for submitting reports to the Employer's Representative on a monthly basis in terms of monthly and accumulative targets achieved with audited supporting documentation.

The contractor shall complete a separate bill of quantities upon the award of the project and identification of the respective beneficiaries and the appointment of the training coordinator, mentor, training service providers of which the cost will be offset against the provisional amount allowed in the Bills of Quantities.

C2.1.11.6 CIDB BUILD PROGRAMME: MINIMUM TARGETED CONTRACT SKILLS DEVELOPMENT GOALS (CSDG)

The Minimum Targeted Contract Skills Development CPG is *applicable* to this project.

A provisional amount has been allowed for within the Contract Participation Goal section in the Bill of Quantities for the Minimum Targeted Skills Development CPG in the execution of this project as described in PG-01.2 (EC) SCOPE OF WORKS C3.6.6. The provisional amount allowed is for:

- stipends payable to the beneficiaries
- appointment of training coordinator
- appointment of mentor (where applicable)
- appointment of training service providers
- other additional costs as per table 3 of the Standard

The contractor shall price his Profit and Attendance (all inclusive of associated costs to the contractor for implementation and reporting), based on the provisional amount in the Contract Participation Goal section in the Bill of Quantities. The contractor shall complete a separate bill of quantities upon the award of the project and identification of the respective beneficiaries. The CPG value to be achieved will be based on the actual contract amount which will be offset against the provisional amount allowed for within the Contract Participation Goal section in the Bill of Quantities.

Allowance must be made for submitting reports to the Employer's Representative on a monthly basis in terms of monthly and accumulative targets achieved with audited supporting documentation.

Payment

The contractor shall upon the appointment of beneficiaries, provide a breakdown of all the associated costs. The contractor shall provide a payment schedule as to how the CPG costs will be claimed against for inclusion in the monthly payment certificates.

(a) Payment to the contractor to accommodate Part/Full Occupational qualification and Trade qualifications;

Should the contractor select Part/Full Occupational qualification and Trade qualifications learners, then the employer shall make provision for payment to the contractor as indicated in Table 3 of the Standard.

The contract skills participation goal, expressed in Rand, shall not be less than the contract amount multiplied by a percentage (%) factor given in Table 2 in the Standard for the applicable class of construction works. Should the contractor select Part/Full Occupational qualification and Trade qualifications learners, then the employer shall make provision for payment to the contractor as indicated in Table 3 of the Standard.

No provision for an additional payment item for the payment of the supervisor and/or mentors for the provision of training as provided for in the Contract Participation Goal section in the Bill of Quantities for the training of part/full time occupational learners and/or trade qualification learners. The associated cost is deemed to be included in general supervision on site.

The contractor shall complete a separate bill of quantities upon award, indicating the type and number of beneficiaries as well as the associated Notional Cost of Training to be provided, on which payment will be based.

(b) Payment to the contractor to accommodate Work Integrated Learners and Candidates for professional registration;

Should the contractor select Work Integrated Learners and/or Candidates for professional registration, then the employer shall make provision for payment to the contractor as indicated in Table 3 of the Standard.

Provisional amounts have been included in the Contract Participation Goal section in the Bill of Quantities for the training of Work Integrated Learners and Candidates for professional registration. The contractor shall price his Profit and Attendance (all inclusive of associated costs to the contractor for implementation and reporting), based on the provisional amount in the Contract Participation Goal section in the Bill of Quantities.

The contractor shall complete a separate bill of quantities upon award, indicating the type and number of beneficiaries as well as the associated Notional Cost of Training to be provided, on which payment will be based.

The CPG value to be achieved will be based on the contract amount as defined by the Standard, which will be offset against the provisional amount allowed for within the Contract Participation Goal section in the Bill of Quantities.

The contractor shall apportion the cost of accommodating work integrated learners (P1 and P2 learners) and candidates for professional registration by using Table 3 in the Standard and this cost will be used to determine the Rand value and will be used in determining the contract participation goal in the Bills of Quantities.

Table 3: Notional Cost of Training; Headcount
Source: cidb Standard for Skills Development

Type of Training Opportunity	Provision for stipends (Unemployed learners only)	Provisions for mentorship	Provisions for additional costs*	Total costs	
				Unemployed learners	Employed learners
Method 1					
Occupational qualification	**R7 000**	**R0**	**R9 000**	**R16 000**	**R9 000**
Method 2					
TVET College graduates	**R14 000**	**R0**	**R9 000**	**R23 000**	**N/A**
Apprenticeship	**R14 000**	**R0**	**R12 000**	**R26 000**	**R12 000**
Method 3					
P1 and P2 learners	**R24 000**	**R20 000**	**R4 500**	**R48 500**	**N/A**
Method 4					
Candidates with a 3 year diploma	**R37 000**	**R20 000**	**R4 500**	**R61 500**	**R20 000**
Candidates with 4 year qualification	**R47 000**	**R20 000**	**R4 500**	**R71 500**	**R20 000**

Note: the required CPG will be recalculated based on the awarded tender amount and "Contract amount" once the beneficiaries have been appointed and actual costs are known. The notional cost of providing training opportunities will increase by CPI on an annual basis based on April CPI. Should the rates increase after bid award or during construction the rates will be adjusted as a remeasuarble item.

Example: Training Target Calculation for a R65,7m GB contract

Contract amount	R65 700 000
Contract duration	12 Months
CSDG factor	0,50%
Minimum CSDG target	0,50% x R65 700 000 = R328 500 (Minimum requirement)

Table 4: Notional cost recalculation upon appointment of beneficiaries

Skills Types	Number of learners	Notional Cost / Learner / Quarter	Notional cost/learner/year	Total Notional Cost over 12 months Contract
Method 2: Workplace learning opportunities, with unemployed TVET graduates	1	R23 000	R92 000	R92 000
Method 3: Candidacy for an unemployed learner with a 3-year qualification	1	R61 500	R246 000	R246 000
Total	2			R338 000

C2.1.11.7 NATIONAL YOUTH SERVICE TRAINING AND DEVELOPMENT PROGRAMME

The National Youth Service Training and Development Programme is *applicable* to this project.

The programme shall be implemented in terms of the Implementation of the National Youth Service Programme under the Expanded Public Works (EPWP) and shall be priced in the CPG section of the Bills of Quantities.

Provision has been made within the Contract Participation Goal section in the Bill of Quantities for the National Youth Service Training and Development Programme CPG in the execution of this project as described in PG-01.2 (EC) SCOPE OF WORKS C3.6.7. The contractor to price all elements of this section and allowance must be made for submitting monthly reports in the prescribed manner as per examples of reports bound in the specification document.

C2.1.11.8 LABOUR-INTENSIVE WORKS

Labour Intensive Works is not *applicable* to this project.

Where labour intensive work is specified in the Bill of Qualities and indicated by "LI" the contractor must price for and include in rates. Contractors are expected to use their initiative to identify additional activities that can be done labour-intensively to comply with the set minimum labour intensity target. Allowance must be made for submitting monthly reports illustrating the value of the works executed under Labour Intensive Works.

C2.2 Submission of Accrual Reports

The Contractor shall submit accrual reports to the client representative at the end of March and September each year for the duration of the Service Contract period from the date of appointment up to and including project closeout. This is to ensure that PMTE complies with the accounting framework GRAP, which requires that PMTE disclose all its accruals as at the end of each reporting date. Allowance must be made for submitting reports to the Employer's Representative on a monthly basis in terms of monthly and accumulative targets achieved with audited supporting documentation.

Part C3: Scope of Work

C3: Scope of Work

PG-01.2 (EC) SCOPE OF WORKS – JBCC 2000 PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018)

Project title:	***Thohoyandou High court: Repair and Renovations***		
Tender / Quotation no:	*PLK23/09*	**Reference no:**	*6054/0070*

C3. Scope of Works

C3.1 EXTENT OF THE WORKS

The scope of work entails repairs and renovations (alterations) to an existing double storey building, including external works such as water reticulation, paving, elevated walkways, etc.

C3.2 ORDER OF THE WORKS

None

C3.3 BUILDINGS OCCUPIED

The building is currently occupied. Arrangements should be made with the Court Manager/court representative to allocate sections to be worked on.

C3.4 ACCESS

Contractors' workers should have name tags for identity purpose.

Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on Construction Works Contracts, Government Gazette No. 42021 of 9 November 2018.

C3.5 STANDARD MINIMUM REQUIREMENTS

In terms of section 5(2) of the Construction Industry Development Board Act, 2000 (Act no. 38 of 2000) (the Act), the Construction Industry Development Board is empowered to establish and promote best practice standards, Standard Requirements and Guidelines which includes the following but not limited to:

C3.5.1 cidb Best Practice: Green Building Certification, No. 34158 Government Gazette, 1 April 2011

C3.5.2 cidb Standard for Developing Skills through Infrastructure Contracts, No. 36760 Government Gazette, 23 August 2013

C3.5.3 cidb Standard for Indirect Targeting for Enterprise Development through Construction Works Contracts, No 36190 Government Gazette, 25 February 2013

C3.5.4 Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2017, No. 40553 Government Gazette, 20 January 2017

C3.5.5 cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts, No. 41237 Government Gazette,10 November 2017

C3.5.6 cidb Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on Construction Works Contracts, No. 41237 Government Gazette, 10 November 2017

C3.5.7 cidb Standard for Minimum Requirements for Engaging Contractors and Sub- Contractors on Construction Works Contracts, No. 42021 Government Gazette, 9 November 2018

C3.5.8 cidb Standard for Developing Skills through Infrastructure Contracts, No. 43495 Government Gazette, 3 July 2020

C3.6 CONTRACT PARTICIPATION GOALS AND CIDB BUILD PROGRAMME

The contractor shall achieve in the performance of the contract the following Contract Participation Goals (CPGs) as specified below. Provision for pricing of compliance with the achieving the CPGs is made in the Contract Participation Goal Section of the Bills of Quantities and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced thereunder and no additional claims in this regard shall be entertained:

C3.6.1 Minimum Thirty Percent (30%) Mandatory Sub-contracting Contract Participation Goal

MINIMUM THIRTY PERCENT (30%) MANDATORY SUBCONTRACTING TO SMMES: IMPLEMENTATION OF PREFERENCIAL PROCUREMENT RGULATIONS 2017

30% Mandatory subcontracting is *not applicable* to this project.

It is the requirement of the employer that the contractor enhances the use of local Small, Micro and Medium Enterprises (SMME's) in executing this contract, irrespective whether the thirty percent (30%) Participation Goal is applicable or not.

The thirty percent (30%) mandatory Sub-contracting shall be achieved in the execution of the contract in accordance with the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2017 as published in the Government Gazette Notice No. 40553 of 20 January 2017.

(a) SMME's involvement of at least **0%** of the tender amount at the time of tender to be sourced from within **0km** radius of the project site with the intention to maximize use of local SMMEs within **N/A**,
(b) SMME's involvement of at least **N/A** of the Tender Value to be sourced from within **N/A km** radius of the project site.

Bidders are cautioned not to under-price items earmarked to be executed by SMMEs as adjustment to too low rates will not be entertained by the Employer.

Bidders to sub-contract a minimum of thirty percent (30%) of the tender amount including VAT at the time of tender (All inclusive, Including VAT). to any one or more of the following categories:

a. An EME or QSE
b. An EME or QSE which is at least 51% owned by black people
c. An EME or QSE which is at least 51% owned by black people who are youth
d. An EME or QSE which is at least 51% owned by black people who are women
e. An EME or QSE which is at least 51% owned by black people with disabilities
f. An EME or QSE which is at least 51% owned by black people living in rural or underdeveloped areas or townships
g. A co-operative which is at least 51% owned by black people
h. An EME or QSE which is at least 51% owned by black people who are Military veterans
i. More than one of the categories referred to in paragraphs (a) to (h).

Bidders to refer to the CSD for a list of prospective sub-contractors provided with the tender. The bidder may to refer to the CSD website should the list provided be insufficient.

Bidders must ensure that the sub-contractors conform to the following:

a. Possess relevant accreditation where applicable;
b. Be registered with relevant bodies (CIDB, various Councils, etc.) where applicable;
c. Possess necessary capabilities to deliver the sub-contracted work;
d. Meet the requirements in terms of the stipulated designated groups; and

e. Geographical located at the place where the project will be delivered. Geographical location must be determined using the following criteria:
- Relevant Ward. If not available;
- Relevant neighbouring Wards. If not available;
- Relevant Local Municipality. If not available;
- Relevant District Municipality. If not available;
- Relevant Metro. If not available;
- Relevant Province. If not available;
- Relevant Neighbouring Province. And If not available;
- Anywhere within the borders of South Africa.

It is the bidder's responsibility to source alternative SMMEs should the parties with whom agreements were entered into at the time of tendering either no longer exist or do not perform or render work of an acceptable standard, subject to the approval by the Employer. Failure to achieve the **minimum thirty percent (30%)** SMME participation based on the tender amount including VAT, will result in N/A penalty on the amount of work on which there is no compliance (Excluding VAT), unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.2 Minimum Targeted Local Material Manufacturer Contract Participation Goal

The Minimum Targeted Local Building Material Manufacturers CPG is *applicable* to this project.

It is the requirement of the employer that the contractor enhances the use of local Small, Micro and Medium Enterprise Local Material Manufacturers (SMME's) in executing this contract, irrespective whether a minimum percentage Participation Goals is applicable or not.

The Minimum Targeted Local Manufacturers of Material Contract Participation Goal, in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020.

A Targeted Local Material Manufacturer is a targeted enterprise that operates or maintains a factory or establishment that produces on its premises materials or goods required by the principal contractor for the performance of the contract.
Note: Adapted from SANS 10845-7:2015, definition 2.13

Preference shall be given to the Targeted Local Material Manufacturer where feasible in **Vhembe District, Thohoyandou, Limpopo Province**, and provided that:

(a) Such materials comply in all respects with the specific requirements of PW371 and SANS specifications,
(b) The non-availability of such materials shall not adversely affect the desired progress of the specific works,
(c) The use of such suppliers shall not constitute grounds for any claim for increased cost in respect thereof,
(d) Materials of at least **2%, two percent** of the total value of materials purchased excluding VAT to be sourced from within **50 km** radius of the project site,
(e) Material of at least **3%, three percent** of the total value of materials purchased excluding VAT to be sourced from within **250km** radius of the project site.

Failure to achieve the minimum **five percent (5%)** Targeted Local Material Manufacturer participation expressed as a percentage of the original tender amount, excluding allowances and

VAT, will result in a **two percent (2%)** penalty of the prorate targeted value of materials not complied with unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.3 Minimum Targeted Local Building Material Suppliers Contract Participation Goal

The Minimum Targeted Local Building Material Suppliers CPG is *applicable* to this project.

It is the requirement of the employer that the contractor enhances the use of local Small, Micro and Medium Enterprise Local Material Suppliers (SMME's) in executing this contract, irrespective whether a minimum percentage Participation Goals is applicable or not.

The Minimum Targeted Local Manufacturers of Material Contract Participation Goal shall be achieved in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract..

A targeted supplier is a targeted enterprise that

a) owns, operates or maintains a store, warehouse or other establishment in which goods are bought, kept in stock and regularly sold to wholesalers, retailers or the public in the usual course of business; and
b) engages, as its principal business and in its own name, in the purchase and sale of goods.

Note: Adapted from SANS 10845-7:2015, definition 2.14

Preference shall be given to the local material suppliers where feasible in the **Vhembe District, Thohoyandou, Limpopo Province**, and provided that:

(a) Such materials comply in all respects with the specific requirements of PW371 and SANS specifications,
(b) The none availability of such materials shall not adversely affect the desired progress of the specific works,
(c) The use of such suppliers shall not constitute grounds for any claim for increased cost in respect thereof,
(d) Materials of at least **2%, two percent** of the total value of materials purchased excluding VAT to be sourced from within **50km** of the project site,
(e) Material of at least 3**%, three percent** of the total value of materials purchased excluding VAT to be sourced from within **250km** of the project site.

Failure to achieve the minimum **five percent (5%)** Targeted Local Material Manufacturer participation expressed as a percentage of the original tender amount, excluding allowances and VAT, will result in a **two percent (2%)** penalty of the prorate targeted value of materials not complied with, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.4 Minimum Targeted Local Labour Skills Development Contract Participation Goal

The Minimum Targeted Local Labour Skills Development CPG is *applicable* to this project.

It is the requirement of the employer that the contractor enhances the use of local labour in executing this contract. This is required to be done through the use of both traditional building techniques and

labour-intensive construction techniques careful and considered construction planning and implemented in the project irrespective whether a minimum percentage Participation Goal is applicable or not.

The Minimum Targeted Local Skills Development Contract Participation Goal shall be achieved in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract..

Targeted labour: individuals who:

a) are employed by the principal contractor, sub-contractor or targeted enterprises in the performance of the contract;
b) are defined as the target group in the targeting data; and
c) permanently reside in the target area or who are recognized as being residents of the target area on the basis of identification and association with and recognition by the residents of the target area.

Adapted from SANS 10845-7:2015, definition 2.12

Targeting of labour by skills categories is only permissible within categories of semi-skilled and unskilled labour.

Contract participation goals for semi-skilled and unskilled labour shall be limited to on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract and in a manner that does not compromise worker health and safety. In the case of targeted labour, the certification of records shall be in accordance with SANS 10845-8.

Beneficiaries will be sourced from the **Vhembe district municipality, Thohoyandou, Limpopo Provence** for the full duration of the Construction Period, employed by either the principal contractor, sub-contractors or targeted enterprises. The total number of working days to complete the Works amount to **360** working days. The minimum CPG participation for Targeted Local Labour Skills Development is **five percent (5%)**, expressed as a percentage of the total number of working days required to complete the Works. The contractor shall attain or exceed the CPG in the performance of the contract. Failure to achieve the minimum Targeted Local Labour Skills Development CPG will result in a payment reduction of **R5 000** (Excluding VAT), per working day which training has not been provided to the workforce in attendance, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.5 CIDB BUILD PROGRAMME: Minimum Targeted Enterprise Development Contract Participation Goal

The Minimum Targeted Enterprise Development Contract Participation Goal is *applicable* to this project.

The aim of this best practice standard for indirect targeting for enterprise development in accordance with the Standard for Indirect Targeting for Enterprise Development (published in Government Gazette 36190 of 25 February 2013), as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract. is to promote enterprise development by providing for a minimum contract participation goal (CPG) of **five percent (5%)** of the contract amount as defined in the Standard (Tender amount, excluding allowances and VAT on selected contracts to be undertaken by joint-venture partners or to be sub-contracted to developing contractors that are also to be beneficiaries of enterprise development support from the main contractor.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

The lead partner or main contractor shall dedicate a **minimum five percent (5%)** of the tender value at the time of award, excluding allowances and VAT, to provide developmental support to targeted subcontractor or joint venture partner applicable to contracts in Grades 7 to 9, General Building and Civil Engineering contracts. Preference will be given to General Building Enterprises.

The contractor shall attain or exceed the enterprise development goal in the performance of the contract. Failing to achieve the Participation Goal will result in A) a thirty percent (30%) penalty of the value not achieved, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

C3.6.5.1 Criteria

The main or lead partner of the successful bidder shall:

(a) There must be a needs analysis for indirect targeting and development or skill standard and should be development in at least any two developmental areas namely;

- Administrative and cost control systems
- construction management systems and plans
- planning, tendering and programming
- business; technical; procurement skills
- legal compliance
- credit rating/history; financial loan capacity/history
- contractual knowledge

(b) The above needs analysis shall be mutually agreed upon between contractor and targeted enterprise

(c) The contractor shall appoint an enterprise development coordinator to:

- perform needs analysis on the targeted enterprise to identify developmental goals
- develop a project specific enterprise development plan to improve the targeted enterprise/s performance in the identified developmental areas
- provide internal mentorship support to improve the targeted enterprise/s performance
- monitor and submit to the employer's representative a monthly enterprise development report thereby reporting on the progress of the agreed development areas with the targeted enterprise/s
- submit a project completion report to the Employer's representative for each targeted enterprise.

C3.6.5.2 Management

The contractor shall provide a competent person/s to provide internal mentorship to the Targeted Enterprise/s in the two agreed developmental areas.

C3.6.5.3 Competence Criteria for an Enterprise Development Co-ordinator

The enterprise development co-ordinator shall have the following competencies:

- Minimum experience of 5 years in the construction industry at Managerial level as a Site Agent, Contracts Manager, Site Manager, Construction Manager, Business Development Manager or Enterprise Development Manager.

- Minimum experience of 2 years in training and development in Building or Construction; and
- National Diploma or B Degree in the Built Environment or Business Management

C3.6.5.4 Format of Communications

The contractor shall submit to the Employer's Representative:

- *Project interim reports* in the specified format **(ED105P)** detailing interim values of the CPG that was achieved together with an assessment of the enterprise development support provided should be tabled and discussed at least monthly at progress meetings between employer's representative and the contractor;
- *Project completion report* in the specified format **(ED101P)** to the Employer's Representative for acceptance within 15 days of achieving practical completion. The report shall include the value of the CPG that was certified in accordance with the contract, cidb registration numbers of each and every targeted enterprise, and the value of the subcontracted works or of the joint venture entered into; and the participation parameter
- *Enterprise development declaration (**ED104P**).*

C3.6.5.5 The Key Personal

The contractor shall appoint an Enterprise Development Co-ordinator and a competent person/s to provide internal mentorship.

C3.6.5.6 Management Meetings

The contractor shall report to the Employer's Representative on the implementation and progress of the targeted enterprise development and CPG at monthly progress site meetings.

C3.6.5.7 Forms for contract administration

The contractor shall submit to the Employer's Representative the following proformas:

- Form ED 105P Project Interim Report
- Form ED 104P Enterprise Development Declaration
- Form ED 101P Project Completion Report

C3.6.5.8 Records

The contractor shall:

- keep records of the targeted enterprise development
- keep records of the payments made to the targeted enterprises in relation to the CPG.
- ensure all the documentation required in terms of the Standard is provided with each monthly progress payment certificate and according to a prescribed format where applicable.

C3.6.5.9 Payment Certificates

The contractor shall:

- achieve the measurable CPG and providing enterprise development support to the targeted enterprise/s as per the Standard.

- submit payment certificates to the Employer Representative at intervals determined in the Contract.

C3.6.5.10 Compliance requirements

Non-compliance with the Best Practice Project Assessment Scheme

The wording of regulation 27A of the cidb regulations makes provision for the Board to enforce the cidb code of conduct in the event of clients being found to be in breach of the best practice project assessment scheme.

- Not including the requirements of the cidb standards in the conditions of tender
- Not registering the award of contract on the cidb Register of Projects (RoP)
- Not reporting practical completion on the cidb Register of Projects (RoP)

3.6.6 **CIDB BUILD PROGRAMME: Minimum Targeted Contract Skills Development Goal (CSDG)**

The Minimum Targeted Contract Skills Development CPG is *applicable* to this project.

The contractor shall achieve or exceed in the performance of the contract the Contract Skills Development Goal (CSDG) established in the Standard for Developing Skills through Infrastructure Contracts (published in Government Gazette No 43495 of 3 July 2020, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.

Failing to achieve the targeted Contract Skills Development Goal will result in A) a thirty percent (30%) penalty of the value of the portion not achieved, excluding VAT, and B) the issuing of completion certificates only after the completion certificate of achieving the skills development goal, counter-signed by the relevant individuals has been submitted, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The contractor shall apportion the learners in the different construction activities based on the scope of work. The cost of accommodating learners will be determined by using Table 3 in the Standard and this cost will be used to determine the value in Rand and will be added to the provision for training as provided for in the Preliminary and General section in the Bill of Quantities/Pricing schedules/Activity schedule.

C3.6.6.1 Methodology

The contractor shall achieve the measurable contract skills development goal by providing opportunities to learners requiring structured workplace learning using one or a combination of any of the following in relation to work directly related to the contract or order:

Method 1: structured workplace learning opportunities for learners towards the attainment of a part or a full occupational qualification;

Method 2: structured workplace learning opportunities for apprentices or other artisan learners towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least sixty percent (60%) of the artisan learners being holders of public TVET college qualifications;

Method 3: work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas;

Method 4: structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 above.

The contract skills participation goals, expressed in Rand, shall not be less than the contract amount multiplied by a percentage (%) factor given in Table 2 in the Standard for the applicable class of construction works.

Table 2: Contracting skills development goals for different classes of engineering and construction works contracts

Class of construction works as identified in terms of Regulation 25 (3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)
Designation	**Description**	
CE	Civil Engineering	0.25
CE and GB	Civil engineering and General Building	0.375
EE	Electrical Engineering works (buildings)	0.25
EP	Electrical Engineering works (infrastructure)	0.25
GB	General Building	0.5
ME	Mechanical Engineering works	0.25
SB	Specialist	0.25

The contractor shall apportion the learners in the different construction activities based on the scope of work. The cost of accommodating learners will be determined by using Table 3 in the Standard and this cost will be used to determine the value in Rand and will be added to the provision for training as provided for in the Preliminary and General section in the Bill of Quantities/Pricing schedules/Activity schedule.

Table 3: Notional Cost of Training per Headcount
Source: cidb Standard for Skills Development

Type of Training Opportunity	Provision for stipends (Unemployed learners only)	Provisions for mentorship	Provisions for additional costs*	Total costs	
				Unemployed learners	Employed learners
Method 1					
Occupational qualification	**R7 000**	**R0**	**R9 000**	**R16 000**	**R9 000**
Method 2					
TVET College graduates	**R14 000**	**R0**	**R9 000**	**R23 000**	**N/A**
Apprenticeship	**R14 000**	**R0**	**R12 000**	**R26 000**	**R12 000**
Method 3					
P1 and P2 learners	**R24 000**	**R20 000**	**R4 500**	**R48 500**	**N/A**
Method 4					
Candidates with a 3 year diploma	**R37 000**	**R20 000**	**R4 500**	**R61 500**	**R20 000**
Candidates with 4 year qualification	**R47 000**	**R20 000**	**R4 500**	**R71 500**	**R20 000**

Note: the required CPG will be recalculated based on the awarded tender amount and "Contract amount" once the beneficiaries have been appointed and actual costs are known. The notional cost of providing training opportunities will increase by CPI on an annual basis based on April CPI. Should the rates increase after bid award or during construction the rates will be adjusted as a remeasuarble item.

(a) The successful contractor may employ part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates directly or through a Skills Development Agency (SDA), (A1 - List of cidb accredited SDAs).

(b) The successful contractor must employ at least sixty percent (60%) of the learners from an FET / TVET college should the contractor select to have part/full occupational qualification learners and trade qualification learners contributing to the CSDG.

(c) The successful contractor shall employ at least **fifty percent (50%)** from eligible part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates in the employment of the employer.

(d) The successful contractor shall ensure that no single method shall contribute more than seventy five percent (75%) of the CSDG for the contract.

(e) The successful contractor may only place thirty three percent (33%) employed employees or that of his subcontractors contributing to the CSDG.

(f) The contractor shall employ at least sixty percent (60%) of the learners from a Public FET / TVET college should the contractor select to have trade qualification learners (Method 2) contributing to the CSDG.

(g) One of the objectives of the project is to train **ten (10)**, work integrated learners.

C3.6.6.2 Management

(a) The successful contractor must keep site records regarding the part/full occupational qualification learners', trade qualification learners', work integrated learners' or candidates' progress, site attendance, hours worked and other relevant information as required by the Standard.

(b) The successful contractor shall provide the required number of appropriately qualified mentors to the maximum number of part/full occupational qualification learners, trade qualification learners, work integrated learners in the proportion as specified in the Standard.

(c) The successful contractor shall provide a supervisor to manage the training of the part/full occupational qualification learners, trade qualification learners, work integrated learners, candidates.

(d) The successful contractor shall submit to the employer's representative a baseline training plan in the specified format (Pro-forma A2) for the part/full occupational qualification learners, trade qualification learners, work integrated learners, candidates within 30 days of start of the contract.

(e) The successful contractor shall submit to the employer's representative project interim report in the specified format (Pro-forma A3) on the progress of each of part/full occupational qualification learner, trade qualification learner, work integrated learner, candidate every three months.

(f) The successful contractor shall submit to the employer's representative the names and particulars in the specified format (Pro-forma A4) of the supervisor, mentors for the part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates within 30 days of start of the contract.

(g) The successful contractor shall keep a daily record of all the part/full occupational qualification learners, trade qualification learners, work integrated learners, candidates on site and their daily activities and shall be made available to the employer's representative on request.

(h) The successful contractor shall submit to the employer's representative the reports on the progress and status of the part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates with the monthly invoice for the payment certificate.

(i) The successful contractor shall have health and safety inductions for all part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates.

(j) The successful contractor shall conduct entry and exit medical tests of all part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates.

(k) The successful contractor shall provide personal protective equipment (PPE) to all part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates at the start of their employment on site.

(l) Based on the agreed skills methods the contractor may employ part/full Occupational Qualification Learners and /or Trade Qualification Learners and/or Work Integrated Learners and/or Candidates directly or through a Skills Development Agency (SDA), training provider or skills development facilitator (Form A1 - List of cidb accredited SDAs). The contractor shall ensure that no more than one Method shall be applied to any individual concurrently in the calculation of the CSDG for the contract.

C3.6.7 NATIONAL YOUTH SERVICE TRAINING AND DEVELOPMENT PROGRAMME (NYS)

The National Youth Service Training and Development Programme is *applicable* to this project.

The programme shall be implemented in terms of the Implementation of the National Youth Service Programme under the Expanded Public Works (EPWP) and shall be priced in the CPG section of the Bills of Quantities. Monthly reports are to be submitted to the Employer's Representative.

Failure by the contractors to achieve the specified number to be trained in the NYS section of the CPG section within the Bills of quantities will result in a Payment reduction as per bill of quantities per person, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

C3.6.8 LABOUR-INTENSIVE WORKS

Labour Intensive Works is not *applicable* to this project.

Where labour intensive work is specified in the Bill of Qualities and specified by "LI" the contractor must price for and include in rates. Contractors are expected to use their initiative to identify additional activities that can be done labour-intensively to comply with the set minimum labour intensity target. Allowance must be made for submitting monthly reports illustrating the value of the works executed under Labour Intensive Works.

Failure by the contractor to achieve the specified value of the Labour Intensive Participation Goal as stipulated within the Bills of quantities will result in a **thirty percent (30%)** penalty of the value of the works not done by means of labour intensive methods, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

Employer's objectives:
The employer's objectives are to deliver public infrastructure using labour-intensive methods in accordance with EPWP Guidelines.

Labour-intensive works:
Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work.

Labour-intensive competencies of supervisory and management staff:
Contractors shall only engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/ Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/ Manager at NQF level 5

"Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (See Appendix C) at NQF outlined in Table 1

C3.6.8.1 GENERIC LABOUR-INTENSIVE SPECIFICATION

Contractors are referred to the Guidelines for the Implementation of Labour-intensive Infrastructure Projects under the Expanded Publics Works Programme (EPWP) for the generic labour-intensive specification applicable to the contract.

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- trenches having a depth of less than 1.5 metres
- stormwater drainage
- roads
- sidewalks and non-motorised transport infrastructure
- water and sanitation

Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail

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Hand excavateable material

Hand excavateable material is:

a) granular materials:

i) whose consistency when profiled may in terms of table 2 be classified as very loose, loose, medium dense, or dense; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) cohesive materials:

i) whose consistency when profiled may in terms of table 2 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note

1) A boulder is material with a particle size greater than 200mm, a cobble and gravel is material between 60 and 200mm.

2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 2: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	**DESCRIPTION**	**CONSISTENCY**	**DESCRIPTION**
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.

Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of a geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

Trench excavation
All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

Compaction of backfilling to trenches (areas not subject to traffic)
Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers;
a) to 90% Mod AASHTO;
b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or
c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

Excavation
All excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand. Any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

Clearing and grubbing
Grass and bushes shall be cleared by hand.

Shaping
All shaping shall be undertaken by hand.

Loading
All loading shall be done by hand. Haulage equipment should be selected in a manner that allows loading by hand to the greatest extent possible.

Haul
Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Offloading
All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

Spreading
All material shall be spread by hand.

Compaction
Small areas may be compacted by hand provided that the specified compaction is achieved. Appropriate rollers should be used where higher (than can be achieved by hand) levels of compaction are required or for large areas.

Grassing
All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry
All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must to be collected, loaded, off loaded and placed by hand.
Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.
Grout shall be mixed and placed by hand.

Manufactured Elements
Elements manufactured or supplied by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. Where the mass of an element exceeds 55 kg, consideration should be given to the size of the element relative to its total mass related to the number of workers who would be needed to lift such mass

C3.7 Submission of Accrual Reports

The Contractor shall submit accrual reports to the client representative at the end of March and September each year for the duration of the Service Contract period from the date of appointment up to and including project closeout. This is to ensure that PMTE complies with the accounting framework GRAP, which requires that PMTE disclose all its accruals as at the end of each reporting date.

C3.8 Submission of Monthly Local Material Utilisation Report (Local Content)

The contractors shall be responsible for record keeping, documenting and submission of monthly local material utilization report with supporting documentation to the Employer's representative within 7 working days of the beginning of the successive month, in terms of DTI&C designated industry/sector/sub-sector schedule as per the PA36 and Annexures C attached to the tender document. The final percentage achievement to be reconciled upon completion of the project and form part of the final account. Failure by the contractors to achieve the specified percentage of local content per designated industry/sector/sub-sector as listed will result in a thirty percent thirty percent (30%) penalty of the value not achieved, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

Examples of calculating CPGs and related penalties

CPGs values are based on the Tender Amount at the time of the award. Determining the actual values is based either on the Tender Amount including allowances and Vat or the Tender Amount at the time of award excluding allowances and VAT, where Allowances include the following:

- Provisional amounts
- CPG allowances
- Nominated and/or selected subcontractors
- Contract price adjustment (Not provided for within the B of Q by NDPWI)
- Contingency amounts (Not provided for within the B of Q by NDPWI)

CPG values in the CPG Bill of Quantities Section will be recalculated based on the "Tender Amount" or the "Contract Amount" which ever applicable and the provisional amounts adjusted accordingly. Sanctions (penalties) are applicable to all CPGs where the contractor fails to achieve the minimum specified requirements, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control. No penalties will be applied should the CPG value, based on the original "Tender Amount" or the "Contract Amount", has been achieved.

1.1. 30% SMME mandatory subcontracting CPG

When applicable, a minimum of 30% of the total tender amount at the time of award, including all allowances and VAT are to be subcontracted to SMMEs.

CPG calculation example:
"Tender Amount" = R150 mil
CPG 30% subcontracting value = R45 Mil

Calculation of penalty:
Percentage penalty applicable = 5% as specified in the Scope of Works (PG01.2)
CPG Achieved = R30 Mil (R15 Mil shortfall)
Penalty = R15 Mil x 5% = R750 000 Excl. VAT

1.2 Targeted Local Building Material Manufacturers CPG

When applicable, the CPG is expressed as a percentage of the "Contract Amount", i.e. the Tender Amount at the time of award excluding allowances and VAT.

CPG calculation example:
"Tender Amount" = R150 Mil all inclusive of allowances and VAT
"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)
CPG to be achieved = 5% as specified in the Scope of Works (PG01.2)
CPG target value = R130 Mil x 5% = R 6,5 Mil (Value of material to be purchased from local manufacturers, excluding VAT)

Calculation of penalty:
Percentage penalty applicable = 10% as specified in the Scope of Works (PG01.2)
CPG target value = R6,5 Mil excluding VAT
CPG Achieved = R5,5 Mil (R1 Mil shortfall) excluding VAT
Penalty = R1 Mil x 10% = R100 000 excluding VAT

1.3 Targeted Local Building Material Suppliers CPG

When applicable, the CPG is expressed as a percentage of the "Contract Amount", i.e. the Tender Amount at the time of award excluding allowances and VAT.

CPG calculation example:
"Tender Amount" = R150 Mil all inclusive of allowances and VAT
"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)

CPG to be achieved = 5% as specified in the Scope of Works (PG01.2)
CPG target value = R130 Mil x 5% = R 6,5 Mil (Value of material to be purchased from local suppliers, excluding VAT)

Calculation of penalty:
Percentage penalty applicable = 20% as specified in the Scope of Works (PG01.2)
CPG target value = R6,5 Mil excluding VAT
CPG Achieved = R5,5 Mil (R1 Mil shortfall) excluding VAT
Penalty = R1 Mil x 20% = R200 000 excluding VAT

1.4 Targeted Local Labour Skills Development CPG

When applicable, the CPG is expressed as a percentage of the total number working days required to complete the Works.

CPG calculation example:
"Tender Amount" = R150 Mil all inclusive of allowances and VAT
"Contract amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)
Number of working days required to complete the Works based on the construction period = 600 days
CPG percentage participation to be achieved = 30% as specified in the Scope of Works (PG01.2)
Required number of working days training to be provided = 180 days (600 x 30%)

Calculation of penalty:
Payment reduction = R 5 000 per day for not providing training as specified in the Scope of Works (PG01.2)
CPG = 600 working days x 30% = 180 working days training to be provided
CPG Achieved = 160 days (20 days shortfall where no training was provided)
Penalty = 20 days x R5 000 payment reduction per day= R100 000 excluding VAT

1.5 National Youth Service Programme (NYS) CPG

When applicable, a separate NYS Bill of Quantities will be included in the tender documentation will indicate the number of beneficiaries to be trained.

Calculation of penalty:
Payment reduction per person not trained as stipulated in the NYS Bill of Quantities = R 2 500 per person.
Total number of NYS Beneficiaries as stipulated in the NYS Bill of Quantities = 25
Total Number of NYS beneficiaries trained = 20 (shortfall of 5 beneficiaries)
Penalty = 5 x R2 500 = R12 500 Excl. VAT

1.6 Labour Intensive Works CPG

When applicable, the work to be done by way of Labour intensive methods are specified in the Bills of Quantities with a "LI".

CPG calculation example:
"Tender Amount" = R150 Mil all inclusive of allowances and VAT
"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)
CPG value = R10 Mil (Total value of labour-intensive works specified in the Bills of Quantities)

Calculation of penalty:
CPG value = R10 Mil
Percentage penalty applicable = 30% as specified in the Scope of Works (PG01.2)
CPG Achieved = 9 Mil (R1 Mil shortfall)
Penalty = R1 Mil x 30% = R300 000 Excl. VAT

1.7 Cidb BUILD Programme: Enterprise Development

When applicable, the Enterprise Development CPG expressed as a percentage of the "Contract amount" =

Tender amount at the time of award excluding allowances and VAT. Failure to achieve the minimum Targeted Local Labour Skills Development CPG will result in a payment reduction of an amount specified in the Scope of Works (PG01.2) per working day where training was not provided.

The monetary value of training to be provided is stipulated in the CPG BoQ section. The number of beneficiaries to be trained is dependent on the "Contract Amount" as well the number of beneficiaries appointed which will generally resort under the Grade 1 and 2 cidb categories. The provisional amount will therefore be adjusted in terms of the "contract Amount", the number of beneficiaries to be trained and the actual cost for providing the training.

Part 1: Calculation of 5% CPG example:
"Tender Amount" = R150 Mil all inclusive of allowances and VAT
"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)
CPG percentage participation to be achieved = 5% as specified in the Scope of Works (PG01.2) CPG value = R6,5 Mil (Value of work to be subcontracted to emerging enterprises)

Calculation of penalty
Percentage penalty applicable = 30% as specified in the Scope of Works (PG01.2)
CPG Minimum 5% = R6,5 Mil
Achieved = R5,5 Mil (Only subcontracted work to the value of R5,5 Mil, i.e. R1 Mil shortfall)
Penalty = R1 Mil x 30% = R300 000 Excl. VAT

Part 2: Calculations in terms of training to be done:
The number of enterprises to be developed is subject to the contract amount and the apportionment of the work as per Example 1 below.
Number of enterprises to be trained = 6 x 1 GB subcontractors
Total cost for training = R 1 660 000

Calculation of penalty
Total number of enterprises to be trained = 6
Total number trained = 4 (2 Shortfall)
Training cost per beneficiary = R1 660 000 / 6 = R 276 666,67 per beneficiary
Penalty = R 276 666,67 x 2 x 30% = R166 000 Excl. VAT

B of Q Item	Description	Unit	Rate	Quantity	Amount (R)
5	**Enterprise Development**				
5.1	Enterprise Development of Targeted Enterprise or JV partners				
5.1.1	Appointment of training co-ordinator	Per Quarter	45 000	8	360 000
5.1.2	Appointment of Mentor /Training Service provider	Per Quarter	135 000	8	1 080 000
5.1.3	Needs Analysis and Enterprise Development Plan per Targeted Enterprise	No.	5 000	6	30 000
5.1.4	Monitoring and Interim reporting per targeted enterprise	Per Quarter	20 000	8	160 000
5.1.5	Project Completion report per Targeted Enterprise	No.	5 000	6	30 000
	Provisional Sum to be carried over to CPG bill of quantities				**1 660 000**
	"Contract amount" Tender amount excl. allowances and VAT.	130 000 000			
	CPG Monetary value (5%) to be subcontracted to beneficiaries for training	6 500 000			
	No of enterprises based on the CPG value	6	Grade 1 / 2 GB/CE,ETC.		
	Contract period (months)	24			

Note: Rates to be determined by PQS and adjusted to accepted quotation amounts

1.8 Cidb BUILD Programme: Skills Development (Principal contractor including subcontractors and consultants)

When applicable, the contract skills development participation goals, expressed in Rand, shall be no less than the "contract amount" multiplied by a percentage (%) factor for the applicable class of construction works.

The monetary value of training to be provided is stipulated in the CPG BoQ section. The number of beneficiaries to be trained is dependent on the "Contract Amount" as well the number of beneficiaries appointed which will generally resort under the Grade 1 and 2 cidb categories. The provisional amount will therefore be adjusted in terms of the "Contract Amount", the number of beneficiaries to be trained from which *Method* and the actual cost for providing the training.

CPG Calculation

Table 2: Contracting skills development goals for different classes of engineering and construction works contracts

Source: cidb Standard for Developing Skills through Infrastructure Contracts as published in the Government Gazette Notice No. 43495 of 3 July 2020 (Page 7)

Class of construction works as identified in terms of Regulation 25 (3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)
Designation	Description	
CE	Civil Engineering	0.25
CE and GB	Civil engineering and General Building	0.375
EE	Electrical Engineering works (buildings)	0.25
EP	Electrical Engineering works (infrastructure)	0.25
GB	General Building	0.5
ME	Mechanical Engineering works	0.25
SB	Specialist	0.25

"Contract amount" = Tender amount at the time of award excluding allowances and expenses, and VAT

Contractor CPG:

CPG calculation
"Contract amount" x factor from Table 3 above.

CPG calculation example:
"Tender Amount" = R150 Mil for GB, all inclusive of allowances and VAT
"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)
Factor for GB = 0,5% (as per Table 2 above)
CPG in R value = R130 Mil x 0,5% = R650 000 i.e. total cost of training to amount to R650 000

Calculation of penalty:
Percentage penalty applicable = 30% as specified in the Scope of Works (PG01.2)
CPG value = R650 000
Achieved = R550 000 = R100 000 Shortfall
Penalty = R100 000 x 30% = R30 000 Excl. VAT

Calculations based on "Contract Amount" after b5d award and after bid award and appointment of beneficiaries

Actual CPG training requirement value after award upon selecting method/s of training and appointment of beneficiaries = R676 000 (Table 4 below) and the provisional amount allowed for to be adjusted accordingly. The new monetary value of training required will then form the basis for determining penalties applicable. No penalties will be applied should the CPG value, based on the "Contract Amount" be achieved.

Table 4: Notional cost recalculation upon appointment of beneficiaries.

Source: cidb Standard for Developing Skills through Infrastructure Contracts as published in the Government Gazette Notice No. 43495 of 3 July 2020 (Page 10)

Skills Types	Number of learners	Notional Cost / Learner / Quarter	Notional cost / learner / year	Total Notional Cost over 12 months Contract
Method 2: Workplace learning opportunities, with unemployed TVET graduates	2	R23 000	R92 000	R184 000
Method 3: Candidacy for an unemployed learner with a 3-year qualification	2	R61 500	R246 000	R492 000

Total	4			R676 000

Note: the required CPG will be recalculated based on the awarded Tender amount and "Contract Amount" once the beneficiaries have been appointed and actual costs are known

Note: The notional cost of providing training opportunities will increase by CPI on an annual basis based on April CPI as published by Stats SA. The rates will be adjusted as an adjustment to the provisional amounts should the rates increase after bid award or during the construction period

HIV/AIDS Specification and Schedules

PW 1544

DEPARTMENT OF PUBLIC WORKS

HIV/AIDS

SPECIFICATION

OCTOBER 2004

SECTION

HIV/AIDS SPECIFICATION

HIV/AIDS REQUIREMENTS

1 SCOPE

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

- Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers;

- Informing Workers of their rights with regard to HIV/AIDS in the workplace;

- Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices.

2 DEFINITIONS AND ABBREVIATIONS

2.1 Definitions

Service Provider: The natural or juristic person recognised and approved by the Department of Public Works as a specialist in conducting HIV/AIDS awareness programmes.

Service Provider Workshop Plan: A plan outlining the content, process and schedule of the training and education workshops, presented by a Service Provider which has been approved by the Representative/Agent.

Worker: Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in all.

2.2 Abbreviations

HIV : Human Immunodeficiency Virus.

AIDS : Acquired Immune Deficiency Syndrome.

STI : Sexually Transmitted Infection.

3 BASIC METHOD REQUIREMENT

3.1 The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.

The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regard to HIV/AIDS awareness.

The Service Provider Workshop Plan shall be based on the following information provided by the Contractor:

- Number of Workers and Sub-contractors on site;
- When new Workers or Sub-contractors will join the construction project;
- Duration of Workers and Sub-contractors on site;
- How the maximum number of Workers can be targeted with workshops;
- How the Contractor prefers workshops to be scheduled, e.g. three hourly sessions per Worker, or one 2.5 hour workshop per Worker;
- Profile of Workers, including educational level, age and gender (if available);
- Preferred time of day or month to conduct workshops;
- A Gantt chart reflecting the construction programme, for scheduling of workshops;
- Suitable venues for workshops.

The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the tender acceptance date. After approval by the Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training.

3.2 The Service Provider Workshop Plan shall address, but will not be limited to the following:

3.2.1 The nature of the disease;
3.2.2 How it is transmitted;
3.2.3 Safe sexual behaviour;
3.2.4 Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
3.2.5 Attitudes towards other people with HIV/AIDS;
3.2.6 Rights of the Worker in the workplace;
3.2.7 How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;
3.2.8 How the Service Provider will support the Awareness Champion;
3.2.9 Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
3.2.10 How the workshops will be presented, including frequency and duration;
3.2.11 How the workshops will fit in with the construction programme;
3.2.12 How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
3.2.13 How the video will be used;
3.2.14 How the Service Provider will elicit maximum participation from the Workers;
3.2.15 A questions and answers slot (interactive session).

The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated.

4 HIV/ AIDS AWARENESS EDUCATION AND TRAINING

4.1 Workshops

The Contractor shall ensure that all Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. A video of HIV/AIDS in the construction industry, which can be obtained from all Regional Offices of the Department of Public Works, is to be screened to Workers at workshops. In order to enhance the

learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

4.2 Recommended practice

4.2.1 Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan.

Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a following session.

4.2.2 Service Providers

A database of recommended Service Providers is available from all Regional Offices of the Department of Public Works.

4.2.3 HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met.

4.2.3.1 UNIT 1: The nature of HIV/AIDS

After studying and understanding this unit, the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:
1. Define and describe HIV and AIDS;
2. List and describe the progression of HIV/AIDS.

4.2.3.2 UNIT 2: Transmission of the HI virus

After studying and understanding this unit, the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:
1. Record in what bodily fluids the HI virus can be found;
2. Describe how HIV/AIDS can be transmitted;
3. Demonstrate the ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS.

4.2.3.3 UNIT 3: HIV/AIDS preventative measures

After studying and understanding this unit, the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HI virus from entering the bloodstream.

Assessment Criteria:
1. Report on how to minimise the risk of HIV/AIDS infection;
2. Report on precautions that can be taken to prevent HIV/AIDS infection;
3. Explain or demonstrate how to use a male and female condom;
4. List the factors that could jeopardize the safety of condoms provided against HIV/AIDS Transmission.

4.2.3.4 UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit, the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counseling.

Assessment Criteria:
1. Describe methods of testing for HIV/AIDS infection;
2. Report on why voluntary testing is important;
3. Report on why pre- and post-test counselling is important.

4.2.3.5 UNIT 5: Living with HIV/AIDS

After studying and understanding this unit, the Worker will be able to recognise the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS.

Assessment Criteria:
1. List and describe ways to manage HIV/AIDS;
2. Describe nutritional needs of people living with HIV/AIDS;
3. Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS;
4. Explain the need for counselling and support to people living with HIV/AIDS.

4.2.3.6 UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit, the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people.

Assessment Criteria:
1. Discuss anti-retroviral therapy;
2. List methods of treatment to prevent HIV/AIDS transmission from mother-to-child;
3. Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS;
4. Describe post exposure prophylactics.

4.2.3.7 UNIT 7: The rights and responsibilities of Workers in the workplace with regard to HIV/AIDS

After studying and understanding this unit, the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non-discriminative way.

Assessment Criteria:
1. Discuss the rights of a person living with HIV/AIDS in the workplace;
2. Discuss the responsibilities of a person living with HIV/AIDS in the workplace;
3. Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important.

4.3 Displaying of plastic laminated posters and distribution of information booklets

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets. The contractor should include the costs of posters and information booklets in his/her tender price.

The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's.

Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover.

Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds.

The posters on display must always be intact, clear and readable.

Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site.

5 PROVIDING WORKERS WITH ACCESS TO CONDOMS

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SABS ISO 4074, available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the Department of Health.

At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover.

Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.

6 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

7 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

7.1 Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.

7.2 The Awareness Champion shall be responsible for:

7.2.1 Liasing with the Service Provider on organising awareness workshops;
7.2.2 Filling condom dispensers and monitoring condom distribution;
7.2.3 Handing out information booklets;
7.2.4 Placing and maintaining posters.

8 MONITORING

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract.

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent.

The attached SITE CHECKLIST (SCHEDULE A) shall be completed and submitted at every construction progress inspection to the Representative/Agent.

The attached SERVICE PROVIDER REPORT (SCHEDULE B) shall be completed and submitted on a monthly basis to the Department's Project Manager, through the Representative/Agent.

The attached CONTRACTOR HIV/AIDS PROGRAMME REPORT (SCHEDULE C), a close out programme report, shall be completed by the Contractor at the end of the contract.

SCHEDULE A

HIV/AIDS PROGRAMME: SITE CHECKLIST

When did construction commence: _____

Name of Departmental Project Manager: _____

Please refer to HIV/AIDS Programme activities during the reporting period

Tick the block if Contractor satisfactorily complied with specifications																															
DATE	**PI**				**PI**				**PI**				**PI**				**PI**				**PI**				**PI**				**PI**			
	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M
Programme implemented within 14 days of site handover																															
Awareness champion on site																															
HIV/AIDS awareness service provider report																															
Male condom dispenser																															
Sufficient male condoms available																															
Male condom dispenser in a highly trafficked area																															
Female condom dispenser																															
Sufficient female condoms available																															
Female condom dispenser in a highly trafficked area																															
All four types of posters displayed																															
Posters in a good condition																															
Posters in a highly trafficked area																															
Posters displayed on local support services: clinic & VCT centre																															
Support service poster/s in highly trafficked area																															
Support service poster/s in a good condition																															

Please indicate the applicable number for the reporting period							
Workers on payroll (at PI)							
Sub-Contractors who will be on site for longer than 30 days (at PI)							
Workshop attendees							
Number of workshops held							
Scheduled workshops according to approved workshop plan							
Booklets distributed							
Male condoms distributed							
Female condoms distributed							

Representative/Agent

Date

Contractor

Date

Date of progress inspection: (ccyy/mm/dd)

Reporting period: (ccyy/mm/dd) _____ to (ccyy/mm/dd) _____

Deviations from HIV/AIDS awareness programme plan:

Corrective actions:

Representative/Agent	Departmental Project Manager
Date	Date

SCHEDULE B

HIV/AIDS AWARENESS PROGRAMME: SERVICE PROVIDER REPORT

Reporting period: (ccyy/mm/dd) _____ to (ccyy/mm/dd) _____

Number of workshops conducted in reporting period: _____

Number of scheduled workshops according to approved workshop plan: _____

Deviations from workshop plan:

State reasons for deviating from workshop plan:

Corrective actions:

_____ _____

Service Provider

_____ _____

Date Date

HIV/AIDS AWARENESS PROGRAMME : WORKSHOP CONTENT ADDRESSED

Fill in the applicable information with regard to each workshop conducted																												
DATE	**W/S**				**W/S**				**W/S**				**W/S**				**W/S**				**W/S**				**W/S**			
	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M
Content of workshop: (Mark the content included)																												
SLO1																												
SLO2																												
SLO3																												
SLO4																												
SLO5																												
SLO6																												
SLO7																												
HIV/AIDS in construction video																												
Indicate the duration of the workshop in hours																												
Total number of Workers																												
Indicate workshop venue																												

HIV/AIDS AWARENESS PROGRAMME: ATTENDANCE REGISTER

Fill in your name and indicate attendance by ticking the appropriate date

DATE		W/S				W/S				W/S				W/S				W/S				W/S				W/S			
		D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M
No	**NAMES**																												

SCHEDULE C

CONTRACTOR HIV/AIDS PROGRAMME REPORT

Project name: _____

Project Location: _____

Contract value of project: R_____

Department of Public Works Project Manager: _____

HIV/AIDS Programme duration: (ccyy/mm/dd) _____ to (ccyy/mm/dd) _____

AWARENESS MATERIAL

Describe location of posters displayed during the programme: _____

_____

Comments on posters: _____

Indicate total number of booklets distributed: _____

Comments on booklets: _____

_____

CONDOMS

Indicate total number of male condoms distributed: _____

Indicate total number of female condoms distributed: _____

Describe where male condom dispenser was placed: _____

Describe where female condom dispenser was placed: _____

HIV/AIDS WORKSHOPS

Indicate the total number of HIV/AIDS workshops conducted: _____

Indicate the duration of workshops: _____

Indicate the total number of Workers that participated in the HIV/AIDS workshops: _____

Indicate the total number of Workers that were exposed to the video on HIV/AIDS in the Construction Industry:

_____

Comments on HIV/AIDS workshops on site: _____

_____

GENERAL

Briefly describe programme activities and satisfaction with outcome: _____

_____

_____

Additional comments, suggestions or needs with regard to the HIV/AIDS awareness programmes on site:

_____

_____

_____

Please indicate if your company has a formal HIV/AIDS policy focussing on HIV/AIDS awareness raising and care and support of HIV/AIDS Workers:	Yes	No	Currently developing one

Please indicate if, to your knowledge, you have lost any workers during the duration of the project to HIV/AIDS related sicknesses. One or more of the following might indicate an HIV/AIDS related death:

Excessive weight loss	Coughing or chest pain	Vomiting
Reactive TB	Pain when swallowing	Meningitis
Hair loss	Persistent fever	Memory loss
Severe tiredness	Diarrhoea	Pneumonia

Number of HIV/AIDS-related deaths: _____

_____ _____

Contractor **Date**

_____ _____

Departmental Project Manager **Date**

Occupational Health & Safety Specification

public works
& infrastructure
Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

National Department of Public Works

(Principal Client)

_____

Health and Safety Site Specific Specification

Submitted to:

Contractor:_____

FOR

Site: Thohoyandou High Court

Reference nr:

OFFICE OF THE REGIONAL MANAGER

DEPARTMENT OF PUBLIC WORKS

Private Bag X9469

POLOKWANE

0700

Date: 21 July 2022

Covid19 regulations and protocols form part of Health and Safety and must be incorporated and must be priced to ensure all legislation are adhere to. The average price for H&S& Covid is plus minus 5% of contract value. The OHS must be priced in the BOQ a requirement.

Scope of work:

The SANS 10400 –S :2011 must be used to construct the Disability Facility INDEX:

1. This specification document (Construction regulation 2014, (7)(c)(1))
2. The Safety File
3. The Safety File Index
4. Incident / Accident reports / Wcl 2
5. Safety Committee and Minutes
6. Monthly Safety Audit Reports (CR 2014 7(1)(c)(vii))
7. Letter of good standing (CR 2014 7(1)(c)(iv))
8. Health and Safety Organogram
9. contractor A's appointment letter as a Contractor
10. Legal Appointments
11. Operators Appointments (CR 2014 23(d)(i(ii))
12. List of Plant on Site
13. List of Contractors on Site
14 Mandatory Agreement with contractor
15. Contractors Mandatory Agreements
16. Contractors Specification Documents (CR 2014 7(c)(i)
17. Contractors Appointment Letters (CR 2014 7(c)(v)
18. Contractors Safety Plans (CR 2014 7(c)(vi)
19. Contractors "Letter of Good Standing." (CR 2014 7(c)(iv)
20. Plant Hire and Labour only Contractor's Mandatory Agreements
21. contractor A's Safety Plan (CR 2014 7(2)(a))
22. contractor A's Health & Safety Policy Document
23. Risk Assessments Plan/Policy/Procedure (CR 2014 (9))
24. Incident/Accident Reporting Policy/Procedure
25. Health and Safety Specification Document (This document)(CR 2014 ((7)(c)(i))
26. Fall Protection Plan (CR 2014 10(1))
27. Site Emergency Plan
28. Site Rules
29. Risk Assessments
30. Public Safety
31. Safety Awareness Program
32. Toolbox Talks
33. REGISTERS
34. Induction Training Register (CR 2014 (7)(5))

35. PPE Issue Register
36. Safety Harness Register
37. Hazardous Chemical Substance Register (CR 2014 (25))
38. Ladder Register
39. First Aid Register
40. Lifting Equipment Register
41. Electrical Equipment Register
42. Fire Equipment Register
43. Scaffold Register
44. Form & Support Work Register (CR 2014 12)
45. Explosive Actuated Fastening Devices Register (CR 2014 (21)(2)(g)(i))
46. CHECKLISTS
48. Electrical safety (CR 2014 (24)
49. Competency certificates (CR 2014 (1)(a))
50. Medical Certificates(CR 2014 7(1)(g))
51. Regulations applicable (CR 2014 7(3))
52. Covid 19 specification

Before you will be allowed to perform work on site you must adhere to all of the following as contemplated in the Occupational Health and Safety Act, Act no 85 of 1993, the Construction Regulation 2014 and this document: (and must have an approved H&S plan in place)

1. This specification document (Construction regulation 2014, (7) (c) (1))

You are required to compile your safety file the way we require in this document. You will not be to allowed to start working on site unless your safety file has been approved. Submit the file well in advance to enable our safety Department to audit and approve it, and if there are any discrepancies you will have ample time to rectify and re-submit.

This document requirement is that of what is written in the OHS Act. It also contains guidelines from Departmental Enquiries, court cases and own Experience. The ultimate goal of this document is to direct you

to be legal and thereby keep us, contractor, the Principle Contractor, and the Client, legal and free from prosecution.

This document serves as our minimum requirements. We don't go overboard with safety. Nevertheless, this document is the law on site. Don't do less than what is described in this document. Don't fall victim to the new stupidity of propagating that, "if it is not specified in this document then we won't do it," or, "it is not explicitly mentioned in the OHS Act and therefore we will not do it."

2. The Safety File

1. Use a lever arch file to contain all the documents
2. Divide the documents with dividers of the plastic type, numbered 1 to 31. Use another set of dividers behind the first, if the one set is not sufficient.
3. Clearly identify the file with the words "Safety File" and the Company name printed on the side with letters big enough to read from a distance for anyone on site to recognise it as the safety file.
4. Always have the safety file available in the site office. It will be handed to the Client at site handover. It may never leave the site.
5. All forms must be completely filled in and fully signed by all parties.
6. It must be clearly understood that all documents in the safety files are legal documents and must be treated as such. If corrections are made on any of the documents it must be initialled by all parties involved. No tipex are allowed.
7. All documents that are copies of the originals must be certified as a true and correct copy of the original.

3. The Safety file index

1. Laminate the file index to prevent it from tearing and it will last longer. Paste it in front of the file.

The following is a sample of such an index. There may be items that you want to add or change to fit your style. You may do so.

2. Please note that we need you to keep all documents separate with dividers. It makes it easier to find during an audit and your day to day activities.

3. Also note that one person can be appointed for more than one designation. The site number, printed in red on the cover page, must be prominently printed on all your documents.

INDEX:

1. Incident / Accident reports / Wcl 2 forms / Annexure ones
2. Safety Committee Meeting Minutes (Supplied by contractor)
3. Monthly Safety Audit Reports (We will audit you monthly) (CR 2014 (7) (c) (vii))
4. Letter of Good Standing (CR 2014 (7) (c) (iv))
5. Health and Safety Organogram
6. Contractor A's appointment letter as a Contractor (CR 2014 (7) (c) (v))
7. Legal Appointments With proof of Competency & Medicals
8. CEO Delegation of Duties (16.2)
9. Construction Manager (CR 2014 (8) (1))
10. Assistant Construction Manager (CR 2014 (8) (2))
11. Construction Safety Officer (CR 2014 (8) (5) (6))
12. Construction Supervisor (CR 2014 (8) (7))
13. Assistant Construction Supervisor (CR 2014 (8) (8))
14. Risk Assessors (CR 2014 (9) (1))
15. Temporary Works Designer & Inspector (CR 2014 (12) (1) & (3) (f))
16. Temporary Works Supervisor (CR 2014 (12) (2) & (3) (a))
17. Excavation Supervisor (CR 2014 (13) (1) (a))
18. Scaffold Supervisor (CR 2014 (16) (1))
19. Scaffold Inspector (SANS 10085-1:2004 Edition 1.1 (14.5)
20. Scaffold Team Leader (SANS 10085-1:2004 Edition 1.1 (14.4.1)

21. Scaffold Erectors (SANS 10085-1:2004 Edition 1.1 (14.4.1)
22. Fire Equipment Inspector (CR 2014 (29) (h))
23. Fall Protection Planner (CR 2014 (10) (1) (a))
24. Safety Representatives (OHS Act (17))
25. List of Plant on site
26. Blank Appointments
27. Accident Register
28. Principle Contractor Mandatory Agreement
29. Plant Hire & Labour Only Mandatory Agreements
30. Fall Protection Plan (CR 2014 (10) (1))
31. Principle Contractor Safety Specifications (CR 2014 (7) (c) (1))
32. Safety Plan (CR 2014 (7) (c) (x))
33. SHEQ Policy
34. Risk Assessment Plan
35. Contractor Accident Reporting Procedure
36. Contractor Incident Reporting & Investigation Policy

For your documents that you are using daily, we suggest you open a separate file. The following is a sample of such a file index. There may be items that you want to add or change to fit your style. You may do so. Please again note that we are keeping all documents separate with dividers.

INDEX:

1. Registers:

- Toolbox Talks
- PPE Issue Register
- Hazardous Chemical Substance Register

- Safety Harness Register
- First Aid Register
- Incident/Accident Register
- Lifting Equipment Register
- Earth Leakage Testing Register
- Electrical Equipment Register
- Fire Equipment Register
- Scaffold Register
- Form & Support Work Register
- Explosive Powered Tool Register

2. Checklists:

- Electrical Extension Cords Checklist
- Safety Harnesses Checklist
- First Aid Boxes Checklist
- Lifting Equipment Checklists
- Fire Equipment Checklist
    - Formwork

3. Temporary, Electrical, and DB Box Checklist:

- Electric Drills Checklist
- Angle Grinder Checklist
- Skill Saw Checklist
- Ladder Checklist
- Scaffold Checklist
- Link stick
- Jump suite
- Gloves
- Fire Extinguisher Checklist
- formwork

4. Excavation Checklist:

- Form and Support Work Checklist
- Gas Welding & Cutting Checklist
- Hand tools Checklist

It must be clearly noted that we do not accept registers that are also a checklist. We herewith clearly state that the registers and checklists are separate forms and must be utilised as such.

4. Incident / Accident reports / WcI 2

All incidents and accidents where someone was hurt, there was damage or illness, must be reported to our Safety officer Do not hide any accidents from us. We need to know about any incidents in order for us to assist you in preventing a similar incident. We have no blame but retrain policy. You are to familiarise yourself with our incident/accident reporting procedures.

5. Safety Committee and Minutes

We have established a Health and Safety Committee. You must nominate one person from your management and one person from your Safety Reps to serve on our safety committee. Whether you qualify to have a Safety Rep or not. We will supply the appointment letters and appoint them on the safety committee. Every Contractor must be represented on our safety Committee and be involved in safety on site. The safety meeting will be held monthly. Minutes will be kept and distributed to you for filing in your safety file. The Client, NDPW representative will sit in on some of the meetings as an observer.

6. Monthly Safety Audit Reports (CR 2014 7(1) (c) (vii))

We will do a full health and safety audit on your safety file and your activities every month. The results and the report must be filed by you in the safety file. Discrepancies must be action Ed within a week and signed off on the audit report. You must also do monthly safety audits on yourself. The reports must be filed in your safety file.

7. Letter of good standing (CR 7(1) (c) (iv)) 2014

You are to ensure that a letter of good standing with the Workman's Compensation Commissioner is current and kept in your file

as proof that you are registered and in good standing with the compensation fund, or with a licensed compensation insurer prior to work commencing on site. (At least two weeks before arriving on site). If your letter has expired, your workers on site are not insured and work will be stopped until such time as you are in good standing with the Workman's Compensation Commissioner again. Contractor will not take responsibility on our Workman's Compensation insurance for your workforce.

8. Health and Safety Organogram

You must have a health and safety organogram in your safety file. It must always be kept up to date and current.

9. Contractor A's appointment letter as a Contractor

It is your duty to ensure that your appointment letter as a Contractor is in the safety file.

10. Legal Appointments

All your appointment letters must be properly signed by all parties involved. It must also be completely filled in with no blank spaces. The name of the appointment must be clearly written on the appointment. Proof of competency (Construction Regulation 2014 (1) (a)) must be attached to the back of the appointment letter. Proof of competency may be proven with degrees, diploma's, certificates and/or a short abbreviated CV as per the following example. A medical certificate (Construction Regulation 2014 (7) (8)) must be attached behind the proof of competencies. We do not accept appointment letters that has two designations on it. Each designation must have its own appointment letter.

Sample abbreviated CV:

Project name	year	period	Contract amount	Your position

The following appointments must be made by you. Remember that in most cases one person can be appointed for more than one appointment:

* CEO Delegation of Duties (16.2)

* Construction Manager (CR 2014 (8) (1))
* Assistant Construction Manager (CR 2014 (8) (2))
* Construction Safety Officer (CR 2014 (8) (5) (6))
* Construction Supervisor (CR 2014 (8) (7))
* Assistant Construction Supervisor (CR 2014 (8) (8))
* Risk Assessors (CR 2014 (9) (1))
* Temporary Works Designer & Inspector (CR 2014 (12) (1) & (3) (f))
* Temporary Works Supervisor (CR 2014 (12) (2) & (3) (a))
* Scaffold Inspector (SANS 10085-1:2004 Edition 1.1 (14.5)

If you are going to erect your own scaffolding, you need to have a scaffold Inspector and the following three scaffold appointments.

* Scaffold Supervisor (CR 2014 (16) (1))
* Scaffold Team Leader (SANS 10085-1:2004 Edition 1.1 (14.4.1)
* Scaffold Erectors (SANS 10085-1:2004 Edition 1.1 (14.4.1)
* Temporary Electrical Installation Controller (CR 2014 (24) (c))
* Fire Equipment Inspector (CR 2014 (29) (h))
* Fall Protection Planner (CR 2014 (10) (1) (a))
* Safety Representatives (OHS Act (17))
* First Aiders

11. Operators Appointments (CR 2014 23(d) (i (ii))

All operators must be appointed with a letter of appointment. The letter of appointment is actually a letter to authorise that person to operate the plant, equipment or tool.

* The letter must be properly signed by all parties involved. The name of the appointment must be clearly noted on the appointment.

* The operator must have a competency certificate from, or sent for training at, an accredited training provider.

* The certificate of competency must be attached to the back of the appointment letter.

* The operator must be in possession of a valid medical certificate declaring the operator medically fit to operate the plant, equipment or electric tool, as per the Construction Regulations 2014 (7) (8) & Annexure 3.

* If an operator has no competency certificate, they won't be allowed to operate the plant. If an operator has no medical certificate, they won't be allowed to operate the plant.

* Copies of original documents must be certified as being a true and correct copy of the original document.

12. List of Plant on Site

You must paste a list of all plant on site in the safety file. It must always be kept up to date and current.

13. List of Contractors on Site

If you have contractors, you must paste a list of all Contractors on site in the safety file. It must always be kept up to date and current.

14. Mandatory Agreement with contractor

We will see to it that a mandatory agreement is signed and entered into with contractor and contractor A. This agreement must be properly signed and all pages must be initialled by all parties. It refers to Section 37 1 and 2

15. Contractors Mandatory Agreements

It is contractor A's duty to see to it that a mandatory agreement is signed and entered into between contractor A and all their contractors on site before they come onto site. These agreements must be properly signed and all pages must be initialled by all parties. These mandatory agreements must be done in duplicate. One properly signed copy must be filed in your safety file. The other copy must be filed in the Contractors safety file. You must come to an agreement regarding the Safety Rep and the first aid arrangements with the Contractors. These arrangements must be written in the mandatory agreement. These arrangements are as follow; they must have at least one trained Safety Rep and at least one trained First Aider, whether they qualify to have one or not.

16. Contractors Specification Documents (CR 2014 7(c) (i)

Each one of your Contractors must be issued with a health and safety specification document written by contractor A.

Remember you must issue a site specific, and a job specific health and safety specification document. We don't want to see generic specification documents. We also don't want to see this document passed onto your Contractors as your specification document to them. Write your own. Contractors must sign for their specification documents.

17. Contractors Appointment Letters (CR 2014 7(c) (v)

Each one of your Contractors must be appointed in writing as a Contractor. The original letter where contractor A informed the Contractor of the allocation of the tender to them would suffice. These documents must be filed in your safety file. Copies of these documents must also be filed in the Contractors safety files by the Contractors.

18. Contractors Safety Plans (CR 2014 7(c) (vi)

All your Contractor's safety plans must be scrutinised by you and if in line with this document, the OHS Act and the Construction Regulation 2014, it must be approved by you in writing. The approval letters must be filed in the Contractors safety file and copies thereof in yours.

19. Contractors "Letter of Good Standing." (CR 2014 7(c) (iv)

None of your Contractors may be allowed to perform any work unless they submit a valid "Letter of Good Standing" as proof that they are in good standing with the Workman's Compensation Commissioner. These letters must be filed in the Contractor's safety files and the validation dates closely monitored.

20. Plant Hire and Labour only Contractor's Mandatory Agreements

This is a very controversial subject. Are they contractors or not? This is how we want you to handle the situation. If you hire a TLB from a person or a few tippers from another, and you want to treat them as a plant hire company and not a Contractor, then we require you to enter into a mandatory agreement with them. In the agreement you must clearly state that the operators are under your full management and control. You must also clearly state that contractor A takes full responsibility for the operators under their Workman's Compensation insurance. Labour Only's must be treated in the same manner. It is clearly stated that all plant hire companies cannot be treated this way just to avoid them having a safety file. We're talking one or two plant being hired. All the pages of the mandatory agreements must be initialled by all parties. It must also be properly signed by all parties.

21. Contractor A's Safety Plan (CR 2014 7(2) (a))

In answer to this safety specification document, contractor A must submit a safety plan on exactly how you plan to implement and manage health and safety on the site. The safety plan must address and reference to all items mentioned in this safety specification document. The safety plan will be scrutinised by contractor and after we familiarised ourselves with the content, and only after we are satisfied that will be compliant to the OHS Act, the Construction Regulation 2014 and this specification document, will we issue an approval letter for your submitted safety plan. The approval letter must be filed with your safety plan in your safety file. Please be advised that your safety plan must be signed by contractor A's Chief Executive Officer.

WARNING:

1 Do not submit a generic safety plan. It must be special ally design for your project

2 Do not submit a safety plan that says some items in your plan may not be applicable to the site. that makes it generic. Make it site and job specific. We don't want to pick which items are applicable.

3 If your safety plan is approved, you are obliged to implement everything mentioned in your safety plan.

4 Construction Regulation 2014 (7) (1) (c) (vi)) explicitly says that we must take steps to ensure that each Contractor's health and safety plan is implemented and maintained on the construction site.

22. Contractor A's Health & Safety Policy Document

You must paste your health and safety policy document in the safety file.

23. Risk Assessments Plan/Policy/Procedure (CR 2014 (9))

You must file your signed site specific risk assessments plan/policy/procedure in the safety file. The plan/policy/procedure must be communicated to all persons on site and record there-of must be kept.

Your assessment must be more or less have the basic matrix as shown below see tables

BASELINE RISK MATRIX	HAZARD EFFECT / CONSEQUENCE				
Loss type	**1 Insignificant**	**2 minor**	**3 moderate**	**4 major**	**5 catastrophic**
Time line	No impact on overall project timeline	May result in overall project timeline overrun of less than 5%	May result in overall project timeline overrun of between 5% and less than 20%	may result in overall project timeline overrun of between 20% and less than 50%	May result in overall project timeline overrun of 50% or more
Budget	No impact on the budget of the project	May result in overall project budget overrun of less than 5%	May result in overall project budget overrun of between 5% and less than 20%	May result in overall project budget overrun of between 20% and less than 50%	May result in overall project budget overrun of 50% or more
Investment return NPV loss	Less than R5m	R5m to less than R50m	R50M to less than R500m	R500m to R5b	R5b or more
Quality	No impact on quality	Minimal quality issues that can be addressed in a short timeframe with minimal interactions	Some quality issues that requires immediate management action	Significant quality issues that requires senior project management interaction	Significant quality issues that requires sponsorship intervention with significant resource and cost implications for rework
Safety / health	First aid case / Exposure to minor health risk	Medical treatment case / Exposure to major health risk	Lost time injury / Reversible impact on health	Single fatality or loss of quality of life / Irreversible impact on health	Multiple fatalities / Impact on health ultimately fatal
environment	Minimal environmental harm – L1 incident	Material environmental harm – L2 incident remediable short term	Serious environmental harm – L2 incident remediable within LOM	Major environmental harm – L2 incident remediable post LOM	Extreme environmental harm – L3 incident irreversible
Legal & regulatory	No legal impact	Minor legal concerns with minor impact	Some legal concerns with manageable level of impact	Serious legal concerns and significant impact on operations	Legal non-compliance with risk of shutdown of operations with significant cost impacts
Reputation /social / community	Slight impact - public awareness may exist but no public concern	Limited impact - local public concern	considerable impact - regional public concern	National impact - national public concern	International impact - international public attention

LIKELIHOOD		RISK RATING				
5 Almost Certain	The unwanted event has occurred frequently; has a 90% and higher probability of reoccurring	**11 Medium**	**16 Significant**	**20 Significant**	**23 High**	**25 High**
4 Likely	The unwanted event has a probability of between 60% and less than 90% of occurring	**7 Medium**	**12 Medium**	**17 Significant**	**21 High**	**24 High**
3 Possible	The unwanted event has a probability of between 30% and less than 60% of occurring	**4 Low**	**8 Medium**	**13 Significant**	**18 Significant**	**22 High**

2 Unlikely	The unwanted event has a probability of between 1% and less than 30% of occurring	**2 Low**	**5 Low**	**9 Medium**	**14 Significant**	**19 Significant**
1 Rare	The unwanted event has never occurred, has a probability of less than 1% of occurring	**1 Low**	**3 Low**	**6 Medium**	**10 Medium**	**15 Significant**

NO	HAZARD ITEM	RISK ASSOCIATED WITH HAZARD	CONCEQUNCES	RISK REVIEW	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
1.	**SITE ESTABLISHMENT**						
1.1	incompetent persons - incorrect stacking - procedures during site establishment	Injuries during off loading • Cuts and burns • Rushed activities • Incorrect supervision • Trip and fall • Cuts • Collapsing of stacks	• Hand and back injuries • Dropping of equipment • Physical injuries • Lost Time injuries • Medical treatment cases • Potentially fatal accidents • Loss of limbs	6	• The contractor must declare all employees competent in writing • Contractor OHS file must be approved prior to site establishment begins • Site specific safe work procedures must be followed • Site–induction must be given to all employees to make them aware of the specific hazards • Employees must be issued with correct PPE before work begin • All workers on site must be declared medically fit by a medical practitioner	Construction supervisor - Contractor Safety Officer - CHSA (Construction Health & Safety Agent) - Construction Manager - Construction supervisor	During site establishment
1.2	OFFLOADING HEAVY EQUIPMENT AND CONTAINERS P/C SITE ESTABLISHMENT	• Defective mobile crane can cause accidents • Adverse weather conditions • Untrained personnel/ Operators • Unsafe hooking methods unstable load	• Serious injury and fatalities • Damage to property and equipment • Potential hand & foot injuries • Standing time	19	• Material to be stacked on firm and level ground. • Stacking to be supervised by a competent supervisor. • Adequate storage area to be provided • All unstable stacks to be dismantle and stacked over • Load test certificate will be submitted to the client. • Rope certificates must be submitted to the client. • Safe load indicator must be in good working order. • Over wind device must be in place and in working order. • Daily checks as per checklist by operator. • Checklist signed by supervisor and filed by safety officer.	- Construction Supervisor - CHSO - Construction Manager	During site establishment

LIST OF COMMEN RISKS ON THIS PROJECT SUBJECTED TO CHANGE: These risks must be tableted; see above tables for reference and then put the risk and then the remedial action for the following list of risks

You may add to the list of risks in your risks analyses

- Concrete works
- Formwork
- Reinforcement
- Dust and noise pollution
- Debris removal
- Handling of materials

- Temporary supports to openings through existing walls
- Electrical strip and making safe work and all other electrical works
- Demolitions
- Breaking up and removal mass concrete aprons and ramp
- Removal of floor and wall tiles ,floor covering
- Ironmongery removal of locks handles
- Removal of glass and related glazing work including a safety glass installation
- Removal of all water pipes and reinstall copper pipes
- Laying and backfilling of pipes and electrical supply cables
- Plumbing and drainage
- Paintwork including sanding and cleaning
- Tree removal
- Excavating
- Soil poisoning
- Form work ,scaffolding ,rigging
- Gas reticulation and appliance installations
- General

24. Incident/Accident Reporting Policy/Procedure

You must paste our incident/accident reporting policy/procedure document in your safety file.

25. Health and Safety Specification Document (This document) (CR 2014 ((7) (c) (i))

This specification document must be signed by your CEO and filed in your safety file.

26. Fall Protection Plan (CR 2014 10(1))

You must have a fall protection plan in your safety file. The plan must be developed by your appointed Fall Protection Planner.

Your fall protection plan must be site specific and practically viable and must cover this sites anticipated fall hazards for your

Work area. Do not submit a generic fall protection plan, we know them all. All persons in your employment on site must be trained in fall protection plan.

The attendance register for the training must be attached to the fall protection plan. The plan must also

contain a rescue plan for workers hanging from a height in a harness. You only have five minutes to rescue the person hanging

from a harness. Your plan should include a practical rescue plan and equipment. Persons executing the rescue plan must be

Trained in the plan. Your site management must endorse (sign) the plan.



27. Site Emergency Plan

You must familiarise yourself with the site emergency plan developed by contractor. All your employees on site

Must be trained on the site emergency plan. The attendance registers for the training in the site emergency plan

Must be signed and filed in your safety file. The emergency plan is pasted on the notice board on site.

Emergency numbers is also prominently displayed on the notice board.

28. Site Rules

Our site rules, applicable to this site, are pasted on the notice board for everyone to have access to it. All your

Employees on site must be trained in our site rules. The attendance registers for the training in the site rules

Must be signed and filed in your safety file.

29. Risk Assessments

All your tasks performed on site must be backed by a risk assessment which determined the risks, the hazards

And determines the best preventative measures to minimize the risks and hazards. All the risk assessments must have:

1 The site name on the risk assessment.

2 The date on the risk assessment.

3 The person/s name/s that did the risk assessment and their signatures.

4 Managements signature - as proof of their endorsement and knowledge of the assessment.

5 An attendance register as proof that your employees were trained in the risk assessment.

30. Public Safety

The site is securely barricaded to keep members of the public from entering the site. The entrance to the site

Has access control. Make sure your visitors to the site signs the visitor's book and follow signage directing all

Visitors to the site office.

31. Safety Awareness Program

Poster is displayed in conspicuous places on site depicting various safety tips. Make your employees aware of

Them

32. Toolbox Talks

You will do a safety talk with your employees once per week and it must be recorded as proof that you have Done so. The Toolbox talk attendance register must be filed in the safety file. Each person on site must attend a toolbox talk at least once per week. You must force the contractors to also do toolbox talks once per week and they must also keep record thereof. Topics must be meaningful, not just, e.g. "PPE" or "Safety." It must be Specific and really meaningful. Toolbox talks must be signed by the facilitator and signed off by management.

33. REGISTERS

Do not use checklists as registers. You must have a separate document that serves as a checklist and a separate Document as a register. A register is not a checklist and vice versa. A register is documents where you list all the items you have in stock.

34. Induction Training Register (CR 2014 (7) (5))

We, contractor, the Principal Contractor, will do the site specific induction training with everyone on site. All Induction training will be recorded by us in the induction training register. ID numbers will also be noted, so keep them close by. No person or employee will be allowed or permitted to work on the site, unless such an employee or person has undergone the site's health and safety induction training, pertaining to the hazards prevalent on the site at the time of entry. It is your responsibility to ensure that all your employees on site has indeed undergone the said induction training before they start working

35. PPE Issue Register

You must issue your employees with the prescribed PPE free of charge. Hard hats, Overall, Steel point safety Shoes are compulsory on site. You will keep a PPE issue Register and record all PPE Issued thereon. ID numbers must also be noted. All persons must be trained in the care and correct use of their PPE. PPE issued must be backed by a risk assessment.

36. Safety Harness Register

All your harnesses must be numbered and recorded on register. You must have a separate document that serves as a checklist. A register is not a checklist and vice versa. If you issue safety harnesses you must make the employee sign for it and you must train them in the proper use thereof and keep record of the training.

37. Hazardous Chemical Substance Register (CR 2014 (25))

All hazardous chemical substances must be listed and controlled on a register. These chemicals must be stored in a well-ventilated secure storage facility on site. Most of these chemicals on site is flammable and must be stored in your flammable goods store. These are samples of storage facilities for hazardous chemical Substances.





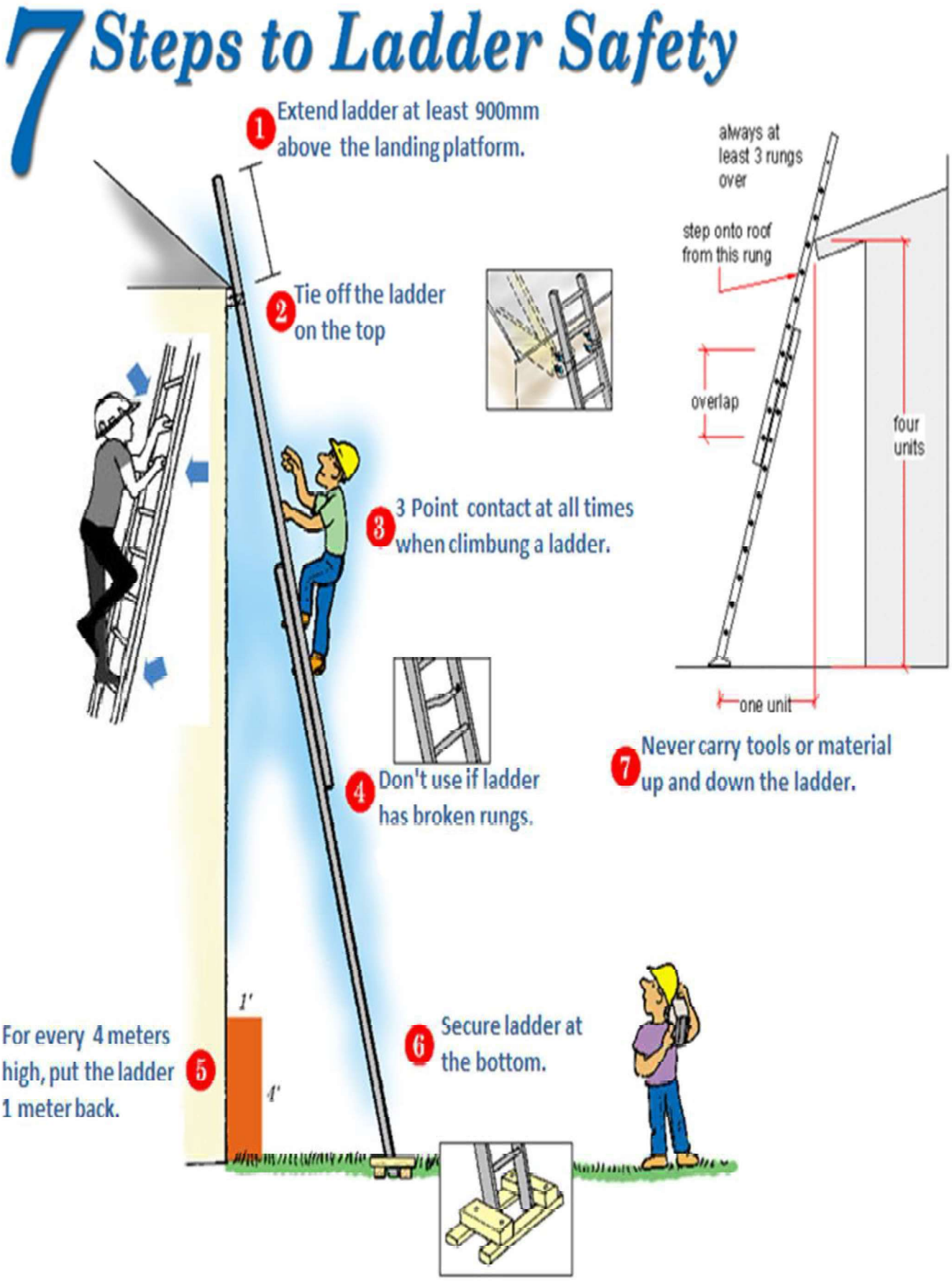
38. Ladder Register

All your ladders must be numbered and listed on a "Ladder Register" and this register must be kept up to date.

No self-made ladders will be allowed on site. Study the seven rules of ladders and make sure your employees strictly adhere to it.






7 Steps to Ladder Safety
1 Extend ladder at least 900mm above the landing platform.
2 Tie off the ladder on the top
3 3 Point contact at all times when climbung a ladder.
4 Don't use if ladder has broken rungs.
5 For every 4 meters high, put the ladder 1 meter back.
1'
4'
6 Secure ladder at the bottom.
7 Never carry tools or material up and down the ladder.
always at least 3 rungs over
step onto roof from this rung
overlap
four units
one unit

39. First Aid Register

All your first aid incidents must be recorded in your first aid register. It must also be reported to our Safety Officer.

40. Lifting Equipment Register

All your lifting equipment must be listed on a Lifting Equipment Register. All lifting equipment must be Inspected on a separate checklist. The checklist must be signed by the person doing the check and signed off by management. Any discrepancies noted must immediately be actioned and action taken must be noted on the checklist. No discrepancy may be carried over to another checklist.

41. Electrical Equipment Register

Your electrical equipment must be numbered and listed on an electrical equipment register. Each one of these items on the register must be inspected on their own checklist. The checklist must be signed by the person doing the check and signed off by management. Any discrepancies noted must immediately be actioned and action taken must be noted on the checklist. No discrepancy may be carried over to another checklist. Checklist must have all equipment e.g. safety harness , link stick , gloves , jump suite ect.

42. Fire Equipment Register

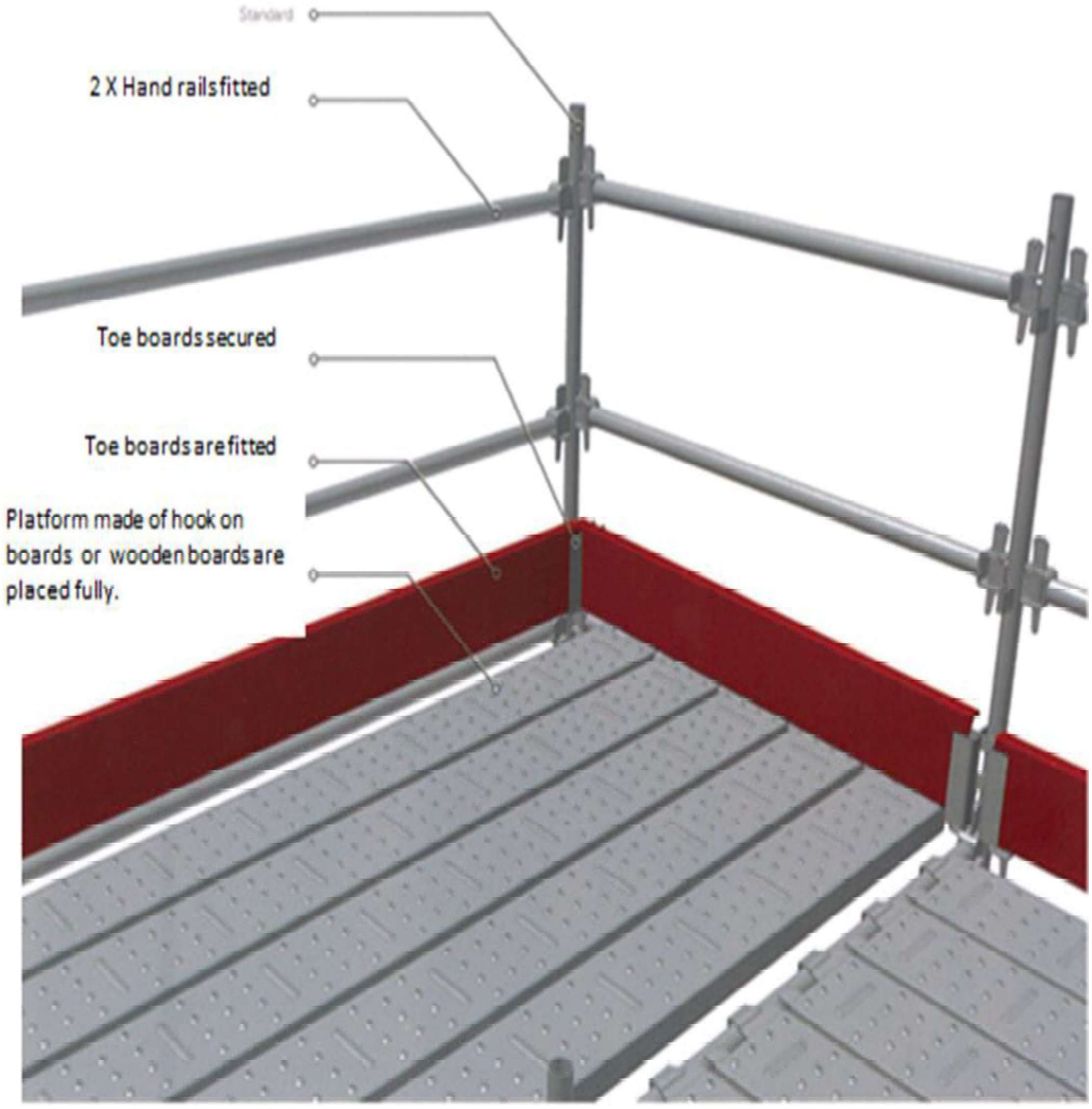
All your fire equipment must be numbered and listed on a fire equipment register. All fire equipment on register must be inspected monthly on a separate checklist. The checklist must be signed by the person doing the check and signed off by management. Any discrepancies noted must immediately be actioned and action taken must be noted on the checklist. No discrepancy may be carried over to another checklist.

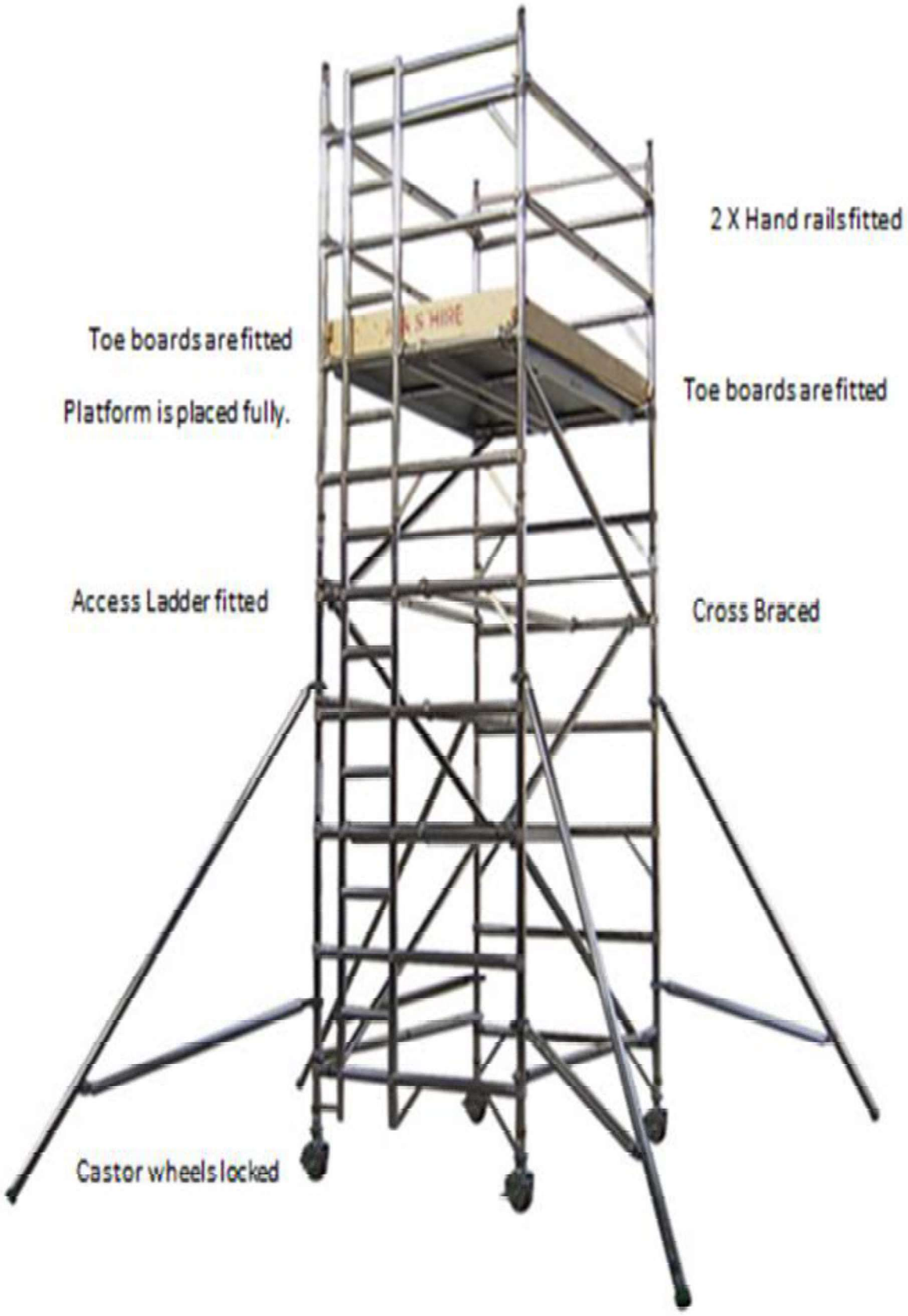
43. Scaffold Register

All you're scaffolding on site, whether completed or not, certified safe or not, must be listed on a register. All Scaffolding on your register must be inspected daily, or if any changes on the structure was made. This must be

done on a separate checklist. The checklist must be signed by the person doing the check and signed off by Management. Any discrepancies noted must immediately be actioned and action taken must be noted on the checklist. No discrepancy may be carried over to another checklist.

Scaffolding must at least be of the standard shown underneath. Make sure that all your employees are trained in the illustrations and scaffold rules underneath.


Standard
2 X Hand rails fitted
Toe boards secured
Toe boards are fitted
Platform made of hook on boards or wooden boards are placed fully.


2 X Hand rails fitted
Toe boards are fitted
Platform is placed fully.
Toe boards are fitted
Access Ladder fitted
Cross Braced
Castor wheels locked

No person may use any scaffold if it isn't declared safe for use and tagged with a tag, simular to this tag, tied to the scaffold.



Front



Back



Front



Back

No person may use any scaffold if it is tagged with a tag, simular to this tag, tied to the scaffold.

Keep scaffold platforms free from tripping hazards







44. Form & Support Work Register (CR 2014 12)

All your form and support work must be listed on a form and support work register. All form and support work on register must be inspected and certified by a competent person before pouring of any concrete.

45. Explosive Actuated Fastening Devices Register (CR 2014 (21) (2) (g) (i))

Your explosive powered tool and the cartridges must be listed and controlled on an explosive powered tool register.

46. Gas registers

Gas must be registered to ensure there's not more gas on site as necessary this gas include AC refill gas and nitrogen

47. CHECKLISTS

Checklists must be done daily, weekly or monthly depending on the type of checklist. If an item on a checklist is "OK" or "correct," the block must not be ticked, it must be initialled. The person doing the checks must initial in the block. Any discrepancies must be marked with a cross and then action ed immediately by your Construction supervisor. All checklists must be dated. All checklists must be signed by the person doing the checklist. Your Construction Supervisor must sign off the checklist. The checklist must be kept in the file for record and auditing purposes. In this document we supply a long list of possible checklists that could be used on site. Our advice is for you to have as much checklists as possible, to cover yourself.

48. Electrical safety (CR 2014 (24)

We take electrical safety very seriously. The following are examples of common unsafe electrical practices we don't want to see on our site



No joints are allowed on electric extensions cords. DB boards must have a COC certificate. We don't want to see any exposed wires like we see in the photo.

49. Competency certificates (CR 2014 (1) (a))

Where-ever this specification document prescribes a "competent" person, we will need a competency certificate issued by an accredited training service provider. All competency certificates must have the required criteria lay down by SAQA and the National Qualifications Forum (NQF), for the issuing of certificates in South Africa. All certification documents, whether a certificate or a letter, must at least, have the following criteria: Issue d

- Expiry date
- At least two signatures
- One signature – the Assessor who assessed the certificate holder
- Assessors registration number at the NQF
- Certificate number
- Contact telephone number where we can verify the authenticity of the certificate.
- Certificate holder's full names and surname
- ID Number of certificate holder

50. Medical Certificates (CR 2014 7(1) (g))

All your employees must have a medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of the attached Annexure 3.

51. Regulations applicable (CR 2014 7(3))

Where contractor appoints another contractor to perform construction work, the duties determined in the Construction Regulations 2014 that apply to the principal contractor apply to the contractor, as if he or she were the principal contractor. Your file must be submitted to us for approval, well in advance, prior to you coming on site. (At least two weeks) This will prevent delays. You will not be allowed to start working on site unless our safety department gave their approval on the successful implementation of the above.

This document serves as a guideline on how we want you to manage the safety program on site. It is common sense and common knowledge that the OHS Act and the Construction Regulation 2014, must be read, and implemented, in liaison with this document and all its requirements. These three are the standards we will use when we audit your safety system.

See table next page

Annexure 3

OCCUPATIONAL HEALTH AND SAFETY ACT 85 OF 1993 Construction Regulation 2014

Medical Certificate of Fitness

Name of Employee: **ID Number:** **Co Number:**

	* Possible Exposures e.g. noise, heat, fall risk, dust, confined space, etc.	* Job Specific Requirements e.g. Operating Mobile Crane, Digging Trenches, Erecting formwork & Supportwork, etc.	* Protective Equipment e.g. Dust Respirator (Light Duty), Welding Gloves, etc.
* Occupation			

* The Employer to complete the information in the spaces marked with an * before sending the Employee for a medical examination.

Declararion by the Medical Examiner:

I certify that I have by, examination and testing, using the above criteria specified by the employer, satisfied myself that the abovementioned employee is fit to perform the duties as described by the employer in the matrix above.

Occupational Medicine Practitioner/Occupational Health Nursing Practitioner: (Please Print Name) _____

Signature: _____ Practice Number: _____ Date: _____

Address: _____

52. Covid 19 specification:



##

Addendum to the health and safety specification document.it form a part of the Health and safety specification

COVID-19 pandemic prevention measures to be taken

Site Name: _____

Principal Contractor Name: _____

Contractor Name: _____

Date: _____

WCS /tender number: _____

Approval + official details that approved the document: _____

Background:

You are going to start working on the site soon as it is allowed. That means you must have a Covid - 19 management plan that form part of your health and safety plan, as an addendum, in your safety file. The Covid - 19 management plan must be developed by a competent person.

You're Covid - 19 management plan must be site specific and practically viable and must cover this sites anticipated areas where infections are likely to occur on your site area. All persons in your employ on site must be trained in your Covid - 19 management plan. The attendance register for the training must be attached to the Covid - 19 management plan.

You're CEO and site management must endorse (sign) the Covid - 19 management plan.

Your Covid - 19 management plan must contain at least the following:

a. A schematically drawing of the actual work area and where the actual work will be performed.

b. Health Risk Assessment:

   i This risk assessment must form part of your management plan. We do not want it as a separate document. It must physically form part of the Covid - 19 management plan. Bind it within the plan document.

   ii Different areas in the workplace might require different methods of safeguarding the employees. In that case specify the area and determine the risks and mitigating measures of that specific area.

c. What are the symptoms and how to identify them in the workplace?

d. Screening of workers. How will it be done and when?

e. If someone is suspected of having the Covid -19 virus, what will the procedure be?

f. If an employee suspects that he/she has contracted the virus, what would the procedure be?

g. What PPE will be issued and when?

h. Quarantine:- self quarantine, forced quarantine, what will your procedure and policy be?
i. Working from home guidelines. (When, who, etc.)
j. Safe travelling to and from work.
k. How will you safeguard meetings? Precautions during meetings?
l. Hygiene in the workplace:

This specs was developed for Construction sites.

i. Disinfecting workplace, tools, facilities, etc.
ii. Disinfecting hands and body parts.
iii. Methods of disinfecting that will be used.
iv. What type of disinfectant?

m. Physical contact. (Control, who, when, etc.)
n. Training of employees
o. Cross Provincial border travel of employees.
p. Keeping record and communicating vital information of cases detected on site.
q. Visitors to the site.
r. Social distancing on site.
s. Employee awareness program.
t. Regularly cleaning common contact surfaces on site?
u. How will you treat drivers that deliver to site?
v. Handwashing facilities. (Where, when, how many, type, etc.)
w. Provision and disposal of hand towels.
x. Cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush.
y. Portable toilet hygiene.
z. Break times, how will you reduce congestion and contact?
aa Hygiene at water drinking stations.
ab Tracing of infected employees.
ac Your weekly Covid - 19 reports that must be submitted to the Client.
ad Congestion at the workplaces.
ae Consequence of not adhering to the Covid - 19 management plan, the risk assessment and the policy.
af You must develop a Covid - 19 Policy.
ag How will you manage your contractors on site regarding the Covid - 19?

The required document must be submitted to DPW Consultants/Project managers/OHS Managers. We will issue a letter of approval if all the requirements in this addendum to the health and safety plan, have been met. Please note that these requirements are minimum requirements only and all of the items must be addressed in your Covid - 19 management plan, risk assessment and Covid - 19 policy document.

The index to your Covid - 19 File should contain at least the following:

1. Covid - 19 Management plan
2. Covid - 19 Risk Assessment
3. Covid 19 Policy
7. Toolbox Talks
8. Safe Work Procedures
9. Checklists

4	Employee Screening declarations	***10***	Training Material
5	PPE Issue Register	***11***	Posters
6	Compliance Employees Appointments	***12***	Compliance Officer Appointments

I herewith my signature confirm that I have received this Covid - 19 specification document.

Signature: _____

Date: _____

This specs was developed for Construction sites to assist contractors

End of specification: 2022

End of site specific OHS Specification was compiled by Willem Botha 0609976744 or 012 4921486 April 2021

public works
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Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

Additions to health and safety specifications for all construction sites to include COVID 19

Thohoyandou High Court: Repair and Renovations

Date: July 2022

1. Introduction
2. References
3. Special appointments
4. Workers transport
5. Security/access control/control of visitors onsite
6. Pre-construction evaluation of medical requirements, screening and training
7. Facilities, resources and action required by principal contractor where applicable contractor onsite
8. Required procedures, documentation development and updates
9. Procedures at start during and at end of shift
10. Managing and controlling flammable hazardous chemicals
11. Contractor management
12. Compliance monitoring and discipline
13. Additional resources and recourse management

1. Introduction

COVID 19 Novel Corona virus has changed the world we live in and how we will conduct business activities and life in the future. Due to this it has become necessary to take special precautions, to plan and implement control measures, to prevent further spread of this disease.

These specifications are based on the prevention of persons, objects/tools being contaminated with the virus, infection transmission and specific occupational hygiene practices that focus on the need for employers to implement measures to mitigate or eliminate the transmission of the virus in the workplace.

This document is an addendum to the original project health and safety specification to assist the principal contractor and contractors to protect their workers, and to comply with the interim Regulations that has been gazetted

2. References

The Department of Employment and Labour has appealed to employers to use the prescriptions of the Occupational Health and Safety (OHS) Act of 1993 in governing workplaces in relation to Coronavirus Disease 2019 COVID19 under the National Disaster Act

Department of labour, notice no. 479, 29 April 2020, covid-19, Occupational health and safety measures in workplaces Covid-19 (c19 ohs), directive by the minister of employment and labour in terms of regulation 10 (8) of the regulations issued by the minister of cooperative governance

and traditional affairs in terms of section 27 (2) of the disaster management act, 2002 (act no. 57 of 2002)

The OHS Act read with the Hazardous Biological Agents Regulations requires the employer to provide and maintain as far as is reasonably practicable a working environment that is safe and without risks to the health of employees

Section 8(2)(b) of OHS act *requires steps such as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard before resorting to personal protective equipment (PPE).* However, in the case of COVID19, a combination of controls is required, although the main principle is to follow the hierarchy of controls

However, before the implementation of control measures, current risk assessments need to be reviewed and updated, considering the new hazards posed by exposure to COVID-19 in the workplace. The risk assessment should take the Risk Assessment Guides published online by the National Department of Health into account

3. Special appointments

a. *The employer must appoint a manager (from within the existing structure) to address the concerns of employees and workplace representatives concerning COVID 19*
b. Appointment and training of security personnel and adequate personnel to conduct procedures of screening, isolating, conducting questionnaire and further actions required if person presents positive COVID 19 symptoms

4. Workers transport

a. Where possible the contractors must arrange transport of their employees in line with the travel rules of not more than 70% occupancy and social distancing

b. Where not possible to avoid the use of public transport provide employees with information on the virus and precautions to take during public transport travel:

i. Frequent sanitising
ii. Maintain social distancing (at least 2 m)
iii. Always wear a mask
iv. Coughing, sneezing safe practice and spitting
v. When being coughed or sneezed on, turn face away and do not touch face before hands have been sanitised
vi. Do not travel if experiencing symptoms of infection
vii. Provide employees with CIPC travel certificate

5. Security/access control/control of visitors onsite

a. **Only 1 access point allowed** on site during the Phase lockdown period.

b. A policy of lockdown inside site for the whole shift must be maintained which will mean that employees will not be allowed to exit and re-enter the site during working hours. This will prevent employees from bringing contaminated food or articles onto site and **will have to bring food from home**

c. The principal contractor must enforce strict access control and no person may enter the site except those who have undergone induction training and who is listed on the employee list

d. The only exceptions are persons who have pre-arranged official appointment which has been approved by the project construction manager. This person may not enter the site before they have passed the screening procedure (fever and questionnaire) and thereafter must be escorted by a person designated by the construction manager

e. Biometric or any form of touch access entry is prohibited

f. Delivery vehicle drivers must undergo and pass the full COVID 19 screening procedure or may not leave the cab of the vehicle and wear a face mask

g. Where more than one Principal Contractor operates on site. A meeting must be held with all the Principal Contractors where an access plan must be formulated and **agreed to in writing**, which incorporates the sharing of expenses and other resources.

6. Pre-construction evaluation, screening and training

Principal contractor and contractor's pre-construction requirements:

It is critical that the principal contractor conduct the following preparatory actions before going to site. These actions must be documented and each employee must sign that he/she has undergone this screening and training and understands and procedures

a. **Evaluation**:

i. Employees medical evaluation, ensuring annual medical is valid

ii. Screening:

1. Fever screening
2. **Health questionnaire** (signs and symptoms)
3. Questionnaire of travel during shut down level 4 and exposure
4. Employee practical understanding of:

a. the risks of the virus
b. how do you get contaminated?
c. how do you get infected?
d. signs and symptoms
e. prevention

b. Training program

It is important to understand that workers have been of site for an extended period and which requires that the principal contractor and contractors develop a full risk based induction training and awareness program, policies and procedure for COVID 19 and communicate it with management, employees and contractors which include the following:

i. Employees responsibility to look after their own health and safety and preventing from being infected or infecting other persons
ii. What is COVID 19
iii. How are you infected
iv. Explanation of symptoms and signs (ever, cough, sore throat, redness of eyes or shortness of breath or difficulty in breathing, body aches, loss of smell or loss of taste, nausea, vomiting, diarrhoea, fatigue, weakness or tiredness
v. Incubation period
vi. Explain the risk of underlying conditions, i.e.:

1. People 60 years and older
2. People with chronic lung disease or moderate to severe asthma
3. People who have serious heart conditions
4. People who are immunocompromised
5. People with diabetes
6. People with chronic kidney disease undergoing dialysis
7. People with liver disease

vi. Self-monitoring and reporting of symptoms, possible exposure or infection to company
vii. The importance of being aware of who you have been in contact with during work and after hours to assist with tracking in case of being infected
viii. How to self-isolate
ix. Company COVID sick leave and Temporary Employer Relief Scheme under regulation 10(8) of the Regulations promulgated in terms of section 27(2) of the Disaster Management Act

x. How to prevent infection:

1. Correct methods of sanitising

f. Hands
g. Personal hygiene
h. Site facilities

2. Social distancing
3. Not touching face
4. The correct way to cough or sneeze
5. Correct use, limitations of and disposal of PPE
6. How to protect yourself and family after hours

xi. What to do if employee is not feeling well and are presenting with the symptoms when already at the work-place or before arrival onsite include:

1. Employees

a. If already onsite

i. Immediate reporting to employer
ii. Social distancing and other preventative actions

b. When not onsite yet

i. Do not go to work
ii. Who to contact at your company?
iii. Relevant company contact numbers

2. Principal contractor and contractors

a. Procedures and PPE required when employee presents with symptoms at the site screening and needs to be isolated and tracking of persons in contact with that employee
b. Procedures and care of persons who are in self isolation or being treated at hospital or COVID 19 facility
c. Company and employee return to work after recovery procedures

xii. Updated company COVID 19:

1. SHE plan and risk assessment
2. Policies
3. PPE requirements
4. Method statements & risk assessment
5. Stay at home policy and sick leave
6. Employee assistance/care program

xiii. Include COVID awareness in every day DSTI/permit to work system

7. Facilities, resources and action required by principal contractor where applicable contractor onsite

a. Provide these employees with appropriate PPE for their tasks
b. Prevention of employees having to come into close-proximity (Queuing or bundling together)
c. Method/procedure of providing drinking water that cannot be contaminated with the virus
d. Adequate and appropriate risk-based:

i. PPE
ii. Sanitising/hand washing facilities at entrance, eating areas, offices, kitchens, toilets (Foot pedal hand sanitisers is the preferable option)

iii. Awareness signage and posters

e. Procedures for sanitising site, offices, toilets, eating areas, meeting rooms communal kitchen appliances, printers and telephones
f. Procedures and rules to minimise exposure during:

i. Meetings (Alternates to close contact meetings)
ii. Duration and maximum number of delegates at close contact meetings
iii. Induction, Toolbox talk, DSTI
iv. Sanitising of areas, offices, boardrooms and furniture
v. Communal drinking facility use
vi. Housekeeping and garbage removal

g. Provide an isolation area/tent/room where person can be interviewed and remain until instructions have been received from the COVID 19 control centre on next step to be taken

CORONA 24 Hour HOTLINE 0800029999

8. Required procedures, documentation development and updates

The contractor must develop new and update existing plans, policies, documentation and procedures to include COVID 19

a. She plan and policy
b. Company COVID 19 plans, policies, procedures and programs to include:

i. Prevention, exposure, infection
ii. Social distancing during entering and exiting site, meetings, training
iii. Creating different areas for and staggering start of work and lunch-times, training sessions and effective planning of required staff compliments
iv. Cooperation with local police, clinic, emergency services and notifying them of the project and developing beneficial relationships
v. Engaging with CLO and communities and establish a trust relationship by providing relevant information and possible assistance where possible
vi. Emergencies (mass infections)
vii. Post-infection return to work guideline, which include:

1. minimum medical and practical criteria for return to work
2. medical evaluation by occupational health practitioner

viii. Employee emotional care and assistance during and post infection
ix. Management and disposal of contaminated PPE and equipment
x. Planning to maximise social distancing
xi. Planning of production and progress to optimise the work-force to minimise the amount of persons onsite at one-time
xii. Managing and disposal of biological (Virus) contaminated PPE and other personal waste

xiii. Daily reporting to management of screening results and of persons who were isolated, taken for testing and follow-up
xiv. Reporting of persons who have been confirmed to be infected to company management, department of labour and Health
xv. Contact-tracing of persons who were in contact with a person who have been isolated or who has been confirmed as being infected
xvi. Updated risk assessment to include COVID 19 hasards and risks
xvii. Evaluation of daily screening, reporting to management and if required update procedure and training
xviii. Company policy related to paid sick leave in terms of section 22 of the BCEA illness benefit in terms of clause 4 of the Directive issued on 25 March 2020 on the COVID-19 Temporary Employer Relief Scheme under regulation 10(8) of the Regulations promulgated in terms of section 27(2) of the Disaster Management Act;
xix. Also revise the permit to work where required.

9. Procedures at start during and at end of shift

a. Include conducting and recording information of:

i. Sanitisation

1. At start of shift all persons must sanitise with sanitiser that contains at least 70% alcohol with foot pedal or automatic detection and spray device, no hand contact
2. Site facilities, offices, boardrooms, toilets, eating areas, surfaces
3. Hand and power tools, and other communal equipment to be wiped down

ii. Fever screening and procedure when person has fever

1. Re-do fever screen and if high fever

a. Isolate and questionnaire
b. Procedure if evidence points at infection
c. Contact call centre and follow instructions
d. Also follow company procedure for reporting to management, client and authorities

10. Managing and controlling flammable hasardous chemicals

a. The type of sanitiser used for CIVID 19 must have a minimum of 70% alcohol and it is important that adequate stock is held onsite
b. Due to its high alcohol content it poses a fire risk as well as a possible risk of being used by workers for intoxicating purposes which can lead to poisoning
c. It is therefore particularly important to include these risks into account when the risk assessments is updated
d. The principal contractor and contractors must ensure that they provide a flammable liquid storage facility, considering the quantities they will be storing onsite which conforms with local government fire regulations and GSR 4
e. The storage area must be lockable and issuing and stock levels must be controlled by an appointed competent hasardous chemical substance controller

f. Records of stock levels, issuing and usage must be updated daily and any discrepancies must be reported to management and investigated
g. Decanting procedures must be developed which includes spillage control. Bottles into which it has been decanted into must be marked to clearly show the contents
h. Appropriate and adequate signage must be posted
i. Adequate Alcohol resistant foam or Carbon dioxide (CO2) fire extinguishers must pe appropriately positioned Inspections of the flammable hasardous chemicals store must be conducted at least monthly
j. Inspections of the flammable hasardous chemicals store must be conducted at least monthly
k. First aiders should be trained on the first aid measures as set out in the MSDS

11. Contractor management

It is the responsibility of the principal contractors to ensure that all contractor comply with the requirements of the addition to the original project health and safety specifications

12. Compliance monitoring and discipline

a. Monitoring of compliance is critical to the prevention program and there may be no tolerance of non-compliance
b. Strict appropriate disciplinary action must be instituted against employees, contractors, consultants or any person
c. found in breach of the requirements
d. The client will be responsible for compliance through audits and inspections and evaluation of principal contractors' reports
e. The principal contractor must monitor compliance through inspections and COVID 19 specific audit of:

i. Available equipment
ii. Sanitiser/washing facilities
iii. Sanitising of site facilities
iv. Employee screening
v. Access control
vi. Availability of isolation facilities
vii. Separation and procedures followed when employees present with symptoms
viii. Continues awareness training
ix. Recordkeeping
x. Sub-contractor training and screening records, risk assessments and monitoring

f. Any suspected or confirmed infection or noncompliance with the COVID 19 requirements must be reported to the client health and safety agent with immediate effect
g. A written incident report must be supplied within 24 hours after the incident. If the risk assessment or procedures are required to be reviewed, same will be done within 36 hours.

13. Additional resources and recourse management

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a. It is a fact that finance and budgets of active projects that were shut down due to COVID 19 have approved budgets and available capital projects that are currently running have already been allocated and approved and Therefore funds should be available from the client to pay Principal Contractors/Contractors
b. It is therefore critical that the principal contractor ensure that their payment certificates and related documents are correct and is submitted before deadline dates with their invoices. Many delays in payment from clients are due to incorrect or insufficient documentation that has been submitted late.
c. It is important to understand that the COVID 19 virus has affected all parties and cooperation will increase the probability of completing the project successful
d. It is critical that the client and principal contractor re-negotiate and discuss the project deadlines and budget and agree on solutions to the benefit of all. The impact of screening, site access, delayed delivery of long lead items due to manufacturing constraints and restrictions due to COVID19 legislation must be considered when negotiating the program and deadlines specifically.
e. Clients must not delay payment to principal contractors and principal contractors must do the same with their contractors. Delaying payments will have a snowball effect all the way down to the workers who have in some case already not received salaries or has only received partial payment
f. Businesses most do their utmost to protect the workers who are the most crucial asset of construction
g. Although SMME are businesses in their own right, many of these companies were already struggling financially before lockdown started and the principal contractor could use the assistance of the project CLO to ensure that workers are being paid and if not report it to the principal contractor.
h. Contractor must assist employees with UIF claims.

i. All the above requirement and information must be filtered down to the contractors onsite

Developed by Pieter Herbst Pr CHSA 057/2017

and Willem Botha NDPWI OHS

“Health and safety is not negotiable”

Part C4: Site Information

PG-03.2 (EC) SITE INFORMATION – JBCC 2000 PRINCIPAL BUILDING AGREEMENT (EDITION 6.2 OF MAY 2018)

Project title:	***Thohoyandou High Court: Repairs and Renovations***				
Tender no:	*PLK23/09*	**WCS no:**	*048609*	**Reference no**:	*6054/0070*

C4 Site Information

a) Thohoyandou High Court is situated in Thohoyandou Limpopo Province, Old parliament building.

b) The building is a double storey (ground and first floor)

c) The building is in a government complex, where other departments are located.