

SUPPLY CHAIN MANAGEMENT TRADE & INVESTMENT KWAZULU NATAL



BILLS OF QUANTITIES

with GCC for Construction Works - Second Edition 2010

RETURNABLE DOCUMENT

ONE VOLUME APPROACH

SECTION 1

Eco Park: Fencing and Site Clearance for Plessislaer Site

Project Leader

Trade & Investment KwaZulu Natal
P.O Box 4245
Durban
4001
Tel Number: 031 368 9600
Fax Number: N/A
tenders@tikzn.co.za

Architect

Ukuza Consulting (Pty) Ltd
P.O Box 2274
Westville
4000
Tel Number: 031 265 0444
Fax Number: 086 208 0491
jody@ukuza.co.za

Employer:

(TIKZN)
PO Box 4245
Durban
4001
Tel Number: 031 368 9600

Tender Number: 3410/2026/01
CIDB Grading: 5CE or higher

Document Date: 24 February 2026
Contract Period: 6 Calendar Months

Contracting Party: _____

CIDB Registration number: _____

Central Suppliers Database Registration Number: _____

Eco Park: Fencing and Site Clearance for Plessislaer Site



SECTION 1 - THE TENDER

1. <u>PART T1: TENDER PROCEDURES</u>	<u>Page No.</u>
T1.1 Tender Notice and Invitation to Tender	5
T1.2 Tender Data	10
T1.3 Annexure C - Standard Conditions of Tender	15
2. <u>PART T2: RETURNABLE DOCUMENTS</u>	
T2.1 List of Returnable Documents	25

SECTION 2 - THE CONTRACT

3. <u>PART C1: AGREEMENT AND CONTRACT DATA</u>	
C1.1 Form of Offer and Acceptance	63
C1.2 Contract Data	64
C1.3 Form of Guarantee	73
4. <u>PART C2: PRICING DATA</u>	
C2.1 Pricing Instructions	78
C2.2 Preliminaries for GCC for Construction Works (Second Edition 2010)	82
C2.3 Bills of Quantities	83
5. <u>PART C3: SCOPE OF WORKS</u>	
C3.1 Scope of Works	84
C3.2 Specification for HIV/AIDS awareness	92
C3.3 HIV/STI Compliance report	94
6. <u>PART C4: SITE INFORMATION</u>	
C4.1 Site Information	97
7. <u>DRAWINGS</u>	
C5.1 List of Drawings / Annexures	100

ANNEXURES

Annexure 1	Model Preambles for Trades 2008
Annexure 2	Map of Tender submission location
Annexure 3	Joint Venture Agreement
Annexure 4	Builders Lien Agreement
Annexure 5	Geotechnical Investigation Report
Annexure 6	The Terrestrial Biodiversity Compliance Statement
Annexure 7	Employment Contract
Annexure 8	Attendance Register
Annexure 9	Site Location
Annexure 10	Architect Drawings
Annexure 11	Civil and Structural Engineer Drawings

IMPORTANT NOTICE TO TENDERERS

Any reference to words Tender or Tenderer herein and/or in any other documentation shall be construed to have the same meaning as the words Tender or Tenderer. These forms are for internal and external use for the Trade and Investment KwaZulu-Natal (TIKZN)

"Quality" shall mean totality of features and characteristics of a product or service that bears on the ability of the product or service to satisfy stated or implied needs.

No alternative Tenders will be accepted.

The Total (Including Value Added Tax) on the Final Summary of the Bill of Quantities must be carried to the "Offer" part only of the Form of Offer and Acceptance - T2.1.16

"Enterprise" shall mean the legal Tendering Entity or Tenderer who, on acceptance of the Offer, would become the contractor"

Eco Park: Fencing and Site Clearance for Plessislaer Site

THE TENDER

Eco Park: Fencing and Site Clearance for Plessislaer Site

PART T1. - TENDER PROCEDURES

Eco Park: Fencing and Site Clearance for Plessislaer Site

T1.1 - TENDER NOTICE AND INVITATION TO TENDER

T1.1 TENDER NOTICE AND INVITATION TO TENDER

TRADE & INVESTMENT KWAZULU-NATAL INVITES TENDERS FOR THE PROVISION OF:

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site		
Tender no:	3410/2026/01		
Advertisement date:	24 February 2026	Closing date:	18 March 2026
Closing time:	12:00	Validity period:	84 Calendar Days

It is estimated that tenderers must have a CIDB contractor grading designation of 5CE or higher. No alternative Class of work, as referred to in Clause 25(3)(a)(i) of the CIDB Regulations, as amended, is anticipated for this project.

Only Tenderer's who are responsive to the following responsiveness criteria are eligible to submit Tenders:

<input checked="" type="checkbox"/>	Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations for a : 5CE or higher, class of construction work, are eligible to have their Tenders evaluated.
<input checked="" type="checkbox"/>	Joint ventures are eligible to submit tenders provided that: <ol style="list-style-type: none"> 1 every member of the joint venture is registered with the CIDB; 2 the lead partner has a contractor grading designation in the 5CE or higher, class of construction work; or not lower than one level below the required grading designation in the class of works construction works under considerations and possess the required recognition status 3 the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a : 5CE or Higher or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations.
<input checked="" type="checkbox"/>	Tender document must be properly received on or before the tender closing date and time specified on the invitation, fully completed and signed in ink (All as per Standard Conditions of Tender).
<input checked="" type="checkbox"/>	Submission of Compulsory Returnable Schedules documents as per List of returnable documents.
<input checked="" type="checkbox"/>	Complete priced Bill of Quantities to be submitted on the day of the Tender closing date.
<input checked="" type="checkbox"/>	Tenderers must meet the minimum qualifying score for functionality criteria first before they can be considered for price and preference by means of specific goals

Please note the following for POPIA:

By submitting this tender, I hereby acknowledge consent that the Trade & Investment KwaZulu Natal, may from time to time, collect/store/use/destroy/delete/share or otherwise process my Company and Director's/Shareholders personal information as the context or circumstances may require and as contemplated in terms of POPIA. (TICK)

THE FOLLOWING PARTICULARS MUST BE FURNISHED (FAILURE TO DO SO MAY RESULT IN YOUR TENDER BEING DISQUALIFIED)

Name of Tenderer: _____

Postal Address: _____

Street Address: _____

Telephone Number CODE _____ NUMBER _____

Cell phone Number: _____

Facsimile Number: CODE _____ NUMBER _____

E-mail Address: _____

VAT Registration Number: _____

TAX COMPLIANCE STATUS (TCS) PIN TO VERIFY ON LINE COMPLIANCE SUPPLIER STATUS VIA SARS e-FILING (T2.19) YES or NO

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS / SERVICES / WORKS OFFERED? [If yes, enclose proof] YES or NO

This tender will be evaluated according to the preferential procurement model in the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2022:

80/20 Preference point scoring system

NOTE Refer to T2.1.7 - Preference Points Regulation

Specific Goals:	20 Points
Price:	80 points

1. The Specific Goal/s Allocated Points in terms of this tender:

Preference points system:

Preferences are offered to Tenderer's who have attained points for the specific goals in accordance with the table below; Documentary Proof required to satisfy the points claimed are also indicated in the table below:

No	Specific Goal	Number of Points Allocated
1	Ownership by Black People Documentary Proof Required: 1) Sworn Affidavit signed and dated by Commissioner of Oaths / B-BBEE Certificate 2) CIPC registration (Companies and Intellectual Property Commission) / CSD report.	51% or more 5
2	Ownership by South African Women Owned Enterprises Documentary Proof Required: 1) Sworn Affidavit signed and dated by Commissioner of Oaths / B-BBEE Certificate 2) CIPC registration (Companies and Intellectual Property Commission) / CSD report.	51% or more 3
3	Promotion of Enterprises Located in KwaZulu Natal for work to be done or services to be rendered. One of the following Documentary Proof Required: 1) Utility Bill / Lease agreement 2) Letter from the ward councillor 3) Letter from the Tribal Authority: Chief, InDuna or Headman	KwaZulu-Natal 12

Total must equal 20 points		20	Points

Notes:

- 1 The successful Tenderer will be required to fill in and sign a written GCC Second Edition 2010 Contract.
- 2 Tenderers should ensure that Tenders are delivered timeously to the correct address. If the Tender is late, it will not be accepted for consideration.
- 3 The requirements in respect of the application of 80/20 preference points scoring system.
- 4 The Tender box is generally open during official working hours.
- 5 All Tenders must be submitted on the official forms – (Not to be re-typed)
- 6 THIS TENDER IS SUBJECT TO PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (GCC Second Edition 2010) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT
- 7 **The documentary proof required to satisfy the points claimed for specific goals in terms of this tender, are duly indicated on the table (1) above.**

TENDER DOCUMENTS:

The bid document can be downloaded free of charge from the E-tender portal.

COMPULSORY CLARIFICATION MEETING

A Compulsory clarification Meeting with representatives of the Employer will take place as follows:

270 Jabu Ndlovu Street, Pietermaritzburg, LED Boardroom. Thereafter, proceeding to site.

on: **Tuesday, 03 March 2026** at **11:00**

QUERIES REGARDING THE TENDERING PROCEDURE OR TECHNICAL INFORMATION MAY BE DIRECTED TO:

Project Manager:	Fathima Amra	Telephone no:	031 368 9600
E-mail:	tenders@tikzn.co.za		

DEPOSIT / RETURN OF TENDER DOCUMENTS:

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

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

All tenders must be submitted on the official forms – (not to be re-typed)

**TENDER
DOCUMENTS MAY
BE:**

**DEPOSITED IN THE TENDER
BOX AT:**

Trade & Investment KwaZulu Natal

Trade & Investment House

1 Arundel Close

Kingsmead Office Park

Durban

4001

Eco Park: Fencing and Site Clearance for Plessislaer Site

T1.2 - TENDER DATA

T1.2 TENDER DATA																																																	
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	<p>The conditions of Tender are the Standard Conditions of Tender as contained in Annexure C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts as per Board Notice 423 of 2019 in Government Gazette 42622 of 8 August 2019 as amended from time to time. (see www.cidb.org.za) Refer to Conditions of Tender as bound into this document.</p> <p>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.</p> <p>Each item of data given below is cross-referenced to the clause marked "C" in the above mentioned Standard Conditions of Tender.</p>																																																
C.1.1	<p>The Employer is: Trade and Investment KwaZulu-Natal (TIKZN) - Province of KwaZulu-Natal</p> <p>For this contract the <u>single volume</u> approach is adopted.</p> <p>This procurement document has been formatted and compiled under the headings for a single volume approach as contained in table 5 of the CIDB's "Standard for Uniformity in Engineering and Construction Works Contracts."</p> <p>The list of Returnable Documents identifies which of the documents a Tenderer must complete when submitting a Tender. The Tenderer must submit his/her Tender by completing the Returnable Documents including the priced Final Summary of the Bills of Quantities, signing the "Offer" section in the "Form of Offer and Acceptance" and delivering the whole of the procurement document back to the Client Office (TIKZN) bound up as it was when it was received.</p>																																																
C.1.2	<p>The single volume procurement document issued by the Employer comprises the following:</p> <p>TENDER</p> <p>Part T1: Tendering procedures</p> <table border="1"> <tr> <td>T1.1 -</td> <td>Tender Notice and Invitation to Tender</td> </tr> <tr> <td>T1.2 -</td> <td>Tender Data</td> </tr> <tr> <td>T1.3 -</td> <td>Annexure C - Standard Conditions of Tender</td> </tr> </table> <p>Part T2: Returnable documents</p> <table border="1"> <tr> <td>T2.1 -</td> <td>List of returnable documents</td> </tr> </table> <p>CONTRACT</p> <p>Part C1: Agreements and Contract Data</p> <table border="1"> <tr> <td>C1.1 -</td> <td>Form of Offer and Acceptance</td> </tr> <tr> <td>C1.2 -</td> <td>Contract Data</td> </tr> <tr> <td>C1.3 -</td> <td>Form of Guarantee</td> </tr> </table> <p>Part C2: Pricing data</p> <table border="1"> <tr> <td>C2.1 -</td> <td>Pricing Instructions</td> </tr> <tr> <td>C2.2 -</td> <td>Bills of Quantities</td> </tr> </table> <p>Part C3: Scope of works</p> <table border="1"> <tr> <td>C3.1 -</td> <td>Scope of Works</td> </tr> <tr> <td>C3.2 -</td> <td>Specification for HIV/AIDS awareness</td> </tr> <tr> <td>C3.3 -</td> <td>HIV/STI Compliance report</td> </tr> <tr> <td>C3.4 -</td> <td>Project Specific Construction Safety, Health and Environmental Specification</td> </tr> <tr> <td>C3.5 -</td> <td>Supplementary Preambles</td> </tr> </table> <p>Part C4: Site information</p> <table border="1"> <tr> <td>C4.1 -</td> <td>Site Information</td> </tr> </table> <p>Part 5: List of Drawings/Annexure's</p> <table border="1"> <tr> <td>C5.1 -</td> <td>List of Drawings / Annexures</td> </tr> <tr> <td>C5.2 -</td> <td>Model Preambles for Trades 2008</td> </tr> <tr> <td>C5.3 -</td> <td>Map of Tender submission location</td> </tr> <tr> <td>C5.4 -</td> <td>Joint Venture Agreement</td> </tr> <tr> <td>C5.7 -</td> <td>Builders Lien Agreement</td> </tr> <tr> <td>C5.8 -</td> <td>Geotechnical Investigation Report</td> </tr> <tr> <td>C5.11</td> <td>Employment Contract</td> </tr> <tr> <td>C5.12</td> <td>Attendance Register</td> </tr> </table>			T1.1 -	Tender Notice and Invitation to Tender	T1.2 -	Tender Data	T1.3 -	Annexure C - Standard Conditions of Tender	T2.1 -	List of returnable documents	C1.1 -	Form of Offer and Acceptance	C1.2 -	Contract Data	C1.3 -	Form of Guarantee	C2.1 -	Pricing Instructions	C2.2 -	Bills of Quantities	C3.1 -	Scope of Works	C3.2 -	Specification for HIV/AIDS awareness	C3.3 -	HIV/STI Compliance report	C3.4 -	Project Specific Construction Safety, Health and Environmental Specification	C3.5 -	Supplementary Preambles	C4.1 -	Site Information	C5.1 -	List of Drawings / Annexures	C5.2 -	Model Preambles for Trades 2008	C5.3 -	Map of Tender submission location	C5.4 -	Joint Venture Agreement	C5.7 -	Builders Lien Agreement	C5.8 -	Geotechnical Investigation Report	C5.11	Employment Contract	C5.12	Attendance Register
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	Only the complete Service as per the Bills of Quantities
C.2.13.2	Tenderers are to ensure that their company details appear on the entire relevant Tender documentation and must be legible.
C.2.13.3	Part of each tender offer communicated on paper shall be submitted as an original must be clearly marked with the tender information and company details.
C.2.13.4	The second sentence shall read as follows "The Employer will hold all authorised signatories jointly and severally liable on behalf of the tenderer". Tenderers proposing to contract as a Joint Venture shall submit a valid Joint Venture Agreement before the Joint Venture's offer could be accepted. Individuals, Partnerships and Companies proposing to contract as a party to a Joint Venture shall be jointly and severally liable on behalf of the Joint Venture.
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 T1.1 Tender Notice and Invitation to Tender .
	A Open Procedure will be followed
C.2.15	The closing time for submission of tender offers is as per T1.1 Tender Notice and Invitation to Tender .
C.2.16	The tender offer validity period is as per T1.1 Tender Notice and Invitation to Tender .
C.2.17	Sub-clause C2.17 does not preclude the negotiation of the final terms of the contract with the preferred tenderer, following a competitive selection process, should the Employer elect to do so and provided that the competitive position of the preferred tenderer is not affected.
	The tenderer is to submit the Priced Bills of Quantities with the Returnable's at the closing of the tender.
C.2.19	Access shall be provided for inspections, tests and analysis as may be required by the Employer.
C.2.22	Tenderers do not have to return all retained tender documents within 28 days after expiry of the Tender validity period.
	Tenderers are to refer to List of Returnable Schedules and Scope of Works to establish what is required to be submitted with this tender.
C.3.4	The location for opening of the tender offers, immediately after the closing time thereof shall be at:
C.3.8	<p>The employer must determine, on opening and before detailed valuation, whether each Tender offer properly received:</p> <ol style="list-style-type: none"> complies with the requirements of the Conditions of Tender. has been properly and fully completed and signed, and is responsive to the other requirements of the Tender documents. <p>A responsive tender is one that conforms to all the terms, conditions and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:</p> <ol style="list-style-type: none"> detrimentally affect the scope, quality, or performance of the Works, services or supply identified in the Scope of Work or significantly change the Employers or the Tenderers risks and responsibilities under the contract, or affect the competitive position of other Tenderers presenting responsive tenders, if it were to be rectified. <p>Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.</p>

C.3.13	<p>Tender offers will only be accepted if:</p> <ul style="list-style-type: none"> (a) the Tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation is required for this tender and the Tenderer has submitted a CIDB certificate of registration which clearly indicates the status "Active" (b) the Tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderer's ability to perform to the contract in the best interests of the employer or potentially compromise the Tender process. (c) 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; and (d) the Tenderer has not: <ul style="list-style-type: none"> i) abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect. (e) the Tenderer is to submit documents: <ul style="list-style-type: none"> i) the Unemployment Insurance Fund (UIF) (Registration Certificate / Compliance Certificate / Employer Statement of Account / UIF Exemption if Applicable); and ii) Letter of Good Standing with Compensation Commissioner (COIDA / FEMA) (f) the Tenderer submitted Authority to Sign the tender. (g) the Tenderer submitted Financial standing & other resources of Business Declaration. (h) the Tenderer signed the Form of Offer that is part of the Form of Offer and Acceptance. (i) the Tenderer submit Final Summary of Bill of Quantities at tender closing. (j) the Tenderer submitted Bidder's Disclosure. (k) the Tenderer submitted Site Inspection Certificate from the Compulsory Briefing Meeting <p>Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful Tenderer as described in the form of offer and acceptance.</p>
C.3.15	Tenderers are informed that any formal dispute shall be resolved by being referred to Arbitration only.
C.3.17	Provide to the successful Tenderer one copy of the signed contract document and one copy of an unpriced bills of quantities

Eco Park: Fencing and Site Clearance for Plessislaer Site

T1.3 - Annexure C - Standard Conditions of Tender

T1.3 - Annexure C - Standard Conditions of Tender

Note: Where this document refers to Bid or Bidder it shall be read as tender or tenderer

C.1 General

C.1.1

Actions

C.1.1.1

The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in C.2 and C.3, timeously and with integrity, and behave equitably, honestly and transparently and comply with all legal obligations and not engage in anticompetitive practices.

C.1.1.2

The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderer's shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process or as soon as they become aware of such conflict, and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1)

A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2)

Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

C.1.1.3

The employer shall not seek and the tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

C.1.2

Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the **tender data**.

C.1.3

Interpretation

C.1.3.1

The **tender data** and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

C.1.3.2

These conditions of tender, the **tender data** and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

C.1.3.3

For the purposes of these conditions of tender, the following definitions apply:

- a) **conflict of interest** means any situation in which:
 - i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
 - ii) an individual or tenderer is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) incompatibility or contradictory interests exist between an employee and the tenderer who employs that employee.
- b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;
- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels.

C.1.4

Communication and employer's agent

Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be read, copied and recorded. Communication shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the **tender data**.

- C.1.5 Cancellation and Re-Invitation of Tenders**
- C.1.5.1** An employer may, prior to the award of the tender, cancel a tender if-
- a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;
 - b) funds are no longer available to cover the total envisaged expenditure; or
 - c) no acceptable tenders are received.
 - d) there is a material irregularity in the tender process.
- C.1.5.2** The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised.
- C.1.6 Procurement procedures**
- C.1.6.1 General**
- Unless otherwise stated in the **tender data**, a contract will, subject to C.3.13, be concluded with the tenderer who in terms of C.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.
- C.1.6.2 Competitive negotiation procedure**
- C.1.6.2.1** Where the **tender data** requires that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.
- C.1.6.2.2** All responsive tenderers, or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the **tender data**, shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.
- C.1.6.2.3** At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their tender offer based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.
- C.1.6.2.4** The contract shall be awarded in accordance with the provisions of C.3.11 and C.3.13 after tenderers have been requested to submit their best and final offer.
- C.1.6.3 Proposal procedure using the two stage-system**
- C.1.6.3.1 Option 1**
- Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the **tender data**, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

F.1.6.3.2

Option 2

C.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

C.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the **tender data**, and award the contract in terms of these conditions of tender.

C.2 Tenderer's obligations

C.2.1 Eligibility

C.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the **tender data** and the tenderer, or any of his principals, is not under any restriction to do business with employer.

C.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

C.2.2 Cost of tendering

C.2.2.1 Accept that, unless otherwise stated in the **tender data**, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

C.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

C.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

C.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

C.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

C.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension to the closing time stated in the **tender data**, in order to take the addenda into account.

C.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the **tender data**.

C.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the **tender data**.

C.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the **contract data**. The tenderer is advised to seek qualified advice regarding insurance.

C.2.10 Pricing the tender offer

C.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT)), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the **tender data**.

C.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

C.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the **contract data**.

C.2.10.4 State the rates and prices in Rand unless instructed otherwise in the **tender data**. The conditions of contract identified in the contract data may provide for part payment in other currencies.

C.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.

C.2.12 Alternative tender offers

C.2.12.1 Unless otherwise stated in the **tender data**, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

C.2.12.2 Accept that an alternative tender offer must be based only on the criteria stated in the **tender data** or criteria otherwise acceptable to the employer.

C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

C.2.13.1 Submit one tender offer only, either as single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the **contract data** and described in the **scope of works**, unless stated otherwise in the **tender data**.

C.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

C.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the **tender data**, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

C.2.13.4 Sign the original and all copies of the tender offer where required in terms of the **tender data**. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

C.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the **tender data**, as well as the tenderer's name and contact address.

C.2.13.6 Where a two-envelope system is required in terms of the **tender data**, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the **tender data**, as well as the tenderer's name and contact address.

C.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the **tender data**.

C.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

C.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the **tender data**.

C.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.

C.2.15 Closing time

C.2.15.1 Ensure that the employer receives the tender offer at the address specified in the **tender data** not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

C.2.15.2 Accept that, if the employer extends the closing time stated in the **tender data** for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

C.2.16 Tender offer validity

C.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the **tender data** after the closing time stated in the **tender data**.

C.2.16.2 If requested by the employer, consider extending the validity period stated in the **tender data** for an agreed additional period with or without any conditions attached to such extension.

C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period lapses before the employer evaluating the tender offer(s), the contractor reserves the right to review the price based on Consumer Price Index (CPI)

C.2.16.4 Where a tender submission is to be substituted, a tenderer must submit a substitute tender in accordance with the requirements of C.2.13 with the packages clearly marked as "SUBSTITUTE".

C.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause C.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.

C.2.18 Provide other material

C.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employers request, the employer may regard the tender offer as non-responsive.

C.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

C.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the **tender data**.

C.2.20 Submit securities, bonds and policies

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the **contract data**.

C.2.21 Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

C.2.22 Return of other tender documents

If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the **tender data**.

C.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the **tender data**.

C.3 The employer's undertakings

C.3.1 Respond to request from the tenderer

C.3.1.1 Unless otherwise stated in the **tender data**, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the **tender data** and notify all tenderers who collected tender documents.

C.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

- a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
- b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
- c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) days before the tender closing time stated in the **tender data**. If, as a result a tenderer applies for an extension to the closing time stated in the **tender data**, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.3.3 Return late tender offers

Return tender offers received after the closing time stated in the **tender data**, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

C.3.4 Opening of tender submissions

C.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the **tender data**. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

C.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the **tender data**, the name of each tenderer whose tender offer is opened and, where applicable, the total of his/her prices.

C.3.4.3 Make available the record outlined in C.3.4.2 to all interested persons upon request.

C.3.5 Two-envelope system

C.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderer's agents who choose to attend at the time and place stated in the **tender data** and announce the name of each tenderer whose technical proposal is opened.

C.3.5.2 Evaluate the functionality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the **tender data**, and announce the score obtained for the technical proposals and the total price and any points claimed on BBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

C.3.6 Non-disclosure

Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

C.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

C.3.8 Test for responsiveness

C.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the tender documents.

C.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

- a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or
- c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

C.3.9 Arithmetical errors, omissions and discrepancies

- C.3.9.1** Check Responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.
- C.3.9.2** Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with C.3.11 for:
 - a) the gross misplacement of the decimal point in any unit rate;
 - b) omissions made in completing the pricing schedule or bills of quantities; or
 - c) arithmetic errors in:
 - i) line items totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - ii) the summation of the prices.
- C.3.9.3** Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices
- C.3.9.4** Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:
 - a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
 - b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

C.3.10 Clarification of a tender offer

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

C.3.11 Evaluation of tender offers

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer's obligations in submitting a tender and the employer's undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	Qualitative interpretation of goal
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.

The activities associated with evaluating tender offers are as follows:

- a) Open and record tender offers received
- b) Determine whether or not tender offers are complete
- c) Determine whether or not tender offers are responsive
- d) Evaluate tender offers
- e) Determine if there are any grounds for disqualification
- f) Determine acceptability of preferred tenderer
- g) Prepare a tender evaluation report
- h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

C.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the **contract data**, require the employer to provide.

C.3.13 Acceptance of tender offer

Accept tender offer, if in the opinion of the employer, it does not present any risk and only if the tenderer:

- a) Is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- c) has the legal capacity to enter into the contract,
- d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing;
- e) complies with the legal requirements, if any, stated in the **tender data**, and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

C.3.14 Prepare contract documents

C.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents, and
- c) other revisions agreed between the employer and the successful tenderer.

C.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

C.3.15 Complete Adjudicator's Contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

C.3.16 Registration of the Award

An Employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the cidb Register of Projects.

C.3.17 Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the tender data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

C.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.

Eco Park: Fencing and Site Clearance for Plessislaer Site

PART T2 - RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

Project			
Eco Park: Fencing and Site Clearance for Plessislaer Site			
Project	Fathima Amra	Tender no:	3410/2026/01
T2.1.1	Authority to Sign Tender (Where applicable)		26
T2.1.2	Authority for Consortia or Joint Venture's to Sign Tender (Where applicable)		27
T2.1.3	Special Resolution of Consortia or Joint Venture's (Where applicable)		29
T2.1.4	Joint Venture Involvement Declaration (Where applicable)		32
T2.1.5	Capacity of Tenderer		34
T2.1.6	Financial Standing and other resources of Business Declaration		37
T2.1.7	Preference Points Claim Form		38
T2.1.8	Site Inspection Meeting Certificate		40
T2.1.9	Bidder's Disclosure - SBD 4		41
T2.1.10	Record of Addenda to Tender Documents		45
T2.1.11	Proof of Working Capital of At Least 15% of the Project Value		46
T2.1.12	Contractor's Safety, Health and Environmental Declaration		47
T2.1.13	Compulsory Enterprise Questionnaire		48
T2.1.14	Tax Compliance Status (TCS) PIN to verify on line Compliance Supplier Status via e-Filing		49
T2.1.15	Proof of Good Standing With the Compensation Commissioner		50
T2.1.16	Form of Offer and Acceptance (Bound into Section 1 of 2)		51
T2.1.17	Copy of Proof of Unemployment Insurance Fund		53
T2.1.18	Proof of CIDB Registration Number		54
T2.1.19	OHSE Plan Structure and Baseline Risk Assessment		55
T2.1.20	Functionality Criteria (For information purposes only where the evidence is required for substantiating the claim for points)		56
T2.1.21	Invitation to Tender - SBD 1		57

T2.1.1 AUTHORITY TO SIGN TENDER

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 (town): _____ on (date): _____

RESOLVED that:

1. The Enterprise submits a Tender to Trade & Investment KwaZulu Natal in respect of the following project:

Eco Park: Fencing and Site Clearance for Plessislaer Site

Tender Number: **3410/2026/01**

2.

*Mr./Mrs./Ms: _____

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

and who will sign as follows: _____ (Authorised Signatory)

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

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
7			
8			

Note:

1. * Delete which is not applicable.
2. NB. This resolution / Power of Attorney must be signed by all the Directors / Members / Partners of the Legal Tendering Enterprise authorising the Representative to make this Offer.
3. Should the number of Directors / Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.
4. In the case of the tendering Enterprise being a Close Corporation, a **copy of the Founding Statement** of such corpora - tion must be attached to this tender.

ENTERPRISE STAMP (If Any)

T2.1.2 AUTHORITY FOR CONSORTIA OR JOINT VENTURES TO SIGN TENDER

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 (town): _____ on (date): _____

RESOLVED that:

1. The Enterprise submits a 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 Trade and Investment KwaZulu-Natal (TIKZN) in respect of the following project:

Eco Park: Fencing and Site Clearance for Plessislaer Site

Tender Number: **3410/2026/01**

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: _____

_____ (Postal Code)

Postal Address: _____

_____ (Postal Code)

Telephone number: (Dialling Code followed by number) _____

Fax number: (Dialling Code followed by number) _____

Email Address : _____

***BOARD OF DIRECTORS / MEMBERS / PARTNERS in Consortium of Joint Venture**

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Note:

- * Delete which is not applicable.
- NB. This resolution / Power of Attorney must be signed by all the Directors / Members / Partners of the Tendering Enterprise.
- 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 (If Any)

<u>Deemed to satisfy joint venture arrangements</u>	<u>Designation</u>	
Grading 2 + Grading 2 + Grading 2	= 3	Tenderers who envisage entering into a Joint Venture shall complete a submit a Joint Venture Agreement (see copy of CIDB's agreement elsewhere in this document) with this Tender. THE CIDB JOINT VENTURE GRADING DESIGNATION CALCULATOR sums the capacity of all joint venture partners and calculates a grading designation for the joint venture
Grading 3 + Grading 3 + Grading 3	= 4	
Grading 4 + Grading 4	= 5	
Grading 4 + Grading 3 + Grading 3	= 5	
Grading 5 + Grading 5	= 6	
Grading 5 + Grading 4 + Grading 4	= 6	
Grading 6 + Grading 6	= 7	
Grading 6 + Grading 5 + Grading 5	= 7	
Grading 7 + Grading 7 + Grading 7	= 8	
Grading 8 + Grading 8 + Grading 8	= 9	

T2.1.3 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 tender for the project mentioned below: *(legally correct full names and registration numbers, of the Enterprises forming a Consortium/Joint Venture)*

2.

3.

4.

5.

6.

7.

8.

held at: _____ (place) on _____ (date)

RESOLVED that:

- A. The above-mentioned Enterprises submits a Tender in Consortium/Joint Venture to the Trade and Investment KwaZulu-Natal (TIKZN) in respect of the following project:

Eco Park: Fencing and Site Clearance for Plessislaer Site

Tender Number: **3410/2026/01**

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 Tender, and any and all other documents and/or correspondence in connection with and relating to the Tender, as well as to sign any Contract, and any and all documentation, resulting from the award of the Tender 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 Principal Agent/Engineer 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 Employer, cede any of its rights or assign any of its obligations under the consortium/joint Venture and of the Employer, cede any of its rights or assign any of its obligations under the consortium/joint venture agreement in relation to the Contract with the Employer 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 Principal Agent/Engineer in respect of the project under item A above:

Physical address: _____

_____ (Postal Code)

Postal Address: _____

_____ (Postal Code)

Telephone number: (Dialling Code followed by number) _____

Fax number: (Dialling Code followed by number) _____

Email Address : _____

***BOARD OF DIRECTORS / MEMBERS / PARTNERS in Consortium of Joint Venture**

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Note:

1. * Delete which is not applicable.
2. **NB.** This resolution / Power of Attorney must be signed by all the Duly Authorised Representatives of the Legal Entities to the Consortium/Joint Venture submitting this Tender.
3. Should the number of Duly Authorised Representatives of the Legal Entities joining forces in this Tender exceed the space available above, additional names and signatures must be supplied on a separate page.
4. Resolutions, duly completed and signed, from the separate Enterprises who participate in this Consortium/Joint Venture must be attached to the Special Resolution.

T2.1.4 JOINT VENTURES INVOLVEMENT DECLARATION

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

DECLARATION RELATING TO A TENDER SUBMITTED BY A JOINT VENTURE :

I/We the undersigned parties do hereby declare that our respective involvement in the Works, of which I/we tender by Joint Venture, would be as follows :-

Party No. 1	
CENTRAL SUPPLIERS DATABASE REGISTRATION NO:	
Tenderers CIDB REGISTRATION NUMBER:	
Name	
Address	
Percentage involvement	%

Party No. 2	
CENTRAL SUPPLIERS DATABASE REGISTRATION NO:	
TENDERERS CIDB REGISTRATION NUMBER:	
Name	
Address	
Percentage involvement	%

Party No. 3	
CENTRAL SUPPLIERS DATABASE REGISTRATION NO:	
Tenderers CIDB REGISTRATION NUMBER:	
Name	
Address	
Percentage involvement	%

T2.1.5 CAPACITY OF TENDERER

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

1. **WORK CAPACITY:** (The Tenderer is requested to furnish the following capacity particulars and to attach additional pages if more space is required. Failure to furnish the particulars may result in the Tender being disregarded.)

1.1. **Artisans and Employees:** (*Artisans and Employees to be, or are, employed for this project*)

Categories of Employee - Key Personnel (part of Business Enterprise)	Professional Registration No.	Date of Employment	Number
Site Agent			
Project Manager			
Foreman			
Quality Control & Safety Officer-Construction Supervisor			
Artisans			
Unskilled employees			
Others			

1.2. **Provide full particulars of the following Assets:** (*Assets owned and to be hired - Indicate owned assets*)

Machinery	Plant	Equipment	Vehicles

1.3. **Workshops:**

Address of Main Workshop:	Address of Regional Workshop (If Applicable):

2.2. Current Government sector projects: (List the 5 projects closest to the contractor grading designation of this project)

1	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
2	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
3	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
4	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
5	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	

2.3. Previously completed projects: (List the 5 projects closest to the contractor grading designation of this project)

1	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
2	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
3	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
4	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
5	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	

Name of Tenderer	Signature of authorised representative	Date

T2.1.6 FINANCIAL STANDING AND OTHER RESOURCES OF BUSINESS DECLARATION

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

- (a) Based on the track record determined on the Minimum Average Annual Turnover coupled to the assessed Works Capabilities of Contracting Enterprises, the Construction Industry Development Board (CIDB) awards Grading Designations and accordingly registers it on the system.
- (b) However, it regularly occurs that a Contractor will at the same time submit tenders for a number of projects that are advertised during an overlapping period. Moreover, the Contractor may be busy with a Contract that is of the registered CIDB Grading Designation (value) or is even attending to a number of smaller valued Contracts.
- (c) It therefore becomes the prerogative of a Tenderer in such instances to prove to the Department that the Enterprise has the capacity in every respect to attend to more than one (1) contract at a time.
- (d) A Tenderer who wishes to be considered for this tender Contract award, over and above other tenders that they have submitted, shall submit when requested by TIKZN the necessary proof that:
 - (i) he/she has access to additional finance (inclusive of a PERFORMANCE GUARANTEE BY A REGISTERED FINANCIAL INSTITUTION),
 - (ii) he/she has additional Human Resources available to successfully complete this project.
 - (iii) he/she has adequate Equipment, Plant and Machinery that all of the above can, undoubtedly, be sourced for this tender. (Please submit to TIKZN the name and contact details of the supplier if the Tenderer is going to hire Equipment, Plant or Machinery, when requested.)
- (e) Tenderer to submit their latest 3 months bank statements with the returnable documents.

I, the undersigned,

(name of person authorized to sign on behalf of the Tenderer)

understand that it is the responsibility of the Tenderer to prove and provide when requested by TIKZN, evidence of the good Financial Standing of the Business to complete the Contract successfully.

Furthermore, it is understood that failure to provide when requested by TIKZN, at least the information as stated in paragraphs (d)(i)(ii) AND (iii) above will not enable the Evaluation Team to assess the CURRENT financial standing of the Business and the failure to provide said information when requested will, therefore, invalidate the Tender.

I accept and understand that Trade & Investment KwaZulu Natal as representative in this tender, may act against me and the Tenderer, jointly and severally, should this declaration and/or any information provided be found to be false.

Duly signed at..... on this the..... day of..... 20..

Full Name of Signatory

Name of Enterprise

Capacity of Signatory

Signature of authorised representative

T2.1.7 PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

Project Title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender Number:	3410/2026/01

SBD 6.1

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

1.2 To be completed by the organ of state

(delete whichever is not applicable for this tender).

- a) The applicable preference point system for this tender is the 80/20 preference point system.
- b) The 80/20 preference point system will be applicable in this tender.

1.3 100 Points for this tender shall be awarded for:

- (a) Price (80 Points); and
- (b) Specific Goals (20 Points).

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a 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 PREFERENCE POINT SYSTEMS

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

80/20

$$P_s = 80(1 - (P_t - P_{min}) / (P_{max} - P_{min}))$$

Where

- P_s = Points scored for price of tender under consideration
- P_t = Price of tender under consideration
- P_{min} = 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 points is allocated for price on the following basis:

80/20

$$P_s = 80(1 + (P_t - P_{max}) / (P_{max} - P_{min}))$$

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 below 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 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 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 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 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 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 (80/20 system) (to be completed by the Organ of State)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Ownership by Black People			
Documentary Proof Required: 1) Sworn Affidavit signed and dated by Commissioner of Oaths / BBBEE Certificate 2) CIPC registration (Companies and Intellectual Property Commission) / CSD report.	51% or more	5	
Ownership by South African Women Owned Enterprises			
Documentary Proof Required: 1) Sworn Affidavit signed and dated by Commissioner of Oaths / B-BBEE Certificate 2) CIPC registration (Companies and Intellectual Property Commission) / CSD report.	51% or more	3	
Promotion of Enterprises Located in KwaZulu Natal for work to be done or services to be rendered.			
One of the following Documentary Proof required: 1) Utility Bill / Lease agreement 2) Letter from the ward councillor 3) Letter from the Tribal Authority: Chief, InDuna or Headman	KwaZulu-Natal	12	

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:

.....

.....

.....

T2.1.8 SITE INSPECTION MEETING CERTIFICATE

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site		
Tender no:	3410/2026/01		
Site Inspection Date:	03 March 2026	at 11:00	

This is to certify that I, _____ (Name of authorised Representative)
 representing _____ (Name of Enterprise)
 visited the site on: _____ (Date)

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 the work to be done, as specified and implied, in the execution of this contract.

I declare that the representative, named above, is my authorised representative and **not** a third party agent and that my representative's attending of this site meeting, shall be deemed conclusive proof that my Enterprise are fully aware of what was said and discussed at this meeting.

Name of Tenderer	Signature	Date

Name of Trade & Investment KZN Representative	Signature	Date

This form is only to be completed when applicable to the tender and if a Compulsory Briefing meeting has been called.



Departmental Stamp:

T2.1.9 BIDDER'S DISCLOSURE - SBD 4

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

PDF VERSION OF THE BIDDER'S DISCLOSURE - SBD4 AND ATTACH TO THE BID DOCUMENT - NO CHANGES / AMENDMENTS MUST BE MADE TO THE SBD4 NATIONAL TREASURY FORM.

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 interest¹ 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 institution	State

2.2 Do you, or any person connected with the bidder, have a relationship

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.

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.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring

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.

institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

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

T2.1.10 RECORD OF ADDENDA TO TENDER DOCUMENTS

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

The undersigned confirm that the following communications received from the employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	Date	Title or Details	No. of Pages
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Attach Additional Pages if more space is required

Tenderer to attach proof of receipt of above listed addenda

Signed		Date	
Name		Position	
Tenderer			

T2.1.11 Proof of Working Capital of At Least 15% of the Project Value

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

ATTACH A COPY OF PROOF OF WORKING CAPITAL OF AT LEAST 15% OF THE PROJECT VALUE, IN THE FORM OF A BANK STATEMENT FROM A REGISTERED FINANCIAL INSTITUTION NOT OLDER THAN 3 MONTHS TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, copies of the bank statement not older than 3 months in respect of each party to the Joint Venture must be attached to this page

**T2.1.12 CONTRACTOR'S SAFETY, HEALTH AND ENVIRONMENTAL
DECLARATION**

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

In terms of Regulation 5(1)(h) of the Construction Regulations of February 2014 a Contractor may only be appointed to perform construction work if the Client is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014. In line with this requirement the Contractor is required to read through this document carefully, sign it and submit it with his/her Tender.

DECLARATION

1. I, the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications attached to this document.
2. I hereby declare that my company and its employees has the necessary competency and resources to safely carry out the construction works under this contract in compliance with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications.
3. I hereby confirm that adequate provisions has been made in my Tender to cover the cost of all Safety, Health and Environmental duties and responsibilities imposed on me by the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications.
4. I hereby undertake that if my Tender is accepted, to provide before commencement of the Works under the contract or as required by the Conditions of the Contract, a suitable and sufficiently documented Construction Safety, Health and Environmental Management Plan in accordance with Regulation 7(1)(a) of the Construction Regulations of February 2014, which shall be subject for approval by the Client.
5. I confirm that I may not commence with any part of construction work under the contract until my Construction Safety Health and Environmental Management Plan has been approved in writing by the Client.
6. I hereby confirm that copies of the following documentation will be kept on site for viewing and inspection purposes for the duration of the construction work:
 - a) Client's Construction Safety, Health and Environmental Specification.
 - b) Approved Construction Safety, Health and Environmental Plan.
 - c) Occupational Health and Safety Act, Act 85 of 1993.
 - d) Construction Regulations of February 2014.
7. I agree that my failure to complete and execute this declaration to the satisfaction of the Client will mean that I am unable to comply with the requirements of the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014, and accept that my Tender will be rejected.

Duly signed at..... on this the..... day of..... 20.....

Full Name of Signatory

Name of Enterprise

Capacity of Signatory

Signature of authorised representative of Tenderer

T2.1.13 Compulsory Enterprise Questionnaire

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise:	
Section 2: VAT registration number, if any:	
Section 3: CIDB registration number, if any:	
Section 4: CSD Number:	

Section 5: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

** Complete only if sole proprietor or partnership and attach separate page if more than 6 partners*

Section 6: Particulars of companies and close corporations

Company registration number	
Close corporation number	
Tax reference number	

Section 7: SBD4 issued by National Treasury must be completed for each tender and be attached as a tender requirement

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

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

Signed		Date	
Name			
Position			
Enterprise name			

**T2.1.14 TAX COMPLIANCE STATUS (TCS) PIN TO VERIFY ON LINE
COMPLIANCE SUPPLIER STATUS VIA SARS e-FILING**

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

TAX CLEARANCE REQUIREMENTS

It is a condition of Tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the tenderer's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance.

1. In order to meet this requirement Tenderers are required to apply via e-filing at any SARS branch office nationally. The Tax Compliance Status (TCS) requirements are also applicable to foreign Tenderers / individuals who wish to submit tenders.
2. SARS will then furnish the tenderer with a Tax Compliance Status (TCS) **PIN** that will be valid for a period of 1 (one) year from the date of approval.
3. In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN.
4. Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za.
5. Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

IMPORTANT NOTICE

1. The South African Revenue Services (SARS) has phased out the issuing of paper Tax Clearance Certificates.
2. From 18 April 2016 SARS introduced an enhanced Tax Compliance (TCS) system.
3. The new system allows taxpayers to obtain a Tax Compliance Status (PIN), which can be utilised by authorised third parties to verify taxpayers compliance status online via SARS e-filing.
4. Tenderers are required to fill in clearly, legibly, in bold print and black ink the SARS (TCS) PIN number and Tax Reference number in the space hereunder:

Tax Compliance Status(TCS) PIN Number	
Company / Tendering Entity Tax Reference Number	

Name of Tenderer:

Signature of tenderer:

Date:

T2.1.15 PROOF OF GOOD STANDING WITH THE COMPENSATION COMMISSIONER

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

ATTACH A COPY OF PROOF, THAT THE TENDERER IS IN GOOD STANDING WITH THE COMPENSATION COMMISSIONER (COIDA / FEMA), TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, copies of proof of Good Standing with the Compensation Commissioner in respect of each party to the Joint Venture must be attached to this page

T2.1.16 - FORM OF OFFER AND ACCEPTANCE

Tender no: 3410/2026/01

OFFER

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

Eco Park: Fencing and Site Clearance for Plessislaer Site

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 OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

Amount (in words):	
Amount in figures:	R

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.

Signature (s)			
Name (s)			
Capacity			
For the tenderer			
	(Name and address of tenderer)		
Name and signature of witness		Date	

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 returnable schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this form of offer and acceptance. No amendments to or deviations from said documents are valid unless contained in this schedule.

The tenderer shall within two weeks 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.

Signature (s)			
Name (s)			
Capacity			
For the employer			
	<i>(Name and address of employer)</i>		
Name and signature of witness			

Schedule of Deviations

Notes:

1. The extent of deviations from the tender documents issued by the employer before the tender closing date is limited to those permitted in terms of the conditions of tender.
2. A tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1.1.1. Subject:
Details:

1.1.2. Subject:
Details:

1.1.3. Subject:
Details:

1.1.4. Subject:
Details:

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 returnable 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.

T2.1.17 - COPY OF PROOF OF VALID UIF REGISTRATION

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

ATTACH A COPY OF PROOF NOT OLDER THAN THREE MONTHS, THAT THE TENDERER IS IN GOOD STANDING WITH THE UIF (REGISTRATION CERTIFICATE / COMPLIANCE CERTIFICATE / EMPLOYER STATEMENT OF ACCOUNT / UIF EXEMPTION IF APPLICABLE) TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

1. In the case of a Tender by a Joint Venture, copies of proof of Good Standing with the **UIF** in respect of each party to the Joint Venture must be attached to this page
2. The contractor must submit proof of UIF Contributions made to the fund to the Principal Agent on a monthly basis for the duration of the contract.

Should the contractor default on his monthly payments, the Employer will pay the outstanding payments due and the contractor will be liable for payments made by the Employer on behalf of the contractor, plus any additional cost associated with this process.

T2.1.18 - COPY OF PROOF OF CIDB REGISTRATION NUMBER

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

ATTACH A COPY OF PROOF NOT OLDER THAN THREE MONTHS, THAT THE TENDERER IS REGISTERED WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB) TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, certified copies of proof of registration with the CIDB in respect of each party to the Joint Venture must be attached to this page

T2.1.19 - OHSE PLAN STRUCTURE AND BASELINE RISK ASSESSMENT

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

ATTACH A OSH DESIGN RISK AND SPECIFICATION REPORT COMPRISES OF PURPOSE OF THE DESIGN RISK REPORT, LEGISLATION, HAZARD IDENTIFICATION AND RISK ASSESSMENT PROCESS, RISK ASSESSMENT PROFILE, SPECIFICATION AND BASELINE RISK ASSESSMENT, ETC.) TO THIS PAGE FOR ADJUDICATION PURPOSES

T2.1.20 - Functionality Criteria

TENDER EVALUATION CRITERIA AND SCORING

The below mentioned criteria will guide the evaluation of functionality / technical phase and bidders who score less than 60% in this phase will be disqualified for the next phase of evaluation.

Evaluation Criteria	Weight	Score	Total
<p>1. Company profile and key personnel (40/100)</p> <p>(a) Company profile (20/100)</p> <p>The company profile should comprise of the following:</p> <p>1) Years of experience, minimum 5 years (5 points)</p> <p>2) Company organogram (5 points)</p> <p>3) Previous relevant projects undertaken with project value indicating start and completion date (5 points)</p> <p>4) Relevant registration with statutory bodies/councils (NHBRC, MBA, GBCSA, SANAS, Etc.) (5 points)</p>	20		
<p>(b) Key Personnel (20/100):</p> <p>CV's with references, experience and relevant qualifications of personnel involved in the project as per the Project. Minimum years of experience: 5 years.</p> <p>(To obtain points, a person must have relevant experience in the area of construction being considered and highest qualification obtained in the field)</p> <p>1. Construction Manager (2 point)</p> <p>2. Site Agent (4 points)</p> <p>3. Safety Officer (6 points)</p> <p>4. Foreman (6 points)</p> <p>5. Quantity Surveyor (2 points)</p>	20		
<p>2. Successful completion of similar projects in the last five years (30/100):</p> <p>Schedule of projects of similar value and nature (projects completed in the last 5 years)</p> <p>List of three (3) similar projects and similar value completed in the CIBD Civil Engineering Works (CE) and letter of appointment to include project name, description (type/nature), duration (start & completion dates), project value & name of the client and completion certificate.</p> <p>1x Project - (10 points)</p> <p>2x Projects - (20 points)</p> <p>3x Projects - (30 points)</p>	30		
<p>3. Work Plan (30/100):</p> <p>Submission of a detailed project-specific Works Programme.</p> <p>Detailed programme of work which should outline the following: List of activities from site handover to completion, with key milestones and duration or time frames (considering site establishment, decanting plan, hoarding, etc.). Indication of all trades and critical path (start to finish relationships between activities).</p>	30		

TENDER EVALUATION CRITERIA AND SCORING PRICE AND SPECIFIC GOALS

Evaluation Criteria	Deliverables / Goal	Points
Price	A maximum of 80 Points is allocated for Price.	80
Specific Goal 1	Ownership by Black People Documentary Proof Required: 1) Sworn Affidavit signed and dated by Commissioner of Oaths / BBBEE Certificate 2) CIPC registration (Companies and Intellectual Property Commission) / CSD report.	5
Specific Goal 2	Ownership by South African Women Owned Enterprises Documentary Proof Required: 1) Sworn Affidavit signed and dated by Commissioner of Oaths / B-BBEE Certificate 2) CIPC registration (Companies and Intellectual Property Commission) / CSD report.	3
Specific Goal 3	Promotion of Enterprises Located in KwaZulu Natal for work to be done or services to be rendered. One of the following Documentary Proof required: 1) Utility Bill / Lease agreement 2) Letter from the ward councillor 3) Letter from the Tribal Authority: Chief, InDuna or Headman	12

PART B

TERMS AND CONDITIONS FOR TENDERING - SBD 1

1. TENDER SUBMISSION:

1.1. TENDERS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE TENDERS WILL NOT BE ACCEPTED FOR CONSIDERATION.

1.2. ALL TENDERS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED (NOT TO BE RE-TYPED) OR ONLINE

1.3. TENDERERS MUST REGISTER ON THE CENTRAL SUPPLIER DATABASE (CSD) TO UPLOAD MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS; AND BANKING INFORMATION FOR VERIFICATION PURPOSES).

1.4. THIS TENDER IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT ARE THE CLAUSES CONTAINED IN THE GENERAL CONDITIONS OF CONTRACT (SECOND EDITION 2010) PUBLISHED BY THE SOUTH AFRICAN INSTITUTION OF CIVIL ENGINEERING. COPIES OF THESE CONDITIONS OF CONTRACT MAY BE OBTAINED THROUGH MOST REGIONAL OFFICES OF THE SOUTH AFRICAN INSTITUTION OF CIVIL ENGINEERING, OR BY VISITING THEIR WEBSITE AT WWW.SAICE.ORG.ZA; AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.

2. TAX COMPLIANCE REQUIREMENTS

2.1 TENDERERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 TENDERERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

[2.3 APPLICATION FOR TAX COMPLIANCE STATUS PIN MAY BE MADE VIA E-FILING THROUGH SARS WEBSITE WWW.SARS.GOV.ZA.](http://WWW.SARS.GOV.ZA)

2.4 TENDERERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE TENDER.

2.5 IN TENDERS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE PROOF OF TCS / PIN / CSD NUMBER.

2.6 WHERE NO TCS IS AVAILABLE BUT THE TENDERER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE.

3. QUESTIONNAIRE TO TENDERING FOREIGN SUPPLIERS

3.1. IS THE TENDERER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	YES		NO	
3.2. DOES THE TENDERER HAVE A BRANCH IN THE RSA?	YES		NO	
3.3. DOES THE TENDERER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	YES		NO	
3.4. DOES THE TENDERER HAVE ANY SOURCE OF INCOME IN THE RSA?	YES		NO	

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS / TAX COMPLIANCE SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE TENDER INVALID.

SUPPLY CHAIN MANAGEMENT TRADE & INVESTMENT KWAZULU NATAL



BILLS OF QUANTITIES

with GCC for Construction Works (Second Edition 2010)

THE CONTRACT

SECTION 2

Eco Park: Fencing and Site Clearance for Plessislaer Site

Project Leader

Trade & Investment KwaZulu Natal
P.O Box 4245
Durban
4001
Tel Number: 031 368 9600
Fax Number: N/A
tenders@tikzn.co.za

Architect

Ukuza Consulting (Pty) Ltd
P.O Box 2274
Westville
4000
Tel Number: 031 265 0444
Fax Number: 086 208 0491
jody@ukuza.co.za

Employer:

(TIKZN)
PO Box 4245
Durban
4001
Tel Number: 031 368 9600
Fax Number: 031 368 5888

Tender Number: 3410/2026/01

Document Date: 24 February 2026

Contract Period: 6 Calendar Months

CIDB Registration number: _____

Central Suppliers Database Registration Number: _____

Eco Park: Fencing and Site Clearance for Plessislaer Site

THE CONTRACT



**Trade &
Investment**
Kwazulu - Natal
YOUR KNOWLEDGE PARTNER IN BUSINESS



Eco Park: Fencing and Site Clearance for Plessislaer Site

C1 - AGREEMENT AND CONTRACT DATA

Eco Park: Fencing and Site Clearance for Plessislaer Site

FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE

Tender No - 3410/2026/01



Eco Park: Fencing and Site Clearance for Plessislaer Site

C.1.1 - FORM OF OFFER AND ACCEPTANCE

THE OFFER AND ACCEPTANCE FORM T2.1.16 IS BOUND INTO **SECTION 1** (See end of Returnable Documents) OF THIS DOCUMENT AS PART OF THE RETURNABLE DOCUMENTS. ONCE A CONTRACT IS CONCLUDED WITH A SUCCESSFUL TENDERER, THIS PAGE WILL BE REPLACED WITH THE FILLED AND SIGNED OFFER AND SIGN ACCEPTANCE BY THE EMPLOYER AND IT WILL BECOME PART OF THE CONTRACT.

PLEASE SUBMIT THE OFFER AND ACCEPTANCE FORM WITH THE OTHER RETURNABLE DOCUMENTS.



Eco Park: Fencing and Site Clearance for Plessislaer Site

C1.2 - CONTRACT DATA

C 1.2 CONTRACT DATA: with GCC for Construction Works (Second Edition 2010)	
CONTRACT DATA FOR: Eco Park: Fencing and Site Clearance for Plessislaer Site	
Tender no:	3410/2026/01
	The General Conditions of Contract are the clauses contained in the General Conditions of Contract (Second Edition 2010) published by the South African Institution of Civil Engineering. Copies of these conditions of contract may be obtained through most regional offices of the South African Institution of Civil Engineering, telephone number 011 805 5947 or by visiting their website at www.saice.org.za.
	CONTRACT SPECIFIC DATA The following contract specific data are applicable to this contract:
	CONTRACT VARIABLES This schedule contains all variables specific to this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of this agreement . Spaces requiring information must be filled in, shown as 'not applicable' or deleted <u>but not left blank</u> . 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. Key cross reference clauses are italicised in [] brackets. The Engineer/Principal Agent, in accordance with Clause 1.1.1.16, shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties as described in Clause 3.1.2.
Part 1: CONTRACT DATA PROVIDED BY THE EMPLOYER:	
PRE-TENDER INFORMATION	
CONTRACTING AND OTHER PARTIES	
[1.1.1.15]	Employer: Trade & Investment KwaZulu Natal Supply Chain Management Postal address: PO Box 4245 Durban 4001 Tel: 031 368 5888 Fax: 031 368 9600
[1.2.1.2]	Physical address: 1 Arundel Close Durban 4001
[1.1.1.16]	Employers Agent 1 Ukuza Consulting (Pty) Ltd Agent's service: Architect Postal address: 15 The Boulevard Westway Office Park Westville 3630 Tel: 031 265 0444 Fax: 086 208 0491
	Employers Agent 2 Ukuza Consulting (Pty) Ltd Agent's service: Quantity Surveyor Postal address: P.O Box 2274 Durban 4000 Tel: 031 265 0444 Fax: 086 2080491
	Employers Agent 3 Praneel Baijnath Agent's service: Civil Engineer Postal address: 54 Maxwell Drive Woodmead 2191 Tel: 031 267 8560 Fax: N/A
	Employers Agent 4 Mark Marais Agent's service: Structural Engineer Postal address: 54 Maxwell Drive Woodmead 2191 Tel: 011 519 4619 Fax: N/A

	Employers Agent 8 Dustin Bell Agent's service: Environmental Postal address: 1A Leinster Place Gillits 3610 Tel: 031-765-2942 Fax: N/A	
	PART 1: DATA PROVIDED BY THE EMPLOYER	
[1.1.1.13]	Defects Liability Period The defects liability period is: A time measured from the date of the Certificate of Completion. Defects Liability Period is 12 Months for the whole of the Works	
	Latent Defect Period	
[5.16.3]	The latent defect period is: 5 years after the Final Approval Certificate	
	Documentation required before Commencement of the Works:	
[5.3.1]	The documentation required before commencement with the Works execution are;	
[4.3]	Health and Safety Plan	The Contractor shall deliver his Health and Safety Plan of the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
[5.6]	Initial Programme	The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.
[6.2]	Guarantee	The Contractor shall deliver his chosen Guarantee (security) for this Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
[8.6]	Insurance	The Contractor shall deliver his insurance for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Cash flow by contractor	The Contractor shall deliver his Cash flow for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Priced Bill of Quantity	The Contractor shall deliver his Priced Bill of Quantity within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Programme	The Contractor is required to submit his Programme of Works in terms of Clause 5.6.1 and 5.3.1 and the Principal Agent is required to approve this within 7 days in terms of Clause 5.6.3
	Other requirements	
[5.3.2]	The time to submit the documentation required before commencement with Works execution is: 14 calendar days	
	Non-Working days	
[5.8.1]	Non-Working days	Sundays
	Special non- working days	All Nationally Recognized Public Holidays and the year end break
[5.8.1]	First Year end break - commences	16 December 2026
	ends on	11 January 2027
	Second Year end break - commences	16 December 2027
	ends on	10 January 2028
	Third Year end break - commences	N/A
	ends on	N/A
	Engineer/Principal Agent to consult with Employer	
[3.1.3]	The Engineer shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties.	
	Security	
[6.2.1]	The time to deliver the deed of guarantee is Prior to site hand over in terms of clause 5.3.1 and 5.3.2.	
[6.2.1]	Please see CONTRACT DATA - below to select Guarantee Option	
	Commencement Date	
	Commencement date means the date of Site Hand over that should not occur prior to the tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance.	
	The 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) The agreement ("this document") consists of; 1. Agreement and Conditions of Contract. 2. Form of Offer and Acceptance. 3. Contract Data. 4. Scope of Works. 5. Site Information. 6. Drawings & documents referred to in the 1 to 4 above. (See Form of Offer and Acceptance)	

[5.3.1]	The contractor shall commence executing the Works within 7 calendar days from the Commencement Date.												
[5.4.1]	Possession of the site will be given within 10 calendar days after the contractor has fulfilled the conditions (4.3, 5.6, 6.2, 8.6) and received the notification from the Employer of Site Hand Over where the contractor will receive one <u>fully signed</u> copy of the Form of Offer and Acceptance from the employer .												
[5.6.1]	The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.												
	CONTRACT DETAILS												
[1.1.1.33]	Works description: Refer to document C3 – Scope of Work.												
[1.1.1.30]	Site description: Refer to document C4 – Site Information.												
	Specific options that are applicable to a State organ only Where so :												
[6.10.6.2]	<p>1) Interest rate legislation:</p> <p>(a) in respect of interest owed <u>by</u> the employer, the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and</p> <p>(b) in respect of interest owed <u>to</u> the employer, the interest 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), will apply</p> <p>2) Lateral support insurance to be effected by the contractor: <table border="1" style="float: right;"><tr><td>Yes</td><td>No</td><td>X</td></tr></table></p> <p>3) Payment will be made for materials and goods <table border="1" style="float: right;"><tr><td>Yes</td><td>X</td><td>No</td></tr></table></p> <p>4) Dispute resolution by litigation <table border="1" style="float: right;"><tr><td>Yes</td><td>No</td><td>X</td></tr></table></p> <p>5) Extended defects liability period applicable to the following elements: <table border="1" style="float: right;"><tr><td colspan="3" style="text-align: center;">Work as a whole</td></tr></table></p>	Yes	No	X	Yes	X	No	Yes	No	X	Work as a whole		
Yes	No	X											
Yes	X	No											
Yes	No	X											
Work as a whole													
[8.6.1.1.2]	The Value of material, supplied by the Employer, and not included in the Contract Price, is: <table border="1" style="float: right;"><tr><td>R0,00</td></tr></table>	R0,00											
R0,00													
[8.6.1.1.3]	The amount to cover Professional Fees, not included in the Contract Price, for repairing damage and loss to be included in the insurance: 30% of the replacement costs												
[8.6.1.3]	The limit for indemnity for liable insurance is: <table border="1" style="float: right;"><tr><td>R20 million</td></tr></table>	R20 million											
R20 million													
[6.5.1.2.3]	The percentage allowance to cover overhead charges for contractor and subcontractors, is: <table border="1" style="float: right;"><tr><td>33,30%</td></tr></table>	33,30%											
33,30%													
[1.1.1.14]	Practical Completion Date The Practical Completion date is: 6 Calendar Months from date of Site Handover												
[5.5.1]	For the works as a whole:												
[5.13.1]	The whole of the works shall be completed within: <table border="1" style="float: right;"><tr><td>6 Months (which shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods).</td></tr></table>	6 Months (which shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods).											
6 Months (which shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods).													
[5.5.1]	The date for practical completion shall be <table border="1" style="float: right;"><tr><td>6 Months after date of site handover</td></tr></table>	6 Months after date of site handover											
6 Months after date of site handover													
[5.13.1]	The penalty per calendar day shall be : <table border="1" style="float: right;"><tr><td>0.04% of the Contract Price, rounded to the nearest R10</td></tr></table>	0.04% of the Contract Price, rounded to the nearest R10											
0.04% of the Contract Price, rounded to the nearest R10													
	For the works in sections:												
	The date for practical completion from the commencement date and the penalty per calendar day:												
[5.5.1]	Portion 1:												
[5.13.1]	N/A												
[5.5.1]	0.04% of the Contract Price, rounded to the nearest R10												
[5.5.1]	Portion 2:												
[5.13.1]	N/A												
[5.5.1]	0.04% of the Contract Price, rounded to the nearest R10												
[5.5.1]	Portion 3:												
[5.13.1]	N/A												
[5.5.1]	0.04% of the Contract Price, rounded to the nearest R10												
[5.5.1]	Portion 4:												
[5.13.1]	N/A												
[5.5.1]	0.04% of the Contract Price, rounded to the nearest R10												
[5.5.1]	Portion 5:												
[5.13.1]	N/A												
[5.5.1]	0.04% of the Contract Price, rounded to the nearest R10												
[5.5.1]	Portion 6:												
[5.13.1]	N/A												
[5.5.1]	0.04% of the Contract Price, rounded to the nearest R10												
[1.3.2]	The law applicable to this agreement shall be that of the: Republic of South Africa												
[6.10.1.5]	The percentage advance on materials not yet built into the Permanent Works is: <table border="1" style="float: right;"><tr><td>80,00%</td></tr></table>	80,00%											
80,00%													

[6.10.3]	<p>Percentage retention on amounts due to contractor is: The Percentage retention is 10%. The only security required by the Employer will be such as selected by the Contractor on the Form of Offer and Acceptance and Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR, point 2 - Documents, of the Contract Data.</p> <p>Maximum retention is: 10,00% of the Contract Price</p>
[6.8.1] [6.8.2] [6.8.3] [6.8.2] [6.8.3]	<p>Notwithstanding anything to the contrary contained in the General conditions of Contract and Preliminaries, this contract could only, when the <u>construction period exceeds 6 months and the contract exceeds R1,000,000.00</u>, be subject to a Contract Price Adjustment Factor.</p> <p>Clause 6.8.2 the last part of the sentence saying "calculated according to the formula and the conditions set out in the Contract Price Adjustment Schedule." must be replaced by "calculated according to the Contract Price Adjustment Provisions (CPAP) Indices Application Manual for use with P0151 indices (Revised 1 January 2013)" as published by Statistics South Africa. The Contract Price Adjustment Provision (CPAP) will be subject to the most recently released indices by Statistic South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Trade & Investment KwaZulu-Natal will not accept the submission by Tenderers of lists of additional items."</p> <p>Where this contract is a Lump Sum contract, the contract will only be subject to Contract Price Adjustment Provisions (CPAP)(Revised 1 January 2013) where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings only.</p>
[5.14.5]	<p>The following clause must be added to clause 5.14.5:</p> <p>[5.14.5.6] The employers agent shall submit the final account within 3 calendar months to the principal agent.</p>
[10.5] [10.5.3] [10.9.1]	<p>The determinations of disputes shall be by ARBITRATION ONLY.</p> <p>The number of Adjudication Board Members to be appointed is: One</p> <p>Replace the last part of the clause with the following: "...on the application of either party, by the Chairman, or his nominee of the Association of Arbitrators."</p> <p>[10.9.1]</p>
	<p>Where CPAP is applicable, the contract sum will be adjusted in accordance with the Contract Price Adjustment Provisions (CPAP) as set out in the CPAP Indices Application Manual as published by Statistics South Africa, dated 1 January 2013 and any amendments thereto:</p> <ol style="list-style-type: none"> 1) Glass etc. measured in specialist section Metalwork, will be adjusted in terms of the index for that work group unless specifically stated otherwise in the bills of quantities. 2) In case of uninterrupted power supplies, elevators, escalators and hoists, generating sets, motor-alternator sets and intercommunication systems shall be adjusted in accordance with Work Group 170. 3) Further to clause 3.4.6 of the CPAP Indices Application Manual, the listing of additional items for exclusion by Tenderer's, will not be permitted. <p>Alternative Indices: Not Applicable</p> <p>Details of changes made to the General Conditions of Contract for Construction Works - Second Edition 2010</p>
[1.1]	<p>Clause</p> <p>[1.1.1.5] COMMENCEMENT DATE – means the actual date of Site Hand over that should not occur prior to the Tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance.</p> <p>[5.12.2.2] ABNORMAL CLIMATIC CONDITIONS - means conditions over and above what could reasonably be expected for the specific locality where the Works are being executed and include inter alia excessive rain, heat, cold, wind and any other climatic condition that would not normally be experienced during the season that the Works are executed in that area. The South African Weather Service's (http://www.weathersa.co.za) 10 year average climatic conditions statistics would be what could be reasonably expected for the specific locality where the Works are executed.</p> <p>[6.2.1] CONSTRUCTION GUARANTEE – means an on demand guarantee at call obtained by the contractor from an institution approved by the employer in terms of the employer's construction guarantee form as selected in the Offer and Acceptance Form and the contract data.</p> <p>CONSTRUCTION PERIOD – means the period commencing on the commencement date and ending on the date of due completion date. This period will be deemed to commence on actual site hand over date to the contractor and end on the date of practical completion and shall include all annual industrial holiday periods, Sundays and public holidays.</p> <p>CORRUPT PRACTICE – means the offer, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.</p> <p>FINAL ACCOUNT - The document prepared by the principal agent, which reflects the contract value of the works at final approval or termination.</p> <p>FRAUDULENT PRACTICE – means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practise among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.</p>
	<p>INTEREST – the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be in terms of the legislation of the Republic of South Africa, and in particular:</p> <ol style="list-style-type: none"> (a) in respect of interest owed by the employer, the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and (b) in respect of interest owed to the employer, the interest 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), will apply

	<p>[1.1.1.16] ENGINEER/PRINCIPAL AGENT – means the person or entity appointed by the Employer and named in the Contract Data as the Engineer /Principal Agent to act as agent of the Employer. In the event of an Engineer/Principal Agent not being appointed, then all the duties and obligations of an Engineer/Principal Agent as detailed in the Contract shall be fulfilled by a representative of the Employer as named in the Contract Data. (Hereafter referred to as Engineer)</p> <p>[1.1.1.21] GENERAL ITEMS - or preliminaries means items stipulated in the Pricing Data relating to general obligations, site services, facilities and/or items that cover elements of the cost of the work which are not considered as proportional to the quantities of the Permanent Works.</p>
	<p>[4.4.1] Add the following to the clause 4.4.1: "<i>The Contract shall only use subcontractors who are duly registered with the CIDB and who has an ACTIVE status at the time of submitting the tender</i>"</p>
	<p>[6.2.1] Refer to Offer and Acceptance form for the various options that the contractor may choose from in providing a form of Guarantee under "GUARANTEE OPTIONS".</p>
	<p>[6.10.6.2] Replace "<i>at the prime overdraft rate, as charged by the Contractor's Bank,</i>" with "<i>.at the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975).</i>" Omit "<i>on all overdue payments from the date on which the same should have been paid...</i>" and replace with "<i>only after 30 calendar days from receiving written notice from the Contractor that the amount is overdue...</i>"</p>
<p>[5.12.3]</p> <p>[5.14.5.1]</p> <p>[5.16.4]</p> <p>[6.2.3]</p> <p>[9.3.2.2]</p>	<p>SPECIAL CONDITIONS OF CONTRACT</p> <p>Omit clause 5.12.3 and add the following: <i>"5.12.3. If an extension of time is granted, the Contractor shall be paid such additional time-related General Items, including for special non-working days, if applicable as are appropriate regarding to any other compensation which may already have been granted in respect of the circumstances concerned. The reasons for extension of time that would invoke payment of time related General Items are inter alia;</i></p> <p>5.12.3.1 <i>Failure to give possession of the site to the contractor.</i> 5.12.3.2 <i>Making good physical loss and repairing damage to the works where the contractor is not at risk.</i> 5.12.3.3 <i>Contract instructions not occasioned by default by the contractor.</i> 5.12.3.4 <i>Failure to issue construction information timeously or the late issue of a contract instruction following a request from the contractor.</i> 5.12.3.5 <i>Late acceptance by the principal agent of a design undertaken by a selected subcontractor where the contractor's obligations have been met.</i> 5.12.3.6 <i>Suspension or cancellation termination invoked by a nominated or selected n/s subcontractor due to default by the employer or the principal agent.</i> 5.12.3.7 <i>Insolvency of a nominated subcontractor.</i> 5.12.3.8 <i>A direct contractor.</i> 5.12.3.9 <i>Opening up and testing of work and materials and goods where such work is according to in accordance with the contract documents.</i> 5.12.3.10 <i>The execution of additional work for which the quantity included in the bills of quantities is not sufficiently accurate.</i> 5.12.3.11 <i>Late or failure to supply materials and goods for which the employer is responsible.</i> 5.12.3.12 <i>Suspension of the works."</i></p> <p>Omit entire clause 5.14.5.1</p> <p>Add the following new clause "5.16.4. Upon the issue of a Final Approval Certificate, unless otherwise provided in the Contract: 5.16.4.1. <i>The performance Guarantee (if any) shall be returned within 14 days to the guarantor in terms of Clause 7."</i></p> <p>Add to clause 6.2.3 the following "<i>The Contractor shall provide proof of paid-up premium payments to accompany his payment certificate as proof that his performance guarantee has not expired yet. The Contractor will not receive payment without proof of the validity of their performance guarantee.</i></p> <p>Omit "<i>without prejudice to the exercise of any lien the Contractor may have acquired over the Employer's property."</i></p> <p>Duties and functions of the Engineer requiring the specific approval of the Employer BEFORE execution of any part of these duties are as follows:</p> <p>(a) Determinations of contractors claims for extension of time (revision of the contract completion date). All claims for extension of time shall be submitted by the Engineer, together with the Engineer's recommendations, to the Employer for determination. Omit "Engineer" in clause 42.2 and replace with "Employer".</p> <p>(b) Drawings, instructions or communications of any kind requiring variations of the works and involving EXTRA's shall NOT be given effect by the Contractor UNTIL BOTH the "Official Variation Order" and the "Financial Request for Variation Order and Additional Funds" form, as issued by the Trade & Investment KwaZulu-Natal, have been approved and signed by the Employer.</p> <p>(c) Insurance policies to be approved by the Employer within 21 days of the date of the Commencement of the Works.</p> <p>(d) Any notice of disagreement raised by the Contractor or written Dispute Notice given by the Contractor to the Engineer shall be submitted by the Engineer, together with the Engineer's recommendations, to the Employer for determination.</p> <p>(e) The issue of the certificate of practical completion, certificate of completion and the final approval certificate shall be signed and submitted by the Engineer, to the Employer for final approval and signature. The certificates shall not be considered as officially issued until signed by the Employer.</p> <p>MANAGING PROJECT DURATION</p> <p>(a) The Contractor shall co-ordinate his programme with all other contractors whose work may precede or be executed simultaneously to his own. The Contractor will be called upon to plan and control the project using the Project Evaluation and Review Technique (PERT) or other approved Critical Path Method (CPM) network analysis of his events and activities and those of the sub-contractors in his employ and must co-ordinate his planning with any other contractor employed on the project. A fortnightly project control report will be expected from the Contractor in writing, evaluating any gains or delays against the critical path and he should allow for all costs involved in planning reviewing and updating the programme to the satisfaction of the Principal Agent against this item.</p> <p>(b) Activity-and total float shall belong to the Employer.</p> <p>(c) The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.</p> <p>It is a condition of this contract that, the contractor submit to the Engineer/principal agent a detailed CPM Programme which shall be to the approval of the Engineer/principal agent. In this regard tenderers are advised to consult with the Engineer/Principal Agent as to the format and requirements of the programme as no claim whatsoever will be entertained should the programme fail to meet the requirements of the Engineer/Principal Agent. Failure to submit the programme within the stipulated time may result in the contractor being held in breach of contract.</p> <p>The approved programme will form the basis of time management of the project and extension of time will not be guaranteed unless the Contractor has strictly complied with this provision.</p> <p>The programme shall make allowance for rain and the number of rain days allowed within the critical path shall be on the provisions of the clause dealing with inclement weather and claiming for delays in performance in this bill.</p> <p>Allowance for the above must be made under this item as no claims for failing to comply with this precondition will later be entertained.</p>

INCLEMENT WEATHER AND CLAIMS FOR DELAYS IN PERFORMANCE

- (a) The Contract Sum includes a monthly allowance of 3 working days inclement weather during which rainfall exceeds 10mm per day for months as indicated in the Scope of Works. These days shall be reflected on the critical path of the Contractor's programme as specified in MANAGING PROJECT DURATION above.
- (b) Claims for delays in performance due to inclement weather shall be calculated separately for each calendar month and for the project as a whole. Delays or gains to the critical path shall be reflected in all revisions of the programme. An extension of time will only be granted where the following conditions are met:
- (i) The criteria to be used for WORK stoppages shall be for safety hazards or poor quality of work.
 - (ii) The Employer's site representative or the Employer's Principal Agent, if the site representative is not available shall be notified when the Contractor stops the work and intends to claim performance delays. The Employer representative shall inspect the situation together with the Contractor and give an immediate decision.
1. The stoppage claimed must cause a delay in the Completion Date of work. If the critical activities can proceed and a non-critical activity is delayed due to inclement weather no claims for delay shall be granted.
 2. No claims for stoppages less than 2(two) hours per day shall be considered.
 3. Claims granted for more than 2 (two) hours, but less than 10 (ten) hour (lunch included) day, shall be added together and expressed as full days.
 4. All claims shall be submitted in writing to the Principal Agent within one working day of the actual stoppage.
 5. The total delay in performance granted to the Contractor expressed in days shall be added to the contractual Completion Date of each section of the Works. The contractual penalty clause shall only come into effect after this newly arrived date.
 6. Total delays (in hours) will be rounded up or down to the nearest integer for the calculation of Working Days. The total hours (including lunch) per Working Day shall be 10 unless otherwise indicated on the Contractor's programme.
 7. Where the programmed delays for inclement weather exceed the actual delays incurred the Completion Date(s) will not be adjusted.
 8. Where the project includes builder's holidays the programmed durations for inclement weather shall be adjusted pro-rate to the actual Working Days.
 9. The total of all monthly delays due to inclement weather shall be calculated in accordance with the example given below:

Description	Months					Total
	Sept	Oct	Nov	Dec	Jan	
	Hours	Hours	Hours	Hours	Hours	Hours
Programmed Rain days	0	30	30	15	15	90
Actual Rain days	16	22	35	15	18	106
Difference	-16	8	-5	0	-3	-16
Estimated Extension of time - in working days						2

8 hrs/day*

See point 5.2 in the Scope of Works for the specific days the tenderer must allow for in this contract.

Tender no: 3410/2026/01 **Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR:**

POST-TENDER INFORMATION

Note: All information for this section requires consultation with the Contractor. The Engineer/Principal Agent shall not pre-select any of the alternatives available to the Contractor.

1 CONTRACT DETAILS

[1.1.1.9]

Contractor Name:

[1.2.1.2]

Postal address:

Tel no

Fax no

Tax / VAT Registration No:

e-mail

Physical address:

[1.1.1.10]

The accepted contract price inclusive of tax is R :

[Amount in words]

Payment Of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)					
<p>The preliminaries amounts shall be paid in terms of:</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">*Alternative A</td> <td style="padding: 5px; background-color: #d9ead3;">Yes</td> </tr> <tr> <td style="padding: 5px;">**Alternative B</td> <td style="padding: 5px; background-color: #d9ead3;">N/A</td> </tr> </table>	*Alternative A	Yes	**Alternative B	N/A
*Alternative A	Yes				
**Alternative B	N/A				
<p>* Assessed by the Engineer/Principal Agent as an amount prorated to the value of the Work duly executed in the same ratio as the Preliminaries bears to the Contract Price excluding VAT, Preliminary amount, Contingencies and any CPAP.</p>					
<p>** Calculated from the priced Bill of Quantity/Lump Sum document. The Contractor and the Engineer/Principal Agent shall agree on a division of the priced Preliminaries items into: initial establishment charge, monthly charge and final disestablishment charge.</p>					
<p>If the Contractor and the Engineer/Principal Agent can not agree, within 10 Working Days from the Commencement Date, on such a division then the Engineer/Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;</p> <p style="margin-left: 40px;">10% of the General Items/Preliminaries amount shall not be varied</p> <p style="margin-left: 40px;">15% of the General Items/Preliminaries shall only be varied in proportion of the Contract Price to the Contract Sum</p> <p style="margin-left: 40px;">75% of the General Items/Preliminaries shall be varied in proportion to the revised Construction Period compared with the initial Construction Period.</p>					
Adjustment of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)					
Alternative A	<p>For the adjustment of Preliminaries both the Contract Sum and the Contract Value (including tax) shall exclude the amount of Preliminaries, all Contingency Sum(s) and any provision for Cost Price Adjustment Provisions:-</p> <ul style="list-style-type: none"> - An amount which shall not be varied. - An amount varied in proportion to the contract value as compared to the Contract Sum. - An amount varied in proportion to the Construction Period as compared to the initial Construction Period (excluding revisions to the Construction Period to which the Contractor is not entitled) to adjustment of the Contract Value in terms of the agreement. <p>The Contractor shall provide a breakdown of charges (including tax) within 15 working days of the date of acceptance of tender and, where applicable, an apportionment of Preliminaries per section</p> <p>If the Contractor and the Principal Agent cannot agree, within ten (10) Working Days from the Commencement Date, on such a division then the Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;</p> <p style="margin-left: 40px;">10% of the amount shall not be varied</p> <p style="margin-left: 40px;">15% varied in proportion of the Contract Value to the Contract Sum</p> <p style="margin-left: 40px;">75% varied in proportion to the revised Construction period compared with the initial Construction Period</p> <p>Sectional Completion : Subdivision of Preliminaries Costs</p> <p>For the adjustment of preliminaries for sections of the work the value of fixed, value, and time related amounts of the preliminaries for each section is required. The contractor is to provide such information within fifteen (15) working days of taking possession of the site, failing which the categorised preliminaries amounts shall be prorated to the value of each section.</p> <p>The above shall apply equally for projects where sectional completion was not contemplated at tender stage but subsequently occurred on an ad hoc basis during construction of the works as agreed between the client and the employer. The original priced categorised amounts for fixed, value, and time related amounts shall be prorated to the value of each section.</p> <p>When an extension of time has been granted in terms of the GCC and the preliminaries require to be adjusted accordingly, the pertinent sectional (subdivided) categorised preliminaries amounts shall be utilised, where applicable and not the overall preliminary amounts.</p> <p>Where sectional completion is required in terms of the agreement, the Contractor shall provide the Principal Agent with the division of the above categorized amounts into sections. Should the Contractor fail to provide such information within the period stipulated the categorized amounts shall be prorated to the value of each section.</p> <p style="text-align: right; margin-right: 50px;"><input style="background-color: #d9ead3;" type="checkbox"/> YES <small>yes / no</small></p> <p>or</p>				
Alternative B	<p>The Contractor shall within 15 working days of the date of possession of the site provide the Principal Agent with a detailed breakdown of Preliminaries amounts for the works as a whole, or per section where applicable, including administrative and supervisory staff charges and for the use of construction equipment in terms of the programme.</p> <p style="text-align: right; margin-right: 50px;"><input style="background-color: #d9ead3;" type="checkbox"/> NO <small>yes / no</small></p>				
The contractor is informed that only option 'A' shall apply					
2 DOCUMENTS					
<p>Contract documents marked and annexed hereto:</p> <p>Priced Bills of Quantities: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Lump Sum document : Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Guarantee Options:</p> <p>Not applicable</p> <p>2.2 DESIGN BRIEF</p> <p style="margin-left: 40px;">2.3 DRAWINGS <input type="checkbox"/> Yes YES or NO</p> <p style="margin-left: 40px;">2.4 DESIGN PROCEDURES <input type="checkbox"/> No YES or NO</p> <p>Contract drawings: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Other documents:</p> <hr style="border-top: 1px dashed black;"/> <p>Waiver of the Contractors lien or right of continuing possession is required. <input style="background-color: #d9ead3;" type="checkbox"/> YES</p>					

GUARANTEE OPTIONS

The Tenderer agrees to provide a bank or insurance guarantee in accordance with clause 6.2.3 of the Conditions of the GCC Second Edition 2010 Contract within the period stated in the Contract Data. This guarantee shall be for a sum equal to an amount stated in the Contract Data.

Guarantees submitted must be issued by either an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act No 94 of 1990, on the pro-forma referred to above. No alterations or amendments of the wording of the pro-forma will be accepted.

(a) the tenderer accepts that in respect of contracts up to R1 million, a payment reduction of 5% of the contact value will be applicable and will be reduced 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: select one option

(i) cash deposit of 10 % of the Contract Price

(ii) bank or insurance Performance Guarantee of 10 % of the Contract Price

(iii) cash deposit of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)

(iv) bank or insurance guarantee of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)

NOTE: Where the Tenderer has not selected one of the guarantee options above, the default option will be as if the Tenderer has selected a security of a bank or insurance guarantee of 5% of the value of the Works and a payment reduction of 5% of the value certified in the payment certificate excluding value added tax. - See GCC Second Edition 2010 clause 6.2.2 as amended in Contract Data.

3 SIGNATURES OF THE CONTRACTING PARTIES

Thus done and signed at.....onof.....20.....

Name of signatory _____ for and behalf of the **Employer** who by signature hereof

Capacity of signatory _____ as Witness.

Thus done and signed at.....onof.....20.....

Name of signatory _____ for and behalf of the **Contractor** who by signature hereof

Capacity of signatory _____ as Witness.

Eco Park: Fencing and Site Clearance for Plessislaer Site

C1.3 - FORM OF GUARANTEE

**C1.3 PERFORMANCE GUARANTEE -
GCC FOR CONSTRUCTION WORKS (Second Edition 2010)**

Supply Chain Management
Trade & Investment KwaZulu Natal
1 Arundel Close
Kingsmead Office Park
Durban, 4001

Sir,

ON DEMAND PERFORMANCE GUARANTEE

Tender Number 3410/2026/01

For use with the General Conditions of Contract for Construction Works (Second Edition 2010)

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: _____

Physical Address: _____

"Employer" means: TRADE & INVESTMENT KWAZULU NATAL

"Contractor" means: _____

"Engineer" means: _____

"Works" means:

Eco Park: Fencing and Site Clearance for Plessislaer Site

"Site" means: _____

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of: _____

Amount in Words:

"Guaranteed Sum" means: The maximum aggregate amount of: 10% _____
Of Contract Sum

Amount in Words: _____

"Expiry Date" means: _____

CONTRACT DETAILS

Engineer Issues: Interim Payment Certificates, Final Payment Certificates and the Certificate Completion of the Works as defined in the Contract.

PERFORMANCE GUARANTEE

- 1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
- 2 The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
- 3 The Guarantor hereby acknowledges that:
 - 3,1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
 - 3,2 its obligation under the Performance Guarantee is restricted to the payment of money.
- 4 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
 - 4,1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4,2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;
 - 4,3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum Certified in 4.
- 5 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
 - 5,1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
 - 5,2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
 - 5,3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
- 6 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
- 7 Where the Guarantor has made payments in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Payment Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
- 8 Payment by the Guarantor in terms of 4 or 5 shall be made with seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 9 Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.

- 10 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 11 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
- 12 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
- 13 This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 14 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Court Act No 32 of 1944, as amended, to this jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at _____

Date _____

Guarantor's signatory (1) _____

Capacity _____

Guarantor's signatory (2) _____

Capacity _____

Witness signatory (1) _____

Witness signatory (2) _____



Eco Park: Fencing and Site Clearance for Plessislaer Site

PART C2 - PRICING DATA

C2.1 PRICING INSTRUCTIONS
GCC FOR CONSTRUCTION WORKS (Second Edition 2010)

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

C2.1 Pricing Instructions

	<p>Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")</p> <p>The adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories by insertion of "F", "V", "T" as the case may be against the price in the "rate" column immediately preceding the "amount" column, where "F" denotes a fixed amount (amount not varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount variable in proportion to time.</p>
1	<p>MASSES AND MEASURING UNITS</p> <p>These shall be in accordance with the Measuring Units and National Measuring Standards Act No. 76 of 1973 and amendments thereto.</p> <p>The pages of each of these documents are numbered consecutively and before the Tenderer submits his tender he should check the number of pages, and if any are found missing or duplicated, or the figures or writing indistinct, or the documents contain any obvious error, he/she should apply to the Head Office AT ONCE and have same rectified as no liability whatsoever will be admitted by the Administration in respect of errors in Tender due to the foregoing.</p>
2	<p>PRICES FOR VARIATIONS</p> <p>Where prices or quotations for variations are submitted by the Contractor during the currency of the Contract, it is to be clearly understood that these are for the purpose of consideration by the Employer and that there is no assumption of acceptance. The Contractor will be notified of acceptance of prices or quotations either by insertion of the amount on the variation order or by written intimation.</p>
3	<p>SCALE</p> <p>The scale to which the Drawings are made is only to be made use of when no figured dimensions are given either on the Drawings or in the tender documents and the figured dimensions are always to be followed though they may not coincide with the scale of the Drawings, but dimensions where possible are to be taken from the buildings.</p>
4	<p>PROVISIONAL ITEMS</p> <p>All items described as "Provisional" shall be used as directed by the Employer and measured and valued or paid for.</p> <p>No work for which "Provisional" items are allowed shall be commenced without written instructions from the Employer</p>

5	<p>TIMELY ORDERING OF MATERIALS</p> <p>The Contractor is warned to place all orders for materials or special articles as early as possible, as he will be held solely responsible for any delay in the delivery of such goods. Nevertheless this tender is conditional upon no liability being attached to the Contractor if delivery of materials is rendered impossible by reason of any act of the Government.</p>
6	<p>ELECTRICAL LIGHTING, POWER AND WATER</p> <p>The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Employer.</p> <p>The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.</p> <p>Tenderers are advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.</p>
7	<p>IMPORT PERMITS, DUTIES AND SURCHARGES.</p> <p>All tenders by means of which imported products are being called for, must use the rate of exchange 14 days prior to the closing date indicated in the tender documents. If this day falls on a weekend or public holiday, the next working day must be used.</p> <p>Furthermore, Tenderers must submit documentary proof (in the form of a certified copy) from their bank or legally recognised financial institution, clearly indicating what the rate of exchange was 14 days prior to the closing date, as mentioned above.</p> <p>Together with this, the Tenderer must confirm that the tender price relating to an imported product, was based on the rate of exchange 14 days prior to the closing date as mentioned above.</p>
8	<p>STANDARD SYSTEM OF MEASUREMENT WHERE BILLS OF QUANTITIES FORM PART OF THE TENDER DOCUMENTS</p> <p>The work executed under this Contract has been measured in accordance with the;</p> <p style="text-align: center;">Standard System of Measuring Builders Work (7th Edition)</p> <p>including all amendments unless descriptions of items indicate a deviation and it shall be understood that the system of measurement which is herein adopted is the only system of measurement which will be recognised in connection with this contract. Any contradictions to this system of measurement contained in the “Model Preambles for Trades 2008” shall be disregarded (unless same have been accommodated in the system of measurement) but applicable rates shall be included for all requirements stated and not measured separately in compliance with this system.</p>
9	<p>PRICING OF ROCK EXCAVATIONS</p> <p>It is a condition of this tender that should the tenderer elect to price the Rock Excavation included in this tender, the rates must be market related and should be identically priced for the same classification of excavations and not vary for similar billed items in the different sections.</p>

10	<p>BROAD BASED BLACK ECONOMIC EMPOWERMENT</p> <ol style="list-style-type: none"> 1. It is the deliberate policy of the Provincial Administration of KwaZulu-Natal to foster and to encourage the economic empowerment of Black South Africans. This policy will be implemented without prescription and without prejudicing the principles and the integrity of the Provincial Administration of KwaZulu-Natal. Subject to these constraints and also subject to good business practise and commercial consideration, it is therefore considered appropriate that the Provincial Administration of KwaZulu-Natal should encourage business relationships with companies which actively pursue Affirmative Action and Black Economic Empowerment Programmes. 2. In responding to this tender you are therefore encouraged to devote attention to these two subjects of Affirmative Action and Economic Empowerment. In addition, in considering the appointment of sub-contractors, you are requested to extend the spirit of these policies. 3. The foregoing enunciations of this policy are not intended to be prescriptive nor to preclude any individual or operation from responding to this tender. 	
11	<p>REGISTRATION ON THE CENTRAL SUPPLIERS DATABASE</p> <ol style="list-style-type: none"> 1. In terms of the Public Finance Management Act (PFMA), 1999 (Act No 1 of 1999) Section 38 (1) (a) (iii) and 51 (1) (iii) and Section 76 (4) of PFMA National Treasury developed a single platform, The Central Supplier Database (CSD) for the registration of prospective suppliers including the verification functionality of key supplier information. 2. Prospective suppliers will be able to self - register on the CSD website: www.csd.gov.za 3. Once the supplier information has been verified with external data sources by National Treasury a unique supplier number and security code will be allocated and communicated to the supplier. Suppliers will be required to keep their data updated regularly and should confirm at least once a year that their data is still current and updated. 4. Suppliers can provide their CSD supplier number and unique security code to organs of state to view their verified CSD information. 5. Tenderers are required to fill in clearly, legibly, in bold print and black ink their CSD supplier number in the space hereunder: 	
	Name of Supplier	
	Central Supplier Database (CSD) Supplier Number:	

12	<p>TAX CLEARANCE REQUIREMENTS</p> <p>It is a condition of tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Tenderer's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance, during the project, which is required to process your payment certificates.</p> <ol style="list-style-type: none"> 1 In order to meet this requirement tenderers are required to apply via e-filing at any SARS branch office nationally. The Tax Compliance Status (TCS) requirements are also applicable to foreign Tenderers / individuals who wish to submit Tenders. 2 SARS will then furnish the Tenderer with a Tax Compliance Status (TCS) PIN that will be valid for a period of 1 (one) year from the date of approval. 3 In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN. 4 Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za. 5 Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za. 6 Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za. 		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">Security PIN Number</td> <td></td> </tr> </table>	Security PIN Number	
Security PIN Number			
	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">Company / Entity Tax Reference Number</td> <td></td> </tr> </table>	Company / Entity Tax Reference Number	
Company / Entity Tax Reference Number			
13	<p>BILLS OF QUANTITIES/LUMP SUM DOCUMENT</p> <p>The Bills of Quantities document forms part of and must be read in conjunction with all the other documents forming part of the contract documents, the Standard Conditions of Tender, Conditions of Contract, Standard Preambles to all Trades, Specifications, Drawings and all other relevant documentation.</p>		
14	<p>VALUE ADDED TAX</p> <p>The tender price must include for Value Added Tax (VAT). All rates, provisional sum, etc. in the Bills of Quantities must however be net (exclusive of VAT) with VAT calculated and added to the Total Value thereof in the final summary.</p>		
15	<p>FIXED PRICE CONTRACT</p> <p>Should the Bill of Quantities/Lump Sum Document be a fixed price contract, the following clause must be inserted in the Pricing Instructions:</p> <p>Tenderers are to take note that the contract price adjustments are not applicable to this contract. Tenderers should therefore make provision in the Contract Sum, schedule of rates, etc. for possible price increases during the contract period, as no claims in this regard shall be entertained.</p>		

Eco Park: Fencing and Site Clearance for Plessislaer Site

C2.2 - Preliminaries for GCC for Construction Works (Second Edition 2010)

Eco Park: Fencing and Site Clearance for Plessislaer Site

BILL NO. 1

C2 .2 PRELIMINARY AND GENERAL

	NOTES	UNIT	QUANTITY	RATE	AMOUNT
i)	The agreement is to be the General Conditions of Contract for Works of Civil Engineering Construction (Second Edition 2010), published by the S. A. Institution Of Civil Engineering.				
ii)	The Preliminaries are to be the Construction and management requirements for works contracts - Part 1: General engineering and construction works (SANS 1921-1: 2004 Edition 1) prepared by Standards South Africa and shall be deemed to be incorporated herein.				
iii)	Tenderers are referred to the abovementioned documents for the full intent and meaning of each clause thereof (hereinafter referred to by heading and clause number only) for which such allowance must be made as may be considered necessary.				
iv)	Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading.				
v)	Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable").				
vi)	Adjustment of the preliminaries: each item priced, is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time.				
vii)	Time (T) related Preliminaries will only be adjusted for omissions or additions, issued by the Employer, or delays caused by the Employer, for which variation and extension of time has been granted. See Contract Data .				
SECTION A: GENERAL CONDITIONS OF CONTRACT					
A1	General (clause 1) F:..... V:..... T:.....	Item			
A2	Basis of Contract (clause 2) F:..... V:..... T:.....	Item			
A3	Engineer (clause 3) F:..... V:..... T:.....	Item			
A4	Contractor's General Obligation (clause 4) F:..... V:..... T:.....	Item			
A5	Time and Related Matters (clause 5) - As referred to in the Contract Data under Special Condition of Contract. The Contract Period shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods. F:..... V:..... T:.....	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
A6	Payment and Related Matters (clause 6) F:..... V:..... T:.....	Item			
A7	Quality and Related Matters (clause 7) F:..... V:..... T:.....	Item			
A8	Risk and Related Matters (clause 8) F:..... V:..... T:.....	Item			
A9	Termination of Contract (clause 9) F:..... V:..... T:.....	Item			
A10	Claims and Disputes (clause 10) F:..... V:..... T:.....	Item			
<p>SECTION B: SANS 1921-1:2004 (Edition 1): CONSTRUCTION AND MANAGEMENT REQUIREMENTS FOR WORKS CONTRACTS: PART 1</p> <p>Refer to the SCOPE OF WORK for detail requirements:</p>					
B1	Scope F:..... V:..... T:.....	Item			
B2	Normative references F:..... V:..... T:.....	Item			
B3	Definitions F:..... V:..... T:.....	Item			
B4	Requirements for construction and management F:..... V:..... T:.....	Item			
B4.1	General F:..... V:..... T:.....	Item			
B4.2	Responsibilities for design and construction F:..... V:..... T:.....	Item			
B4.3	Planning, programme and method statements F:..... V:..... T:.....	Item			
				R	
Carried forward to collection					

		UNIT	QUANTITY	RATE	AMOUNT
B4.4	Quality assurance F:..... V:..... T:.....	Item			
B4.5	Setting out F:..... V:..... T:.....	Item			
B4.6	Management and disposal of water F:..... V:..... T:.....	Item			
B4.7	Blasting F:..... V:..... T:.....	Item			
B4.8	Works adjacent to services and structures F:..... V:..... T:.....	Item			
B4.9	Management of the Works and site F:..... V:..... T:.....	Item			
B4.10	Earthworks F:..... V:..... T:.....	Item			
B4.11	Testing F:..... V:..... T:.....	Item			
B4.12	Materials, samples and fabrication drawings F:..... V:..... T:.....	Item			
B4.13	Equipment F:..... V:..... T:.....	Item			
B4.14	Site establishment F:..... V:..... T:.....	Item			
B4.15	Survey control F:..... V:..... T:.....	Item			
B4.16	Temporary works F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
B4.17	Existing services F:..... V:..... T:.....	Item			
B4.18	Health and safety F:..... V:..... T:.....	Item			
B4.19	Environmental requirements F:..... V:..... T:.....	Item			
B4.20	Alterations, additions, extensions and modifications to existing works F:..... V:..... T:.....	Item			
B4.21	Inspection of adjoining structures, services, buildings and property F:..... V:..... T:.....	Item			
B4.22	Attendance on nominated and selected subcontractors F:..... V:..... T:.....	Item			
SECTION C: SCOPE OF WORK in accordance with SANS 10403 <i>(The reference to Clauses refer to Table B.1 of SANS 1921-1:2004)</i>					
C1	Certification by recognised bodies - CLAUSE 4.4 F:..... V:..... T:.....	Item			
C2	Agreement certificates - CLAUSE 4.5 F:..... V:..... T:.....	N/A			
C3	Other services and facilities - CLAUSE 4.8 F:..... V:..... T:.....	Item			
C4	Recording of weather - CLAUSE 5.2 F:..... V:..... T:.....	Item			
C5	Management meetings - CLAUSE 5.3 F:..... V:..... T:.....	Item			
C6	Daily records CLAUSE 5.6 F:..... V:..... T:.....	Item			
C7	Bond and guarantees - CLAUSE 5.7 F:..... V:..... T:.....	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
C8	Permits - CLAUSE 5.9 F:..... V:..... T:.....	Item			
C9	Proof of compliance with the law - CLAUSE 5.10 F:..... V:..... T:.....	Item			
SECTION D: SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 (Table A.1)					
D1	Requirements for drawings, information and calculations for which the contractor is responsible CLAUSE 4.1.7 F:..... V:..... T:.....	Item			
D2	The responsibility strategy assigned to the contractor for the works CLAUSE 4.2.1 F:..... V:..... T:.....	Item			
D3	The planning, programme and method statements - CLAUSE 4.3 F:..... V:..... T:.....	Item			
D4	Samples of materials, workmanship and finishes - CLAUSE 4.12.1 F:..... V:..... T:.....	Item			
D5	Fabrication drawings that the contractor is to provide and deliver to the employer - CLAUSE 4.12.2 F:..... V:..... T:.....	Item			
D6	Office for the foreman CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D7	Telephone - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D8	Office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D9	Telephone in office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D10	Sheds - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
Carried forward to collection					R

		UNIT	QUANTITY	RATE	AMOUNT
D11	Provision and erection of signboards - CLAUSE 4.14.6 F:..... V:..... T:.....	Item			
D12	Termination, diversion or maintenance of existing services - CLAUSE 4.17.1 F:..... V:..... T:.....	Item			
D13	Services which are known to exist - CLAUSE 4.17.3 F:..... V:..... T:.....	Item			
D14	Detection apparatus - CLAUSE 4.17.4 F:..... V:..... T:.....	Item			
D15	Additional health and safety requirements - CLAUSE 4.18 F:..... V:..... T:.....	Item			
SECTION E: SPECIFIC PRELIMINARIES					
Section E contains Specific Preliminary items which apply to this contract except where "N/A" (Not Applicable) appears against the item.					
E1	PROPRIETARY BRANDED PRODUCTS The contractor shall take delivery of, handle, store, use apply and/or fix all proprietary branded products in strict accordance with the manufacturers' instruction after consultation with the manufacturer's authorised representative. F:..... V:..... T:.....	Item			
E2	OVERTIME Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the Contractor unless the Engineer/Principal Agent has specifically authorised in writing, prior to the execution thereof, that costs for such overtime are to be borne by the Employer. F:..... V:..... T:.....	Item			
E3	AS BUILT DRAWINGS The position of construction breaks and the extent of individual concrete pours are to be recorded by the Contractor on the Structural Engineer's drawings and are to be submitted to the Engineer/Principal Agent and the Structural Engineer for their records. F:..... V:..... T:.....	Item			
Carried forward to collection					R

SECTION E: SPECIFIC PRELIMINARIES		UNIT	QUANTITY	RATE	AMOUNT
E4	<p>SITE INSTRUCTIONS</p> <p>Site Instructions issued on site are to be recorded in triplicate in a Site Instruction book which is to be maintained on site by the Contractor.</p> <p>F:..... V:..... T:.....</p>	Item			
E5	<p>LABOUR RECORD</p> <p>At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all sub-contractors on the works each day.</p> <p>F:..... V:..... T:.....</p> <p><i>Note : In the event that the contractor fails to satisfy the requirements of this specification, the Employer (Trade & Investment KwaZulu-Natal) may apply any of the sanctions provided in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required report has not been submitted.</i></p>	Item			
E6	<p>PLANT RECORD</p> <p>At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.</p> <p>F:..... V:..... T:.....</p>	Item			
E7	<p>NON CESSION OF MONIES</p> <p>The Contractor shall not cede nor assign his rights or claims to any monies due or to become due under this contract.</p> <p>F:..... V:..... T:.....</p>	Item			
E8	<p>SECTIONAL COMPLETION</p> <p>When it is required that the contract be executed in sections or portions, the tenderer shall allow for all costs in this regard as no claim for additional costs will be entertained.</p> <p>F:..... V:..... T:.....</p>	Item			
E9	<p>LOCAL LABOUR</p> <p>It is a general requirement of this contract that persons normally resident in the ward of the works (Local Labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate Labour not be available within the ward, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ Local Labour (Local Sub-Contractor(s); Skilled; Semi-Skilled; and Unskilled). The Contractor shall in consultation with the local community leaders (Project Steering Committee) with the purpose of negotiating with them regarding the utilization of local resources in the construction process. In this regard, the Contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth. The Contractor shall, in general, maximize the involvement of the local community, however workers from other communities should not exceed 20% of all persons working on the project.</p> <p>F:..... V:..... T:.....</p>	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
E10	<p>IMPORT PERMITS AND DUTIES</p> <p>The responsibility for obtaining the necessary import permits shall rest with the successful Tenderer. No foreign exchange will be arranged or provided by the Administration.</p> <p>Tenderers are to allow in their tenders and pay the ordinary levy imposed on imported items in terms of item 196.10 of Part 8 of Schedule No. 1 of the Customs and Excise Act, 1964 with effect from 1 October 1989.</p> <p>F:..... V:..... T:.....</p>	Item			
E11	<p>CONTRACT PRICE ADJUSTMENT PROVISIONS (CPAP)</p> <p>Notwithstanding anything to the contrary contained in the GCC for Construction Works Second Edition 2010, this Contract shall only when the Construction Period exceeds 6 months and the Contract sum exceeds R1,000,000,00 be subject to the Contract Price Adjustment Provisions Indices Application Manual for use with P0151 indices (CPAP) (Revised 1 January 2013) as published by Statistics South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Head Office <u>will not accept the submission by Tenderers of lists of additional items.</u></p> <p>Where this contract is a Lump Sum contract, the contract will be subject to Contract Price Adjustment Provisions (CPAP) only where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings.</p> <p>F:..... V:..... T:.....</p> <p>E12.6 COMMUNITY LIAISON OFFICER (CLO) <u>UTILISATION OF A COMMUNITY LIAISON OFFICER</u> In addition to the requirements of Clause E9, contained in this document; The Contractor shall allow for and pay any and all costs necessary for the engagement of the services of a Community Liaison Officer (CLO) for the full duration of this contract</p> <p>In the interest of providing a sound service to both the community and the Contractor, a CLO may only manage one project at a given time.</p> <p>A CLO will be identified by the local structures of the ward areas and appointed following fair and transparent interviewing process, to be conducted in the presence of local structures and the contractor representative, in order to assist the Contractor in the procurement of any local labour, etc. required for this project. The Contractor is to liaise with the CLO and afford him any assistance needed in ensuring sound working relations with the local community.</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	<p>Key Responsibilities of the CLO are envisaged to include and not necessary be limited to:</p> <ol style="list-style-type: none"> 1. Assisting local leadership in conducting skills and resources audit which facilitates sourcing labour from within the ward or targeted areas for employment, as required by contractor. 2. Assisting in sourcing labour-only domestic sub-contractors and the procurement of materials from local resources, as required by the contractor. 3. Assisting the contractor by identifying areas of potential conflict and or threats to the project or to stakeholders in the project and recommend appropriate action to the contractor. 4. Assisting contractor and stakeholders in the project in the resolution of any conflict which may arise. 5. Establishing and ensuring that sufficient and open communication channels between the contractor and the work force are maintained. 6. Establish and ensuring that efficient and open communication channels between the contractor and the community are maintained 7. Identifying and reporting to the Contractor regarding issues where communication between stakeholder is necessary, recommend courses of action and facilitate such communications 8. Assisting the Contractor and the work force in the establishment of grievance procedures and necessary recommendation to the Contractor regarding the grievances and solution thereto. 9. Attending to site meetings and project implementation meetings as required by the Contractor and prepare periodic reports as may be required by the Contractor from time to time. 10. Attending to such other duties which are consistent with the functions of a CLO, as may be required by the Contractor from time to time. <p>Tenderers are to price twice the rate of unskilled local labour rate against this item for any and all costs arising out of compliance with the foregoing and in the event of a Tenderer failing to price against this item or making inadequate financial provision against this item for compliance as aforesaid, then no claim for costs or additional cost incurred will be entertained by the Head: Works</p> <p>F:..... V:..... T:.....</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	<p>E12.7 SKILLS DEVELOPMENT ON SITE Contractor in conforming to the object of EPWP that its beneficiaries need to be capacitated with skills that will render them employable in the future. It is then the responsibility of the Contractor that mandatory life skills are provided to 100% of workforce on site and on the job training to labourers from whom the potential for further development has been identified. The latter is not mandatory to all as it covers technical skills.</p> <p>Contractor should also make provision for the possibility that there might be local youth that will need to be placed on the project with an intention to be provided support towards improving their level of competency and productivity.</p> <p>Contractor shall also provide all necessary on-the-job training to targeted labour to enable such labour to master and advance on techniques required to undertake the work in accordance with requirements of the contract in a manner that does not compromise workers health and safety.</p> <p>F:..... V:..... T:.....</p> <p>E12.8 Sub-Contracting for local emerging enterprises The project can support the notion of one main contractor to be appointed whilst several sub-contractors, possibly from local Small, Medium and Micro Enterprises (SMME) group, are employed to under various smaller activities.</p> <p>Two alternatives can be applied for setting out work for sub-contractors, i.e. full responsibilities (provide their own plant, materials and labour) or secondly the main contractor remains responsible for the supply of plant and materials, while the sub-contractor is responsible for implementation, thus providing the skills and labour content only for the various construction activities.</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	<p>Performance and penalties</p> <p>The Contractor performance will be monitored throughout the contract. Should the Contractor fail to fulfil his obligation he will be liable for penalties. Payment of the penalty shall not absolve the Contractor of any claim, or relieve the Contractor of any of his duties, obligations or responsibilities under the contract.</p> <p>- Utilisation of the Sub-Contractors The Contractor's achievement of the targets will be measured quarterly to determine the progress made to date.</p> <p>E12.8.4 Local Suppliers</p> <p>Local material suppliers within the vicinity of the site to be utilise as long as their materials meets the required specification. However, quality and suitability would have to be checked by the employer, if the local suppliers are unable to meet the demand the nearest suitable suppliers are to be used.</p> <p>Production of materials should be done on site, where economies of scale allow e.g. concrete paving blocks should be encouraged which will enable employment creation and also allow for enterprise development.</p> <p>F:..... V:..... T:.....</p>	Item			
E13	<p>HIV/AIDS AWARENESS</p> <p>Tenderers are to price against the following items for compliance with the SPECIFICATION FOR HIV/AIDS AWARENESS bound into this document (The clauses referred to are those of the Specification for HIV/AIDS)</p>				
E13.1	<p>Provide and maintain a condom dispenser in terms of Clause 5.1a)</p> <p>F:..... V:..... T:.....</p>	Item			
E13.2	<p>Provide and maintain HIV/AIDS awareness posters terms of Clause 5.1b)</p> <p>F:..... V:..... T:.....</p>	Item			
E13.3	<p>HIV /Aids Awareness Programme on Site for not less than 90% of workers inclusive of all direct and indirect costs;</p> <p>Engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme in terms of Clause 5.2.1a)</p> <p>F:..... V:..... T:.....</p>	Item			
E13.4	<p>Arrange for workers to attend the HIV Awareness Programme in terms of Clause 5.2.1b)</p> <p>F:..... V:..... T:.....</p>	Item			
E13.5	<p>Reporting</p> <p>Prepare and attach to claims for payment a brief report in terms of Clause 5.3 (see also HIV/STI Compliance Report included with this document).</p> <p>F:..... V:..... T:.....</p> <p>Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (TIKZN) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required reports has not been submitted.</p>	Item			
E14	<p>OCCUPATIONAL HEALTH AND SAFETY ACT NO. 85 OF 1993</p> <p>Tenderers are to allow for costs in providing a project specific ' Construction Phase Safety, Health and Environmental Plan' in accordance with "Section 2 - Specification Data associated with SANS 1921-1:2004" clause C4.18 in "Part C3 - Scope of Work"</p> <p>F:..... V:..... T:.....</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E15	<p>NOTICE BOARD, SITE OFFICE, ETC. Tenderers are to allow for the provision and removal of a project notice board and a site office in accordance with the Principal Agent's requirements.</p> <p>F:..... V:..... T:.....</p>	Item			
E16	<p>IMPORTED MATERIALS AND EQUIPMENT Where imported items are listed in the tender documents, the tenderer shall provide all information called for, failing which the price of any such item, material or equipment shall be excluded from currency fluctuations. (Refer to T2.14 - Schedule of Imported Materials and Equipment .</p> <p>F:..... V:..... T:.....</p>	Item			
E17	<p>CONTRACT DOCUMENTS The drawings issues with these Tender documents do not comprise the complete set but serves as a guide only for tendering purposes and for indicating the scope of works to enable the Tenderer to acquaint him with the nature and extent of the works and the manner in which they are to be executed.</p> <p>Should any part of the drawings not be clearly legible to the Tenderer he shall, before submitting his Tender, obtain clarification in writing from the principal agent.</p> <p>F:..... V:..... T:.....</p>	Item			
E18	<p>GENERAL PREAMBLES The Document Preambles will be the "ASAQS Model Preambles for Trades – 2008" and shall be read in conjunction with the Bills of Quantities and be referred to for the full descriptions of work to be done and materials to be used.</p> <p>F:..... V:..... T:.....</p>	Item			
E19	<p>TRADE NAMES Wherever a Trade Name for any product has been described in the Bills of Quantities 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.</p> <p>F:..... V:..... T:.....</p>	Item			
E20	<p>EXISTING PREMISES OCCUPIED Refer to Scope of Works Part C3 of this Tender Document for information on the occupation of existing buildings.</p> <p>F:..... V:..... T:.....</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E21	<p>INACCURATE AND DEFECTIVE WORK EXECUTED UNDER PREVIOUS CONTRACT</p> <p>The contractor shall, after taking possession of the site and before commencing the work, check all levels, liners, profiles and the like and satisfy himself as to the dimensional accuracy of all work executed under the previous contract which may affect his work.</p> <p>Should any inaccurate or defective work be found, the contractor shall immediately notify the principal agent in writing requesting his instructions with regard thereto and afford every facility to those rectifying such inaccurate or defective work.</p> <p>F:..... V:..... T:.....</p>	Item			
E22	<p>VIEWING THE SITE IN SECURITY AREAS</p> <p>If the site is situated in a security area and the Tenderer must arrange with the Authorities to obtain permission to enter the site for Tendering purposes.</p> <p>F:..... V:..... T:.....</p>	Item			
E23	<p>COMMENCEMENT OF WORKS IN SECURITY AREAS</p> <p>If the works falls within a security area, the contractor must arrange with the Authorities and give the necessary notices 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.</p> <p>F:..... V:..... T:.....</p>	Item			
E24	<p>ENTRANCE PERMITS TO SECURITY AREAS</p> <p>If the works fall 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 control of the Authority.</p> <p>F:..... V:..... T:.....</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E25	<p>SECURITY CHECK OF PERSONNEL</p> <p>The principal agent may require the contractor to have his personnel and workmen, or a certain number of them, security classified.</p> <p>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.</p> <p>F:..... V:..... T:.....</p>	Item			
E26	<p>PROHIBITION ON TAKING PHOTOGRAPHS</p> <p>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 photographs, except when authorised thereto by or on behalf of the Minister.</p> <p>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.</p> <p>F:..... V:..... T:.....</p>	Item			
E27	<p>MANAGEMENT OF WATER</p> <p>Water for Construction purposes must be obtained from alternative water sources (i.e. supply other than water that is produced and distributed by a regulated water service authority from a licenced water treatment works for human consumption), eg dams, rivers, boreholes, springs, rainwater harvesting, recycled sewerage water, etc. The alternative water source shall not be of an inferior quality / standard than that required for construction purposes. The client reserves the right through his agents to test such supplies or request certificates confirming the grade and nature of the water supply. Relevant knowledge of the respective area will be an advantage.</p>				
	Carried forward to collection			R	

SECTION 1

SUMMARY – PRELIMINARY & GENERAL

<u>Collection</u>	Page No.	Amount	
	1	R	
	2	R	
	3	R	
	4	R	
	5	R	
	6	R	
	7	R	
	8	R	
	9	R	
	10	R	
	11	R	
	12	R	
	14	R	
	15	R	
	Carried forward to Final Summary		R

Section No. 1
Preliminary & General
Summary

Eco Park: Fencing and Site Clearance for Plessislaer Site

PART C2.3 BILL OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>BILL NO. 2</u>			
	<u>EXTERNAL WORKS (ALL TRADES)</u> <u>(PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "Standard Preambles To All Trades", "Supplementary Preambles" and "Supplementary Specifications" to this contract for the full requirements of each scheduled item			
	<u>SITE CLEARANCE AND BULK LEVELLING</u>			
	<u>Site clearance</u>			
1	Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scoffling up as required and cart off site to a dump site to be located by the contractor	m2	44 968	
	<u>Removal of trees, etc</u>			
	<u>Pruning of branches, roots, etc.</u>			
2	Pruning of existing tree branches, lengths not exceeding 5m long,	No	78	
3	Pruning of existing surface exposed roots, lengths not exceeding 2,5m long, including excavation, pruning roots and filling excavated surfaces with imported garden soil	No	14	
4	Pruning of existing surface exposed roots, lengths not exceeding 5m long, including excavation, pruning roots and filling excavated surfaces with imported garden soil	No	27	
	<u>Cut down and remove trees, grub up roots and fill in holes:</u>			
5	Tree stump exceeding 200mm and not exceeding 500mm girth.	No	16	
	Carried Forward			R
	Bill No. 2 External Works			

Brought Forward			R
6	Tree stump exceeding 500mm and not exceeding 1000mm girth.	No	8
<u>Bulk excavation, filling, etc.</u>			
7	Grub up, excavate builder's rubble, plastic, metal, wood, etc. and cart away off site to a dump site to be located by the contractor	m3	3 900
<u>BRICK BOUNDARY WALLS</u>			
<u>Excavation other than bulk</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
8	Trenches	m3	415
9	Holes	m3	264
<u>Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 95% Mod AASHTO density</u>			
10	Not exceeding 500mm deep for placing and removing formwork to walls etc, 500mm away from excavated face	m2	1 418
11	Exceeding 500mm and not exceeding 1500mm deep for placing and removing formwork to bases, strip footings, walls etc cast against excavated faces	m2	1 418
<u>Extra over excavations in earth for excavation in</u>			
12	Soft rock	m3	68
<u>Extra over all excavations for carting away</u>			
13	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	361
<u>Risk of collapse of excavations</u>			
14	Sides of trench and hole excavations not exceeding 1,5m deep	m2	2 835
Carried Forward			R
Bill No. 2 External Works			

Brought Forward			R
<u>Keeping excavations free of water</u>			
15	Keeping excavations free of all water other than subterranean water	Item	
<u>Filling, etc. other than bulk</u>			
<u>Earth filling obtained from excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density</u>			
16	Backfilling to trenches, holes, etc.	m3	318
<u>Prescribed density tests on filling</u>			
17	Modified AASHTO Density tests	No	53
<u>Compaction of surfaces</u>			
18	Compaction of ground surface under strip footings, 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	679
<u>Soil poisoning</u>			
<u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years</u>			
19	To bottoms and sides of trenches, etc.	m2	3 514
<u>Reinforced concrete cast against excavated surfaces</u>			
<u>25MPa/19mm concrete</u>			
20	Strip footings	m3	104
21	Bases	m3	66
22	Concrete infill in hollow brick columns	m3	20
Carried Forward			R
Bill No. 2 External Works			

Brought Forward			R
<u>Test cubes</u>			
23	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	32
<u>Rough formwork (degree of accuracy III)</u>			
<u>Rough formwork to sides</u>			
24	Strip footings (Provisional)	m2	415
25	Bases (Provisional)	m2	294
<u>Reinforcement (Provisional)</u>			
<u>Mild steel reinforcement to structural concrete work</u>			
26	Various diameter bars	t	16,15
<u>Brickwork in foundations (Provisional)</u>			
<u>Brickwork of NFX bricks in class II mortar laid in cross-bonded</u>			
27	One brick walls	m2	623
28	440 x 440mm Hollow columns of half brick skins, including wire ties, to receive concrete infill (Concrete infill elsewhere measured)	m	245
<u>Brickwork in superstructure</u>			
<u>Brickwork of NFP bricks in class II mortar</u>			
29	One brick walls	m2	423
30	440 x 440mm Hollow columns of half brick skins, including wire ties, to receive concrete infill (Concrete infill elsewhere measured)	m	297
<u>Brickwork sundries</u>			
<u>2.5mm Galvanised brickwork reinforcement</u>			
31	75mm Wide reinforcement built in horizontally	m	2 125
Carried Forward			R
Bill No. 2 External Works			

Brought Forward			R
32	155mm Wide reinforcement built in horizontally	m	4 100
<u>Bagging of 1:3 cement and sand mixture</u>			
33	On brick walls, piers, etc	m2	639
<u>Joint forming material in movement joints</u>			
34	12mm Bitumen impregnated fibre board built in vertically through brick walls	m2	95
<u>Face Brickwork</u>			
<u>"Wild Wheat Travertine" FBS or other equally approved face bricks pointed with tinted recessed horizontal and vertical joints</u>			
35	Extra over brickwork for face brickwork in foundations on both sides of walls (Provisional)	m2	216
36	Extra over brickwork for face brickwork in foundations to hollow wall columns (Provisional)	m2	149
37	Extra over brickwork for face brickwork on both sides of walls	m2	423
38	Extra over brickwork for face brickwork to hollow wall columns (Provisional)	m2	293
39	Extra over brickwork for face brickwork header course	m	1 117
<u>Waterproofing</u>			
<u>Two coats "Brixal" or other equally approved emulsion bitumen emulsion waterproof coating</u>			
40	On bagged brick walls	m2	639
<u>'Sika' or other equally approved polyurethane sealing compound including backing cord, bond breaker, primer, etc.</u>			
41	15 x 15mm In vertical expansion joints including raking out expansion joint filler as necessary	m	823
<u>FENCING</u>			
Carried Forward			R
Bill No. 2 External Works			

Brought Forward		R
<u>Alterations</u>		
<u>Carefully remove precast concrete fencing</u>		
42	Carefully remove precast concrete fence panels size 1440 x 300mm and set aside for re-instating (re-instating elsewhere measured)	No 225
43	Carefully remove damaged precast concrete fence panels size 1440 x 300mm and cart off site	No 45
<u>Install precast concrete panels</u>		
44	Re-instate existing precast concrete panels size 1440 x 300mm high, placed onto existing 120 x 145mm slotted posts, grouting in position with 3:1 cement mortar	No 225
45	Install new precast concrete panels size 1440 x 300mm high with single sided louvre pattern, placed onto existing 120 x 145mm slotted posts, grouting in position with 3:1 cement mortar	No 45
<u>Metalwork</u>		
<u>Diamond Wire Mesh</u>		
46	70 x 150mm Galvanised diamond razor wire mesh fence 1800mm high with seven horizontal strand wire of 2.9mm diameter fixed to 2400mm high posts, y-standards, droppers, etc. with posts at 2475mm centres with 600mm bottom ends cast into concrete base. Tenderers are referred to Architects drawings annexed to these Bills of Quantities, drawing number TIKZN-UKU-A-1002	m 654
47	70 x 150mm Galvanised diamond razor wire mesh fence 1800mm high with seven horizontal strand wire of 2.9mm diameter fixed to 1800mm high posts, y-standards, droppers, etc. with posts at 2475mm centres including base plate for posts, steel posts to be bolted into existing brick walls with chemical anchors. Tenderers are referred to Architects drawings annexed to these Bills of Quantities, drawing number TIKZN-UKU-A-1002	m 200
Carried Forward		R
Bill No. 2 External Works		

Brought Forward		R
<u>Gates, etc.</u>		
48	Single gate overall size 1000 x 2100mm high formed of frame and mullions formed of 100 x 50 x 5mm hot dipped galvanised sections and filled in with 70 x 150mm razor wire diamond mesh complete with posts, keep, etc. Tenderers are referred to Architects drawings annexed to these Bills of Quantities, drawing number TIKZN-UKU-A-1002	No 1
49	Double swing gate overall size 8000 x 2100mm high formed of two equal leaves with frame and mullions formed of 100 x 50 x 5mm hot dipped galvanised sections and filled in with 70 x 150mm razor wire diamond mesh complete with posts, keep, etc. Tenderers are referred to Architects drawings annexed to these Bills of Quantities, drawing number TIKZN-UKU-A-1002	No 1
<u>Anti-Bandit / Anti-Climb / Anti-Cut invisible fence of galvanised steel fencing:</u>		
50	Medium galvanized mesh panels with widths not exceeding 2493mm wide and height of 1800mm high bolted to 76 x 76 x 2mm x 2400mm high galvanised steel square posts, steel posts to be embedded 600mm into concrete infill in brick columns (concrete infill elsewhere measured). 76 x 12mm Horizontal aperture. No baseplate required, fence is to be installed above 510mm high brick walls (Brick walls elsewhere measured). Tenderers are referred to Architects drawings annexed to these Bills of Quantities, drawing number TIKZN-UKU-A-1002	m 830
Carried to Summary		R
Bill No. 2 External Works		

Bill No		Page No	Amount
<u>FINAL SUMMARY</u>			
1	Preliminaries	16	
2	External Works	23	
	Sub - Total		R
	Add: Contingency (10%)		R
	Sub-Total		R
	Add: Budgetary Amount For Occupational Health and Safety Specialist	Item	200 000,00
	Sub-Total		R
	Value Added Tax (15%)		R
	Carried to Form of Tender		R

Eco Park: Fencing and Site Clearance for Plessislaer Site

PART C3. SCOPE OF WORKS

C3.1 SCOPE OF WORKS
GCC FOR CONSTRUCTION WORKS (Second Edition 2010)

Scope of Works complied in accordance with SANS 10403 where reference is made to this part of SANS 1921-1:2004

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender no:	3410/2026/01

1	<p><u>SECTION 1</u></p> <p><u>EXTENT OF THE WORKS</u></p> <p>1.1 EMPLOYERS OBJECTIVES</p> <p>The purpose of this project is to appoint a suitable service provider who will render professional services for fencing for the Eco Park, the site is in Plessislaer, Pietermaritzburg, 3216.</p> <p>1.2 OVERVIEW OF THE WORKS</p> <p>The contract comprises of fencing the site.</p> <p>1.3 EXTENT OF THE WORKS</p> <p>The contract comprises with the following works breakdown:</p> <p>Civil Works: Site clearance, relocation of rubble/building materials, trench excavations, backfilling to trenches, cart away surplus materials. Structural Works: Concrete strip footings, concrete bases, foundation brickworks.</p> <p>1.4 LOCATION OF THE WORKS</p> <p>The site is located in Edendale within the Msunduzi District Municipality . GPS Co-ordinates for the site is 29°38'38.54"S and 30°20'36.97"E</p> <p>1.5 TEMPORARY WORKS</p> <p>All temporary work to comply with the Occupational Health and safety Act (Act 85 of 1993). All temporary works shall be designed and costed for by the Contractor.</p>
2	<p><u>ENGINEERING</u></p> <p>2.1 EMPLOYER'S DESIGN</p> <p>Not applicable</p> <p>2.2 DESIGN BRIEF</p> <p>Not applicable</p> <p>2.3 DRAWINGS</p> <p>See list of drawings/Annexure's attached to this document.</p>

2.4	<p>DESIGN PROCEDURES</p> <p>Not applicable</p>
3	<p><u>PROCUREMENT</u></p> <p>3.1 PREFERENTIAL PROCUREMENT PROCEDURES</p> <p>This tender will be subject to the implementation of the Preferential Procurement Regulations, 2022, pertaining to the Preferential Procurement Policy Framework Act, Act Number 5 of 2000 and the relevant Supply Chain Management Legislation and the KwaZulu-Natal Supply Chain Management Policy Framework published by the KwaZulu-Natal Provincial Treasury. Tenderers are referred to www.kzntreasury.gov.za for access to the relevant documents.</p> <p>Tenderers are advised to familiarize themselves with the contents of the KwaZulu-Natal Supply Chain Management Policy Framework regarding Preference Point Systems, evaluation of tenders appeals and other matters.</p> <p>3.2 RESOURCE STANDARD PERTAINING TO TARGETED PROCUREMENT</p> <p>NOTE : This project will be adjudicated as not exceeding R 50,000 000,00</p> <p>3.3 PREFERRED SUBCONTRACTORS/SUPPLIERS</p> <p>Not applicable</p> <p>3.4 SUBCONTRACTING PROCEDURES</p> <p>Not applicable</p>
4	<p><u>CONSTRUCTION</u></p> <p>4.1 APPLICABLE SANS 2001 STANDARDS FOR CONSTRUCTION WORKS</p> <p>Whenever the words "shall be deemed to be included in the description", "shall be stated" or other words having the same effect, appear in the Standard System, it shall be deemed that all descriptions in these Bills of Quantities/Lump Sum documents incorporated such inclusions and statements whether specifically stated or not.</p> <p>The Contractor is hereby informed that where SABS/SANS Specifications are referred to in these Bills of Quantities/Lump Sums documents and Specifications thereto, then ONLY the Specification of Work Clauses will apply. The method of measurement and payment clauses will NOT apply to this Contract.</p> <p>The Contractor is hereby informed that risk of collapse and keeping excavations free from water (excluding subterranean water) generally are deemed to be included in the descriptions unless accommodated in the system of measurement. Please refer to the Geotechnical Investigation report when included at the end of these tender documents.</p> <p>Whenever reference is made to "Sub-Contractor", "Nominated Sub-Contractor" or the like in the specifications included or referred to in these Bills of Quantities/Lump Sums documents, it shall be deemed to mean "Contractor" as defined.</p> <p>4.2 APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS</p> <p>See above 4.1</p>

4.2	<p>APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS</p> <p>See above 4.1</p>						
4.3	<p>PARTICULAR / GENERIC SPECIFICATIONS</p> <p>The Contractor is referred to the following documents whether attached to this document or not:</p> <table border="0"> <thead> <tr> <th><u>SPECIFICATION</u></th> <th><u>PAGES</u></th> </tr> </thead> <tbody> <tr> <td>Specification for HIV/AIDS Awareness (CIDB)</td> <td>HIV1 TO HIV3</td> </tr> <tr> <td>Model Preambles for Trades 2008</td> <td>1 to 49</td> </tr> </tbody> </table>	<u>SPECIFICATION</u>	<u>PAGES</u>	Specification for HIV/AIDS Awareness (CIDB)	HIV1 TO HIV3	Model Preambles for Trades 2008	1 to 49
<u>SPECIFICATION</u>	<u>PAGES</u>						
Specification for HIV/AIDS Awareness (CIDB)	HIV1 TO HIV3						
Model Preambles for Trades 2008	1 to 49						
4.4	<p>CERTIFICATION BY RECOGNIZED BODIES</p> <p>Not applicable</p>						
4.5	<p>AGRÉMENT CERTIFICATES</p> <p>Not applicable</p>						
4.6	<p>PLANT AND MATERIAL PROVIDED BY THE EMPLOYER</p> <p>Not applicable</p>						
4.7	<p>SERVICES AND FACILITIES PROVIDED BY THE EMPLOYER</p> <p>Not applicable</p>						
4.8	<p>OTHER SERVICES AND FACILITIES</p> <p>The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Administration.</p> <p>The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.</p> <p>The Contractor is advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.</p>						
5	<p><u>MANAGEMENT</u></p>						
5.1	<p>APPLICABLE SANS 1921 STANDARDS</p> <p>Tenderers are referred to SECTION 2 : SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 IN THIS DOCUMENT</p>						

5.2 RECORDING OF WEATHER

The Contractor shall keep record of abnormal climatic conditions to facilitate the adjudication of claims for extension of the contract period.

The Contractor shall allow in his programme for the following number of days for rain days (rain > 10mm per day) as per the table below:

CURRENT YEAR		YEAR + 1	YEAR + 2
April	w/days		
May	w/days		
June	w/days		
July	w/days		
August	w/days		
September	w/days		
October	w/days		
November	w/days		
December	w/days		
October	w/days		
November	w/days		
December	w/days		

5.3 MANAGEMENT MEETINGS

In order to facilitate the smooth functioning of the Works and to ensure the closest co-operation between all the parties concerned, the Employer will call meetings every two weeks to be held on the site, at which a senior member of the Contracting firm and the General Foreman of the Works will always be required to be present.

In addition to the above, other persons will be required to attend these meetings as and when their presence is necessary, e.g., Consultants in all disciplines, representatives of the various Sub-Contractors, etc. Proper minutes of these meetings will be kept by the Employer\Principal Agent and copies will be circulated to all persons attending the meetings and to others who need to be kept informed.

5.4 FORMS FOR CONTRACT ADMINISTRATION

The Employer shall provide all necessary forms.

5.5 ELECTRONIC PAYMENTS

The Contractor shall provide all required information to the Employer to facilitate electronic payments upon request.

5.6 DAILY RECORDS

The Contractor shall keep daily records of people and equipment employed as well as a site diary in respect of work performed on the site. At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all Sub-Contractors on the works each day. At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.

5.7 BONDS AND GUARANTEES

The Contractor shall within 10 calendar days after receiving notice from the Engineer and prior to 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 bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data.

5.8	<p>PAYMENT CERTIFICATES</p> <p>Requirements will be in accordance with the Employers prescriptions.</p>
5.9	<p>PERMITS</p> <p>The Contractor is advised that, in the case of an existing building or institution, all security measures in force will remain in operation and he must acquaint himself and his Employees with them as he and his Employees will at all times be subject to these measures.</p> <p>The Contractor will on no account extend his operations beyond the confines of the building site as indicated by the Employer and must ensure that all his Employees are made aware of these limits. Any Employee disregarding this instruction and found outside the limit of the building site without authority, shall be redeployed immediately and shall not again be employed on this Contract.</p> <p>The Contractor will be responsible for ensuring that this instruction is strictly enforced and must provide and remove upon completion or when directed, such other necessary temporary barriers, fences, etc., as may be required and is to allow opposite this item for any charges he may wish to make in this connection.</p> <p>The Employer will accept no responsibility whatsoever for damage to or the loss of plant, materials, etc., from the site.</p>
5.10	<p>PROOF OF COMPLIANCE WITH THE LAW</p> <p>The following certificates must be provided before first delivery is taken:</p> <ul style="list-style-type: none"> - HIV/STI Report (Bound into this document) - Soil Protection Certificate - Concrete test and cube certificates - Soil compaction certificates - Latest National Building Regulation
5.11	<p>INSURANCE PROVIDED BY THE EMPLOYER</p> <p>Not Applicable</p>
<p>Clause Numbers</p> <p>4.1.7</p> <p>4.2.1</p> <p>4.2.2</p> <p>4.2.3</p>	<p><u>SECTION 2</u></p> <p><u>SPECIFICATION DATA ASSOCIATED WITH SANS 1921-2004</u></p> <p>The requirements for drawings, information and calculations for which the Contractor is responsible are:</p> <p>Not Applicable</p> <p>The responsibility strategy assigned to the Contractor for the works is:</p> <p>Strategy C</p> <p>The structural engineer is:</p> <p>Gibb Engineering</p> <p>Drawings & other info are to be submitted in accordance with the contractors programme</p> <p>Yes</p>

4.3	<p>The planning, programme and method statement are to comply with the following:</p> <ul style="list-style-type: none"> - Format of programme to be MS Projects - Detailed programme with their dependencies - Critical path activities, with resource allocation and construction methodology - Programme to be updated frequency in line with progress to date
4.12.1	<p>Samples of materials</p> <p>The work is to be executed with materials of the best specified and in the most substantial and workmanlike manner under the inspection of the Employer and to his satisfaction.</p> <p>The Contractor shall furnish, without delay, such samples as called for or may be called for by the Employer, who may reject all materials or workmanship not corresponding with the approved sample.</p> <p>The samples of materials, workmanship and finishes that the Contractor is to provide and deliver to the employer are:</p> <ul style="list-style-type: none"> - Fencing samples - Face brick samples. - Brick wall panel 2m x 2m. - Tested trial mix to be approved by the Engineer.
4.12.3	<p>Office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are:</p> <p>OFFICE FOR FOREMAN</p> <p>Provide, erect, maintain and remove at completion a suitable temporary office for the Contractor or his Foreman, perfectly secured, lighted and ventilated and having a desk with drawers.</p> <p>TELEPHONE</p> <p>The Contractor shall provide a telephone on the site for the use of the Contractor and all Sub-Contractors for the duration of the Contract, and must make the necessary application for connection, give all notices and pay all fees, rentals and charges for the service and also for all calls.</p> <p>OFFICE FOR INSPECTOR OF WORKS</p>
	<p>Provide, erect, maintain and remove at completion a well constructed temporary office for the Inspector of Works not less than 4 x 3 m on plan and 3 m high to eaves to the approval of the Employer. The office shall be constructed of wood framing covered externally with corrugated iron or corrugated asbestos and with a lean-to roof covered with the same material as the external wall covering. The office shall be lined internally with soft board or other approved material and a ceiling shall be provided of the same material as the internal lining. A suspended wood floor shall be provided and is to finish not less than 300 mm above the ground level. A lockable door and a window, which provides adequate light and ventilation, shall be fitted.</p> <p>An office constructed of 115 mm thick brick-work and provided with a screeded concrete floor and roofed and ceiled as above described may be accepted as an alternative but prior permission of the Employer will be necessary before construction of such an office is commenced and his requirements shall be stated and fulfilled by the Contractor.</p> <p>The office shall be fitted in an approved manner with a sloping topped desk of height and length suitable for the laying out and studying of drawings, a desk or table with not less than two lock-up drawers, shelves, seating and wash-stand, and the Contractor shall provide all necessary attendance.</p> <p>TELEPHONE IN OFFICE FOR INSPECTOR OF WORKS</p> <p>The Contractor shall arrange for the installation of a lockable telephone in the Office for the Inspector of Works for the duration of the Contract. The Contractor will be required to make the necessary application for connection and give all notices on behalf of the Employer. The Employer will, however, be responsible for the direct payment of all fees, rentals and other charges by Telkom for the service for the Inspector of Works and for all calls made from this telephone.</p>

	SHED
	Provide, erect, maintain and remove at completion, ample temporary sheds for the proper storage of materials and for the use of the workmen, and remove when no longer required.
4.14.6	Requirement for the termination, diversion or maintenance of existing services:
	Should the Contractor come in contact with any underground cables or pipes during excavations, immediate notification must be made to the Employer and all work in the vicinity of such cables, pipes, etc., shall cease until authority to proceed has been obtained from the Employer. Should the Contractor damage underground cables or pipes resulting in a disruption of services to an existing institution such damage shall be repaired immediately.
4.17.1	Services which are known to exist on the site:
	Contractor to investigate and provide detail drawings.
4.17.3	Requirement for detection apparatus
	None
4.17.4	ADDITIONAL HEALTH AND SAFETY REQUIREMENTS ARE:
	By the submission of a tender, any Tenderer will, if awarded the contract to which this tender document relates,
4.18	Tenderers are therefore advised to study the 'Construction Safety, Health and Environmental
	WORK BY NOMINATED AND SELECTED SUBCONTRACTORS COMPRISE:
	Not applicable
4.22	WORK BY NOMINATED AND SELECTED SUBCONTRACTORS COMPRISE:
	Not applicable

C3.2 - SPECIFICATION FOR HIV/AIDS AWARENESS

1 Scope

This generic specification contains requirements applicable to the reduction of the risk of transfer of the HIV virus between and among construction workers and the local community through the following four strategies:

- a) raising awareness about HIV/AIDS;
- b) providing construction workers with access to condoms;
- c) HIV counselling, testing and referral services; and
- d) Sexually Transmitted Infection diagnosis and treatment.

2 Normative references:

The following standard contains provisions that, through reference in this text, constitute provisions of this standard:

SANS 4074 ISO 4074, *Condom Rubbers*

3 Definitions and Abbreviations

3.1 Definitions

Construction Worker: all persons in the employ of the contractor or in the employ of any of the subcontractors contracted by the contractor.

Local Community: the communities local to the site which are most likely to have contact with the construction worker and, in particular, sex workers in those communities.

Service provider: the natural or juristic person recognised by the South African Department of Health as specialist in conducting Aids Awareness Programmes.

3.2 Abbreviations

STI: Sexually transmitted infection

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immune Deficiency Syndrome

4 Objectives

The objectives are to:

- a) reduce the risk of transfer of the HIV virus between and among construction workers and the local community;
- b) raise awareness amongst construction workers and the local community of the risk of infection with the HIV virus;
- c) promote early diagnosis; and
- d) assist affected individuals to access care and counselling.

5 Requirements

5.1 General requirement

The contractor shall, in order to satisfy the objectives stated in 4:

- a) make condoms complying with the requirements of SABS ISO 4074 available to all construction workers at readily accessible points on the site, suitably protected from the elements, for the duration of the contract;
- b) either place and maintain HIV/AIDS awareness posters of size of not less than A1 in areas which are highly trafficked by construction workers, or provide construction workers with a pamphlet, in languages largely understood by construction workers, which
- c) encourage voluntary HIV/STI testing;
- d) provide information concerning counselling, support and care of those that are infected services; and
- e) comply with the requirements of 5.2.

The provisions of 5.1 c) and d) do not apply to this contract.

5.2 HIV awareness programme

5.2.1 The contractor shall:

- a) engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme which is structured to achieve the outcomes stated in 5.2.3 for contract workers as soon as a construction workers camp is established and populated or, where no such camp is established, within two weeks of the commencement of a significant portion of the works and at subsequent intervals, if any, provided for in the scope of works; and
- b) arrange for, provide a suitable venue, and instruct all construction workers to attend the HIV Awareness Programme and notify the Employer's Representative of the date, time and venue whenever a session with construction workers is conducted.

5.2.2 The contractor shall do nothing to dissuade construction workers from attending such an HIV Awareness Programme and shall take all reasonable steps to ensure that a minimum of 90% of construction workers engaged in the works attend such a programme, when it is conducted.

5.2.3 The outcomes of the HIV Awareness Programme shall as a minimum, result in contract workers exposed to such a programme being able to:

- a) communicate the existence of problems of HIV and be able to outline the consequences of transmission of HIV to or from the local community;
- b) recall and communicate the mode of HIV transmission and preventative measures including the proper use of the condom.

The HIV/ Aids awareness programme described in 5.2 is to be repeated at four month intervals throughout the duration of the contract. (Four times in total, including the initial one at the start of the contract)

5.3 Reporting

5.3.1 The contractor shall prepare and attach to his claims for payment a brief report which outlines how the actions taken by the contractor in the period for which payment is claimed satisfy the requirements and a schedule which lists the names, identity numbers, trade / occupation and name of employer of all construction workers exposed to the programme (see **HIV/STI Compliance Report**).

5.3.2 The employer's representative shall certify the report and schedule described in 5.3.1 whenever a claim for payment is issued to the employer.

Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (TIKZN) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum.

The *HIV /Aids* awareness programme described in 5.2 shall in addition *be conducted* for the benefit of the local community on two occasions in the community centre nearest to the building site. The contractor shall be *responsible* for inviting identifiable community-based *institutions and organisations, churches, and schools to participate in the programme.*

C3.3 - HIV/STI COMPLIANCE REPORT

Pro-forma reporting format in terms of the SPECIFICATION FOR HIV/AIDS AWARENESS

Payment Claim number:

Period covered by payment claim:

1. Distribution of condoms (briefly describe where and how condoms are distributed).

2. Posters / pamphlets (briefly describe where posters were placed / how pamphlets were distributed).

3. Voluntary testing (briefly describe the actions taken / information provided to promote testing).

4. Counselling, support and care (summarise information provided).

5. HIV awareness programme (briefly describe action).

Eco Park: Fencing and Site Clearance for Plessislaer Site

PART C4. SITE INFORMATION

C4.1 SITE INFORMATION
GCC FOR CONSTRUCTION WORKS (Second Edition 2010)

Project title:	Eco Park: Fencing and Site Clearance for Plessislaer Site
Tender No.	3410/2026/01

C4.1 Site Information

C4.1	GENERAL
(a)	The study area is underlain by sandy fill and colluvial soils and residual soil. Groundwater seepage was encountered in a single test pit on site at a depth of approximately 0.4m below ground level. This is due to the test pit being excavated close to the pond.
(b)	The site comprises existing wastewater ponds that was from the old wastewater treatment works. The ponds are filled with water
C4.2	GEOTECHNICAL INVESTIGATION REPORT
(a)	Refer to report annexured to tender document for the geotechnical site information
C4.3	THE TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT
(a)	Refer to report annexured to tender document for the Terrestrial Biodiversity Compliance Statement

Eco Park: Fencing and Site Clearance for Plessislaer Site

PART C5 - DRAWINGS / ANNEXURES

C5.1 - LIST OF DRAWINGS/ANNEXURES

Eco Park: Fencing and Site Clearance for Plessislaer Site

Tender No.:	3410/2026/01	Project Code:	TBC
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(Where drawings/annexure's are issued, document compilers must insert the following paragraph and list the applicable drawings/annexure's below.)

The following drawings/annexure's shall be issued during the Tender period to form part of the tender documentation. Where applicable, drawings/annexure's could be re-issued to the Contractor at commencement of the construction phase.

<u>DRAWING NO</u>	<u>DESCRIPTION</u>
	Architect Drawings
TIKZN-UKU-A-1001	Site Plan - Boundary Wall
TIKZN-UKU-A-1002	Site Plan - Boundary Wall
	Civil and Structural Drawings
TIKZN-UKU-C-1001	Site Plan - Boundary Wall

<u>ANNEXURES</u>	
Annexure 1	Model Preambles for Trades 2008
Annexure 2	Map of Tender submission location
Annexure 3	Joint Venture Agreement
Annexure 4	Builders Lien Agreement
Annexure 5	Geotechnical Investigation Report
Annexure 6	The Terrestrial Biodiversity Compliance Statement
Annexure 7	Employment Contract
Annexure 8	Attendance Register
Annexure 9	Site Location
Annexure 10	Architect Drawings
Annexure 11	Civil and Structural Engineer Drawings

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURES

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 1

Model Preambles for Trades



MODEL PREAMBLES FOR TRADES

2008

*forming part of
the bills of quantities*

Project:

Contract Reference Number:

EXPLANATORY NOTES AND INSTRUCTIONS ON THE USE OF THESE MODEL PREAMBLES

1. The document

- 1.1 This document is published by and is available from the Association of South African Quantity Surveyors, P.O. Box 3527, Halfway House, 1685. Telephone (011) 315 4140. E-mail: administration@asaqs.co.za
- 1.2 The contents of this document are intended to cover workmanship and materials encountered in a significant majority of projects. If a material is not encountered in a significant majority of projects, its preamble will in all likelihood not be included in this document
- 1.3 By its very nature, this document is a "Model" document and one that is designed to act as a basis upon which to build. It is anticipated that it will be supplemented by a "Supplementary Preambles" document included in the text of the bills of quantities that will include, *inter alia*, the following:
 - 1.3.1 supplementary clauses of a general nature that practitioners may deem necessary to cover their own individual requirements,
 - 1.3.2 additional clauses pertaining to specific materials incorporated in a project and not covered by the Model Preambles,
 - 1.3.3 amendments to anything contained in the Model Preambles. A clause has been incorporated in the "General" section of the document stipulating that anything contained in the "Supplementary Preambles" which is at variance to that which is contained in the Model Preambles, will take precedence over the Model Preambles and apply to the works in hand
- 1.4 It is intended that this document will be used by reference only in the text of the bills of quantities and will NOT be bound or reproduced therein

2. The basic philosophy

- 2.1 Wherever possible, reference has been made throughout the preambles to South African National Standards (SANS) to describe materials and methods respectively. It is therefore incumbent on the users of these preambles to have ready access to the relevant Specifications and Codes. Where such Specifications or Codes do not exist, suitable preambles have been compiled
- 2.2 These preambles have been designed to assist in abbreviating descriptions in the text of the bills of quantities and practitioners are encouraged to make use of this facility. e.g. The description of a stormwater catchpit would read:

"Brick stormwater catchpit size internally 600 x 400 x 1 200mm deep to invert fitted with and including a 450 x 300mm x 59kg cast iron grating and frame"
- 2.3 Wherever alternatives exist in respect of materials or workmanship, specific choices have been made in these preambles. Should users require different choices to specific items, these should be referred to in the Supplementary Preambles as outlined in clause 1.3

3. Additional notes in the use of these Model Preambles

3.1 Concrete, Formwork and Reinforcement

The Project Specification embodied in these preambles was compiled in collaboration with the Authors of SANS 1200G, which forms the basis for the Concrete, Formwork and Reinforcement model preambles

Users of these preambles are advised to submit a copy of the Model Preambles to the Engineers involved in a project for their scrutiny. Any amplifications, amendments, etc required by individual Engineers would then be incorporated in the Supplementary Preambles referred to in item 1.3

3.2 Roof Coverings

The roof coverings included in these Model Preambles are limited in their content and therefore any roofing material not included in these Preambles will need to have its full preamble included in the Supplementary Preambles

3.3 Structural Steelwork

The comments made under item 3.1 apply equally to Structural Steelwork

Note that the protective treatment of the structural steel covers only the treatment up to and including the primer (and patching after erection). The finishing coats of paint must be fully described and included either in the "Structural Steelwork" or in the "Paintwork" trade, as the practitioner wishes

MODEL PREAMBLES FOR TRADES

CONTENTS

REFERENCE	TRADE	PAGE
A	General	2
B	Alterations	3
C	Earthworks	4
D	Concrete, Formwork and Reinforcement	6
E	Precast Concrete	10
F	Masonry	11
G	Waterproofing	14
H	Roof Coverings etc	15
I	Carpentry and Joinery	17
J	Ceilings, Partitions and Access Flooring	20
K	Floor Coverings, Wall Linings, etc	22
L	Ironmongery	23
M	Structural Steelwork	24
N	Metalwork	25
O	Plastering	29
P	Tiling	31
Q	Plumbing and Drainage	32
R	Glazing	41
S	Paintwork	42
T	Paperhanging	44
U	External Works	45

A. GENERAL

A.1 APPLICATION OF CLAUSES

These Model Preambles for Trades, and any Supplementary Preambles, shall be read in conjunction with and shall form part of the descriptions of items in the bills of quantities

Where descriptions or Supplementary Preambles in the bills of quantities differ from these Model Preambles for Trades, the descriptions or Supplementary Preambles in the bills of quantities shall take precedence. Where supplementary preambles differ from descriptions in the bills of quantities, the descriptions in the bills of quantities shall take precedence

Except where otherwise stated, all preambles contained in any individual Trade Preamble shall apply equally to any work of a similar nature in all other trades

A.2 ABBREVIATIONS

The following abbreviations shall apply:

AASHTO	–	American Association of State Highway and Transportation Officials
AISI	–	American Institute of Steel Industries
BS	–	British Standard
CKS	–	Coordinating Specifications issued by the Central Coordinating Committee under the auspices of the South African Bureau of Standards
CSIR	–	Council for Scientific and Industrial Research
SANS	–	South African National Standards and the number following shall refer to the relevant specification or code of practice as the case may be

A.3 MATERIALS AND WORKMANSHIP

Materials and workmanship shall be the best of their respective kinds. Only new and undamaged materials shall be used in the Works. Materials to be permanently installed into the works shall not be used for any temporary purposes on site. Work shall be to the approval of the Principal Agent and shall be executed in accordance with the relevant manufacturer's written recommendations and instructions where applicable

A.4 PROPRIETARY PRODUCTS

For the purposes of submission of tenders, rates for items described in the bills of quantities by trade names, catalogue references, etc shall be for the particular type and manufacture specified

The approval of the Principal Agent shall be obtained prior to any substitution and where products or materials etc other than those specified are used, adjustments in the rates will be made if necessary

A.5 ASSEMBLING

Rates for manufactured items shall include assembling complete and handing over in proper working order

A.6 REFERENCES IN DESCRIPTIONS

Any references given in brackets at the end of certain descriptions shall refer to the relevant references on the drawings or schedules

A.7 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter and other substances and shall be suitable for its intended use

A.8 APPLICATION OF THE NATIONAL BUILDING REGULATIONS

All work shall be executed in accordance with the requirements of SANS 10400

A.9 ACCURACY IN BUILDINGS

The dimensional and positional accuracy of the buildings and their component parts shall comply with Grade II requirements of SANS 10155 unless otherwise stated

A.10 REFERENCES TO OTHER DOCUMENTS

References in these "Model Preambles for Trades" to other documents, including SANS, CKS and BS, shall pertain to the latest edition thereof including all amendments thereto at the date for submission of the tender

B. ALTERATIONS

B.1 ALTERATIONS

In taking down and removing existing work the utmost care shall be observed to prevent any structural or other damage to remaining portions of the building. The Contractor shall ensure the stability of all structures during alteration work

Special care shall be exercised during the progress of the work to ensure that any electrical installations, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Principal Agent if any disconnection or alterations become necessary

The Contractor shall take all precautions necessary to prevent any nuisance from dust whilst carrying out the work

B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC

Materials recovered from the alterations (except where described as to be re-used or to be handed over to the Employer) will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in new work without written permission from the Principal Agent

Materials described as "removed" shall be removed from the site immediately.

Materials described as "handed over to the Employer" shall be carefully dismantled where necessary, neatly stored under cover on the site where directed and protected from damage, until required

Materials described as "set aside for re-use" shall be carefully dismantled where necessary, cleaned, neatly stored under cover and protected from damage until required for re-use. Any damage caused to such materials during removal, storage or refixing shall be made good at the Contractor's expense

B.3 DISPOSAL OF DEBRIS ETC

The Contractor shall be responsible for the removal from the site of all materials, debris and rubbish resulting from the alterations

B.4 MAKING GOOD DAMAGED WORK

The Contractor shall make good in all trades to existing work where damaged or disturbed through the alterations with all necessary new materials to match the existing

B.5 FORMING NEW OPENINGS OR ALTERING OPENINGS IN EXISTING WALLS

Where new openings are formed or openings altered in existing walls, the wall above the opening shall be broken out and a new brick, in situ concrete or prestressed concrete lintel inserted, complete with all necessary reinforcement, formwork, turning piece, etc, the jambs and portions of openings as described shall be built up with new brickwork or blockwork properly toothed and bonded to existing, cavities of hollow walls shall be closed where necessary and finishes shall be made good all round and into reveals

B.6 BUILDING UP OPENINGS

Where existing openings are given in number as built up, the existing surfaces all round shall be prepared as necessary, brickwork or blockwork properly toothed and bonded to existing, wedged up to underside of existing lintel and finishes shall be made good on both sides

C. EARTHWORKS

C.1 DEMOLITIONS

C.1.1 Nature and extent

Descriptions of demolitions give a rough guide only as to the scope of the work. Tenderers are therefore advised to visit the site before submitting a tender and to acquaint themselves with the nature and extent of the work to be done and the value of recoverable materials which are not to be re-used or handed over to the Employer. Unless otherwise stated, loose furniture, kitchen and other equipment, apparatus, machinery, etc shall remain the property of the Employer and the removal thereof does not fall within the scope of this Contract

The Contractor shall completely demolish the buildings etc in a careful, skilful, practical and safe manner down to 150mm below ground level

Demolitions shall include breaking up and removing:

all floors and surface beds;

all external screen walls, steps, ramps, aprons, surface water channels, rainwater sumps, gulleys, etc attached to the building to be demolished;

all services, manholes, etc in ground to a point not less than 1m beyond the perimeter of the building including plugging off ends of all remaining pipes, drains, etc, filling in holes where necessary and ramming and levelling to ground level

Where only a portion of a building is to be demolished, it shall be done without damage to the remaining portion of the building. Any such damage shall be made good by the Contractor at his own expense

C.1.2 Notices etc

The Contractor shall, before commencing work, obtain all necessary authorisation for carrying out the work, by whatever means including the use of pneumatic equipment or blasting, give all necessary notices and pay all charges and fees in connection therewith. He shall also comply with all regulations pertaining to rodent extermination and he shall obtain the requisite Rodent Extermination Clearance Certificate and pay all necessary fees. All receipts and certificates shall be left in the safekeeping of the Principal Agent. All the abovementioned charges and fees shall be paid by the Contractor and included in his prices

The Contractor shall give ample notice to the Principal Agent and Local Authorities regarding any disconnections necessary prior to the removal or interruption of electrical or telephone cables, water and sanitary services etc

C.1.3 Loss

After the handing over of the site to the Contractor, the full risk of any loss or damage to buildings to be demolished shall be the responsibility of the Contractor and he shall take such precautions as he deems necessary against such loss or damage

C.1.4 Materials from the demolitions, credit, etc

Materials recovered from the demolitions will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in any new work without written permission from the Principal Agent

C.1.5 Disposal of debris etc

The Contractor shall be responsible for the removal from the site of all materials, rubble, debris and rubbish resulting from the demolitions

C.2 SOIL INSECTICIDES

The application of soil insecticides shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS 10124

C.3 FILLING ETC

C.3.1 Filling generally

Filling over site shall be spread, levelled, watered and consolidated in layers not exceeding 300mm

Filling under floors and backfilling to excavations shall be suitable inert material, free from clay, vegetable matter, large stones, etc, having a maximum plasticity index of 10, spread, levelled and compacted to a density of at least 90% Mod. AASHTO

C.3.2 Hardcore

Hardcore shall be broken stone or other approved hard material graded from 25mm to 75mm with the finer material on top and shall be spread, levelled and consolidated

C.4 EXCAVATIONS

C.4.1 Classification of excavated material

“Hard rock” shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives

“Soft rock” shall mean hard material the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact outcrop and material of similar hardness

“Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m³ in volume

D. CONCRETE, FORMWORK AND REINFORCEMENT

D.1 SPECIFICATION FOR CONCRETE WORK GENERALLY

All in situ concrete work (plain and reinforced) shall comply with SANS 1200G supplemented by the following Project Specification. Where SANS 1200G and the Project Specification are in conflict, the Project Specification shall take precedence

Wherever the term "Engineer" appears in SANS 1200G or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

PROJECT SPECIFICATION

The following amplifications, additions and amendments to SANS 1200G shall constitute the Project Specification. Clause numbers refer to either the existing clauses in SANS 1200G or to new clauses, which are related to the existing clauses

1. SCOPE

This clause is amended to include:

- 1.1 This specification does not cover the methods by which the finished structure is to be measured for the purpose of payment and the "Standard System of Measuring Building Work" shall apply

2. INTERPRETATIONS

2.1 SUPPORTING SPECIFICATIONS

Clause 2.1(b) shall not apply

2.2 APPLICATION

This clause shall not apply

4. PLANT

4.5 FORMWORK

4.5.2 Finish

Unless otherwise stated the quality of all formwork shall be such that the finished surface of the concrete is "Rough" in terms of clause 5.2.1(a)

5. CONSTRUCTION

5.2 FORMWORK

5.2.1 Classification of Finishes

- (a) **Rough.** No treatment of the surface of the concrete will be required after the striking of the formwork. The finish of the concrete need not be more accurate than Degree of Accuracy III
- (b) **Smooth.** Imperfections such as small fins, bulges, irregularities, surface honeycombing and surface discolorations shall be made good and repaired by approved methods. The finish of the concrete shall be accurate to Degree of Accuracy II
- (c) **Special**
- (i) **Smooth and fair**

This class of finish requires the highest standard of concrete work, formwork, accuracy and technique

Concrete placed in any one structure to give this finish shall be made from cement and aggregates from the same source. The grading of the aggregate shall be kept constant

Formwork shall be metal, wrot timber or other approved material in new condition designed and constructed to suit the particular job in hand and with shutter bolts and joints between panels in a regular pattern approved by the Principal Agent. Joints between panels shall be watertight, but the use of sealing tape which will mark the concrete shall not be permitted

Designated joints shall be in the position and of the details shown upon the working drawings. Should the Contractor wish to incorporate further construction joints or amend the position of those shown to suit his own requirements or technique, this may be allowed provided that all design considerations are met, that the prior approval of the Engineer is obtained and that any extra costs are borne by the Contractor

In the case of horizontal construction joints, the top edge of the concrete on the smooth and fair finished side shall be struck true and level with a trowel

Special care shall be taken to ensure that forms are clean and free of all pieces of tying wire, nails and other debris at the time of concreting

The standard of finish shall be such that upon removal of the formwork, no further treatment, other than treatment of bolt holes if required, shall be found necessary to provide a straight, smooth and uniform finish of good quality and consistent colour and texture, free of all honeycombing etc. Any defect shall be made good by either removing and replacing the defective concrete or, in certain instances only, by patching

5.5 CONCRETE

5.5.1.6 Prescribed mix concrete

Where prescribed mix concrete is specified the proportions of constituents, the maximum size of coarse aggregate and the estimated minimum compressive strength shall be as specified in the following table:

Class of Concrete	Estimated minimum compressive strength in MPa at 28 days	Maximum nominal size of coarse aggregate in mm	Proportions of Constituents		
			Cement (Parts)	Fine aggregate (Parts)	Coarse aggregate (Parts)
A	7	37,5	1	4	8
B	15	19	1	3	5
C	20	19	1	2,5	3,5

Cement shall comply with SANS 50917-1 of strength 32,5N or higher

Should cement and aggregates be mixed by volume, the contents of a 50kg sack of cement shall be taken to be 0,033m³

Notwithstanding the requirements contained in SANS 1200G, the Principal Agent may permit certain items of non-structural concrete to be mixed by hand

If the concrete is mixed by hand, it shall first be mixed in a dry state on a clean non-absorbent surface until it is of uniform colour and consistency. Just enough water shall then be added to permit mixing and working, at which stage the concrete shall continue to be mixed until it is of uniform colour and consistency

5.5.1.7 Strength concrete

Where strength concrete is specified it shall be designated by its specified strength followed by the size of stone used in its manufacture, eg 30 MPa/19mm

The water/cement ratio shall be as Table 5 of clause 5.5.1.5 for moderate exposure conditions

5.5.1.8 "No-Fines" concrete

"No-fines" concrete shall consist of one part cement to eight parts aggregate graded from minimum 6mm to maximum 13mm size

The quantity of water used shall be just sufficient to form a smooth grout which shall completely coat every particle of aggregate and also to ensure that the grout is just wet enough to form a small fillet at each point of contact between the stones. "No-fines" concrete mixed with excessive water, which results in a thin grout, which drops off the aggregate, will be rejected

"No-fines" concrete shall be placed in its final position within 20 minutes of mixing and shall be placed in continuous horizontal layers. Concrete shall be spade worked sufficiently to ensure that it fills the forms but vibrating, tamping or ramming will not be permitted

5.5.3.2 **Ready-mixed concrete**

The use of ready-mixed concrete and the acceptability of test results from a central concrete production facility shall be subject to the written approval of the Engineer

6. **TOLERANCES**

Degree of Accuracy II shall apply for all work unless otherwise stated

7. **TESTS**

7.1 **FACILITIES AND FREQUENCY OF SAMPLING**

7.1.2 **Frequency of sampling**

7.1.2.5 The frequency of sampling shall be as directed by the Engineer, but not less than one set of cubes from every 50m³ cast

8. **MEASUREMENT AND PAYMENT**

This clause shall not apply

D.2 AGGREGATES OF LOW DENSITY

Aggregates of low density shall comply with SANS 794

D.3 HOLLOW BLOCKS, PREFABRICATED BLOCK BEAMS AND PLANKS, ETC

Blocks, block beams, planks, etc shall be fixed and supported in such a manner that no movement can take place before or during the casting of concrete. No broken components shall be used

D.4 SUPERVISION

A competent and experienced foreman shall superintend personally the whole of the concrete construction and pay special attention to:

- (a) The quality, testing and mixing of materials,
- (b) The placing and compaction of concrete,
- (c) The construction and removal of formwork and
- (d) The sizes and position of reinforcement

The Contractor shall obtain the permission of the Principal Agent before commencing concreting of foundations or reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the Principal Agent to comment on any particular aspect of the work, shall be deemed to relieve the Contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the Drawings, Specification and Conditions of Contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the Principal Agent to inspect all or any part of the Works or that such inspection is necessarily complete in every respect

D.5 GENERAL

Concrete

Rates for concrete work shall include all "construction joints" other than "designated joints" as defined in SANS 1200G clause 2.4.3 which are measured separately, and for the design of strength concrete mixes and all testing of concrete and materials other than compressive strength testing of concrete samples taken from concrete being placed in the Works. The Contractor shall only be entitled to payment for those samples and compressive strength tests called for by the Engineer and which pass the test requirements

Surface beds cast in panels shall be cast in panels approximately 9m²

Formwork

Formwork to slabs and beams shall be cambered where required

Rates for formwork to soffits shall include propping not exceeding 3,5m high unless otherwise described.

Formwork to walls and columns is not exceeding 3,5m high above bearing level unless otherwise described

Reinforcement

Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps.

The mass of binding wire is not included in the mass of the reinforcement and the cost thereof shall be included in the rates for the reinforcement

E. PRECAST CONCRETE

E.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Precast concrete paving slabs SANS 541

Cement, water, aggregates and reinforcement shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT

E.2 CONCRETE

Concrete shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT and unless otherwise stated shall be prescribed mix concrete Class C but with coarse aggregate of an appropriate size

E.3 MOULDS

Before each casting, moulds shall be coated with a suitable release agent which will not in any way discolour the surface of the finished product or impair its strength. Where items are described as "finished smooth from the mould" or as "precast terrazzo", moulds shall be made to a high degree of accuracy and shall be such as to leave even and smooth surfaces

E.4 FINISHES TO BLOCKS

Where described as "precast terrazzo", such surfaces shall have a facing of terrazzo described under O. PLASTERING. The facing shall be poured into the moulds in a wet state (not dry pressed) and thoroughly worked up against finished faces to ensure that it finishes smooth from the mould

Projections shall be rubbed off and faces shall be of even colour and free from blemishes, cracks and other imperfections. Salient angles shall be arris rounded

E.5 CASTING ETC

Items shall be suitably cured, shall not be handled whilst still green and shall not be built in within 21 days of casting

E.6 REINFORCEMENT

Unspecified reinforcement required for manufacturing, handling and erection purposes and for reinforcing projecting and other unwieldy portions of blocks shall be provided by the Contractor at his discretion

E.7 BEDDING, JOINTING AND POINTING

Blocks shall be bedded and jointed solidly in Class I mortar as described under F. MASONRY and shall be pointed with slightly keyed joints

Blocks finished with "precast terrazzo" shall have joints raked out and pointed with slightly keyed joints in tinted waterproofed mortar composed of one part cement and three parts sand to match terrazzo facing

E.8 GENERAL

Precast concrete work shall include reinforcement required for manufacturing, handling and erection purposes, steel rod or wire hooks and/or mortices for lewis bolts required for handling and transporting, any necessary temporary propping and strutting and bedding, jointing and pointing

F. MASONRY

F.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Burnt clay masonry units	SANS 227
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – fine aggregates for plaster and mortar	SANS 1090
Concrete masonry units	SANS 1215
Prestressed concrete lintels	SANS 1504
Burnt clay paving units	SANS 1575
Metal ties for cavity walls	SANS 28
Common cement	SANS 50197-1 (Class 32,5N)
Masonry cement	SANS 50413-1 (Class 22,5X)
Concrete masonry construction	SANS 10145
The structural use of masonry	SANS 10164-1
Masonry walling	SANS 10249
Concrete floors	SANS 10109-1&2

F.2 SAND

Sand shall be washed where necessary and screened through a 2,4mm mesh sieve

F.3 BURNT CLAY BRICKS

Burnt clay bricks shall be of nominal size 222 x 106 x 73mm unless otherwise stated

Common bricks shall be General Purpose bricks

Extra hard burnt bricks shall be General Purpose (Special) bricks

Facing bricks shall exhibit a liability to efflorescence not in excess of "Slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of facing and paving bricks during transit and handling

F.4 CONCRETE BRICKS

Concrete bricks shall have a nominal compressive strength of 8 MPa

F.5 QUARRY TILES ETC

Quarry, cement and similar tiles shall be of approved manufacture, even in shape and size, free from cracks, twists or blemishes and uniform in colour

F.6 WIRE TIES

Wire ties shall be of galvanized steel of the single wire type for solid walls and either the "Butterfly" or Modified PWD type for hollow walls. Ties shall be of sufficient length to allow not less than 75mm of each end to be built into brickwork or embedded in concrete

F.7 BRICKWORK REINFORCEMENT

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2,8mm diameter main wires with 2,5mm diameter cross wires at 300mm centres welded at intersections

Brickwork reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

F.8 MORTAR

Mortar shall comply with the following table:

1	2	3	4
Mortar Class	Minimum compressive strength MPa	Cement:sand (common cement)	Cement:sand (masonry cement)
I	10	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	5	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1,5	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

Mortar shall be Class II unless otherwise specified

Mortar plasticizers may only be used with the approval of the Principal Agent

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated

Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used

F.9 COMPO MORTAR

Compo mortar shall be Class III mortar in accordance with clause F.8 but with a lime content of 80 litres

The lime and sand shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated. Immediately before use, the cement shall be mixed in and the requisite amount of water added. Compo mortar shall be produced in such quantities as can be used before commencement of set and no compo mortar that has set shall be used

F.10 BRICKWORK

Wherever practicable, brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used. English bond shall only be used where specifically so indicated or where stretcher bond is not practicable

Brickwork, unless otherwise described, shall be built in Class II mortar

Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

The brickwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Where necessary, bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Walls in thicknesses of more than one skin shall have at least five wire ties per square metre. Linings to concrete, unless otherwise specified, shall be tied to the concrete with at least five wire ties per square metre

Hollow walls, unless otherwise specified, shall be built of two half brick skins with cavity between, tied together with at least five wire ties per square metre. The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar. Mortar joints to brickwork shall be not less than 8mm or more than 12mm thick

F.11 BLOCKWORK

Unless otherwise described, all blockwork shall be built in stretcher bond. Whole blocks shall be used except where bats or closers are required to form bond. Blockwork, unless otherwise described, shall be built in Class II mortar

Solid blocks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

Hollow blocks shall be laid in shell bedding, ie only the inner and outer shells of the blocks shall be covered with mortar. Vertical joints shall be similarly formed

The blockwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Clay blocks shall be wetted before being laid and the course of blocks last laid shall be well wetted before laying a fresh course upon it

F.12 CENTRES AND TURNING PIECES

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

F.13 FACE BRICKWORK

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpendents shall be vertically aligned

Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick being used is obtained

F.14 PAVINGS, SILLS, COPINGS, ETC

Clay bricks and tiles shall be wetted before fixing and shall be solidly bedded and jointed in Class I mortar and pointed with slightly keyed joints

G. WATERPROOFING

G.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Bituminous damp-proof courses	SANS 248 (Type FV)
Polyolefin film for damp- and waterproofing in buildings (walls, sills, etc)	SANS 952 (Type B)
Polyolefin film for damp- and waterproofing in buildings (floors and basements)	SANS 952 (Type C)
Mastic asphalt for roofing	SANS 297
Mastic asphalt for damp-proof courses and tanking	SANS 298
Bituminous roofing felt	SANS 92 (Type 60)
Polyolefin film for damp- and waterproofing in buildings (flat roofs)	SANS 952 (Type A)
Chloroprene rubber sheet (for waterproofing)	SANS 580
Sealing compounds for the building industry, two-component, polysulphide base	SANS 110 (Type 2 - Gun Grade)
Sealing compounds for the building and construction industry, two- component, polyurethane base	SANS 1077
The waterproofing of buildings (including damp-proofing and vapour barrier installation)	SANS 10021

G.2 WATERPROOFING TO ROOFS, BASEMENTS, ETC

Waterproofing to roofs, basements, etc shall be carried out by workmen who are experienced in this type of work

G.3 DAMP-PROOF COURSE TO WALLS

All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap shall equal the full thickness of the wall

H. ROOF COVERINGS ETC

H.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Concrete roofing tiles	SANS 542
Clay roofing tiles	SANS 632
Sawn softwood timber battens	SANS 1783-4
Fibre-cement sheets (flat and profiled)	SANS 685
Aluminium alloy corrugated and troughed sheets	SANS 903
Continuous hot-dip zinc-coated carbon steel sheet of commercial, lock-forming and drawing qualities	SANS 3575
Continuous hot-dip zinc-coated carbon steel sheet of structural quality	SANS 4998
Polyolefin film for damp- and waterproofing in buildings	SANS 952
Metal roofing tiles	SANS 1022
Glass-reinforced polyester (GRP) laminated sheets (profiled or flat)	SANS 1150
Fasteners for roof and wall coverings in the form of sheeting	SANS 1273
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Fixing of concrete interlocking roofing tiles	SANS 10062
Roof and side cladding	SANS 10237
Sheet zinc	BS 849
Sheet lead	BS 1178
Sheet aluminium	BS 1470
Sheet copper	BS 2870

H.2 GALVANIZED STEEL PROFILED SHEETS ETC

Galvanized steel profiled sheets, ridge and hip coverings, etc shall be coated with a minimum of 275 g zinc per m² and shall be free of white rust

H.3 GALVANIZED SHEET IRON

Galvanized sheet iron shall be rolled steel sheet coated on both sides with a minimum of 275 g of zinc per m² and shall be free from white rust

H.4 NAILING AND SCREWING

Where nailing and screwing is required:

- galvanized iron nails and screws shall be used for galvanized sheet iron and sheet zinc
- copper or copper alloy nails and screws for sheet copper and sheet lead
- aluminium alloy or stainless steel nails and screws for sheet aluminium

H.5 LAPS

Sheet metal flashings shall have minimum 100mm laps and linings to valleys, secret gutters, etc minimum 225mm laps

H.6 GENERAL

Rates for profiled sheet roofing and rolled edges, ridge and hip coverings, flashing pieces, etc of metal, fibre-cement, plastic, etc shall include fixing accessories

I. CARPENTRY AND JOINERY

I.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sawn softwood timber : General requirements	SANS 1783-1
Sawn softwood timber : Stress-graded structural timber and timber for frame wall construction	SANS 1783-2
Sawn softwood timber : Brandering and battens	SANS 1783-4
Softwood flooring boards	SANS 629
Hardwood furniture timber	SANS 1099
Hardwood block and strip flooring	SANS 281
Wooden ceiling and panelling boards	SANS 1039
Laminated timber (glulam)	SANS 1460
Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Wood-wool panels (cement bonded)	SANS 637
Fibre-cement sheets (flat and profiled)	SANS 685
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Particle boards	SANS 50312-1to7
Decorative laminates	SANS 4586
Wooden doors	SANS 545
Fire doors	SANS 1253
Materials for thermal insulation of buildings	SANS 1381-1,2,4&6
Expanded polystyrene thermal insulation boards	SANS 1508
Mild steel nails	SANS 820
Metal screws for wood	SANS 1171
Wood-preserving creosote	SANS 539

Softwood shall bear the relevant SABS mark and shall be ordered in the sizes in which it will be used as no scantlings of marked timber will be allowed. Should SABS marked timber be unavailable, the Principal Agent's prior permission shall be obtained before using unmarked timber

I.2 HARDWOODS

All hardwoods shall be specially selected, well seasoned, free from sapwood and well kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

I.3 INFECTION AND PRE-TREATMENT OF TIMBER

All timber used on the site, whether for permanent or temporary work, shall be free of borer or other beetle and termite infection. If the work under this contract falls within an area designated under Government Notice R2577 of 197812-29, permanent softwood fixed in the building shall be treated against borer etc in accordance with Government Notice R451 of 1969-03-28 using Class B or C preservative

When treated timbers are cut, the cut surfaces shall be effectively brushed with at least two coats of preservative solution

I.4 CONSTRUCTION IN GENERAL

Where applicable, construction methods shall comply with SANS 10082. Wood and laminate flooring shall be installed in accordance with SANS 10043. Roof trusses shall be manufactured, erected and braced in accordance with SANS 10243

I.5 STRUCTURAL TIMBER

Timbers generally shall be in single lengths and jointing of timbers will only be permitted when the required length is unobtainable. Only the absolute minimum of joints to obtain a particular length will be permitted and such joints are to be evenly spaced along the length of the timber

Finger-jointing of structural timber will be permitted, in which case it shall be manufactured in accordance with SANS 10096

I.6 PLATE NAILED TIMBER ROOF TRUSSES

Plate nailed timber roof trusses shall be of approved design and manufacture and constructed with softwood structural timber by a truss Fabricator holding a current Certificate of Competence awarded by the Institute of Timber Construction

Each roof truss shall have all its members accurately cut and closely butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, precision pressed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions

The design, manufacture and transportation of the roof trusses, bracing, etc shall be under the control of a registered Structural Engineer in accordance with SANS 1900, SANS 10160 and SANS 10163, who shall, after erection, provide a certificate confirming that the design, manufacture, transportation, erection and bracing has been carried out in accordance with this specification

The design shall include for all live loads, wind loads and for dead loads imposed by roof covering, purlins, ceilings, etc

Fully detailed shop drawings of all trusses etc, indicating sizes, bracing, loading, etc, shall be submitted to the Principal Agent for approval prior to fabrication

Unless specific erection instructions are given, erection shall be carried out in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research or as detailed by the designer

Roof trusses and bracing shall include design and preparation of shop drawings

I.7 TONGUED AND GROOVED BOARDING

Tongued and grooved boards for floors, panelling, etc shall be in long varying lengths with joints tightly cramped up and secret nailed. Flooring boarding shall be flush jointed with staggered heading joints and machine sanded after fixing

I.8 JOINERY

Skirtings, cornices, rails, etc shall be in single lengths wherever practicable and shall have splayed heading joints where necessary. Skirtings shall be trenched at back

All horns of door frames shall be checked and splayed back where frames are fixed projecting or flush with surface and built in

Heads of screws in exposed faces of hardwood joinery shall be sunk and match pelleted

Joinery shall have arris rounded angles and shall be blocked and planted on

I.9 VENEERS

All face veneers shall be of kiln dried timber, free from knots, cracks, patchwork, sapwood and other defects, selected and glued, dried and machine-sanded to a smooth finish. All veneers shall be applied under hydraulic pressure

I.10 DOORS

Flush doors shall have solid timber edge strips with concealed edges. Where doors are to be finished with a transparent finish, the veneer and the edge strips shall be timber of the same species and as far as possible of matching colour. Unless otherwise described all flush doors shall be of interior quality, but where exterior quality doors are specified the glue used shall be of the WBP type

Framed and ledged batten doors described as filled in with V-jointed boarding shall be filled in flush on one side with tongued and grooved vertical boarding, V-jointed on one or both sides and of the thickness stated. The boarding shall be in narrow widths, closely cramped up, rebated or tongued on outer edges and housed to grooves in stiles and rails and twice countersunk brass screwed at each intersection with ledges and braces and the inner edges of the abutting stiles and rails shall be chamfered to form a V-joint at junction with the board

Unless otherwise described double doors shall have rebated meeting stiles

I.11 FIXING

All nails and screws shall be of the size, length and type appropriate to their respective uses. All screws for hardwood joinery work shall be brass

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs at not exceeding 600mm centres. Where items are described as "bolted", the bolts have been given separately

I.12 ADHESIVES

Adhesives shall comply with BS 1204 and 4071 where applicable. Adhesives used in the manufacture of external joinery exposed to excessive moisture (eg kitchen and laboratory worktops) shall be of the WBP type

J. CEILINGS, PARTITIONS AND ACCESS FLOORING

J.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Gypsum cove cornice	SANS 622
Wood-wool panels (cement-bonded)	SANS 637
Sawn softwood timber : Brandering and battens	SANS 1783-4
Sawn softwood timber : Timber for frame wall Construction	SANS 1783-2
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Raised access flooring	SANS 1549

J.2 TONGUED AND GROOVED BOARDING

Tongued and grooved boarding for ceilings shall be in long varying lengths, V-jointed one side and with joints tightly cramped up and secret nailed

J.3 CEILINGS ETC

J.3.1 Brandering

Brandering for ceilings and eaves soffit coverings shall be symmetrically arranged with necessary smaller panels. Main branders shall be at right angles to roof timbers, with cross branders cut in between and branders shall be fixed with galvanized wire nails driven in on skew alternately in opposite directions

J.3.2 Ceiling boards

Ceiling boards shall be in long lengths symmetrically arranged with necessary smaller panels, closely butted and secured at 150mm centres to brandering with galvanized or cadmium-plated clout-headed nails

J.4 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

J.5 EXPOSED TEE-SYSTEM SUSPENDED CEILINGS

The ceiling panels shall be as described in the items and the panels shall be stiffened at back as recommended by the manufacturer to prevent bowing or sagging

The exposed surfaces of all ceiling panels and supporting members shall be uniform in colour and free from surface blemishes

The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bearers. The exposed flange of the tees shall be 25mm wide, covered with a rolled aluminium cap painted a low sheen satin white. Cornices etc shall be as described in the items and shall be finished to match the exposed tees

The main tee bearers shall have holes for cross tees at 300mm centres and holes for hangers at 50mm centres. In addition, main and cross tee bearers shall be holed as necessary for and provided with timber wedges or steel clips where recommended by the manufacturer to prevent ceiling panels from lifting

The web of the exposed cross tee bearers shall extend to form a positive interlock with the main tee bearers and the lower flange shall be cut back to provide a joint free appearance

All hangers shall be galvanized and shall be at centres to meet the requirements of the specification with one end fixed to the suspension grid main bearers and the other end fitted with suitable galvanized fixing cleat securely fixed to the structure. Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducts. Where recommended by the manufacturer, hangers shall be of the rigid type

Component parts and fixings shall be non-corrosive and able to withstand atmospheric pollution. Surfaces of aluminium which are in contact with other materials when fixed, particularly metals, shall be suitably insulated to prevent electrolytic corrosion

Ceilings shall comprise hangers, suspension grid system and ceiling panels, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension systems modified as necessary to work around any pipes or light fittings

J.6 FLUSH PLASTERED SUSPENDED CEILINGS

Gypsum plasterboard panels of the specified thickness generally in 1200mm widths and in long lengths shall be fixed grey side down with self-tapping screws to the suspension system with the joints between boards loosely butt jointed and covered with 50mm wide strips of self-adhesive fibre tape

The plasterboard panels shall be finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness etc recommended by the manufacturer

The suspension system shall be an approved patent concealed suspension system consisting of galvanized mild steel bearers suspended on approved non-rusting metal hangers spaced generally at 1200mm centres or to suit layout of air-conditioning ducts and other services etc above ceiling with one end bolted to the bearer and the other end fitted with a galvanized fixing cleat securely fixed to the structure as required

Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducting

Ceilings shall comprise hangers, suspension system, ceiling panels and plaster finish, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension system modified as necessary to work around any pipes or light fittings

K. FLOOR COVERINGS, WALL LININGS, ETC

K.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Semi-flexible vinyl floor tiles	SANS 581
Resin modified vinyl floor tiles	SANS 586
Flexible vinyl flooring	SANS 786
Hardwood block and strip flooring	SANS 281
Wood mosaic flooring	SANS 978
Textile floor coverings (pile construction)	SANS 1375
Textile floor coverings (needle-punched construction)	SANS 141
Carpet underlays	SANS 1419
The installation of wood and laminate flooring	SANS 10043
The installation of resilient thermoplastic and similar flexible floor covering materials	SANS 10070
The installation of textile floor coverings	SANS 10186
Sheet linoleum (calendered types), cork, carpet and linoleum tiles	BS 810
Solid rubber flooring	BS 1711
Felt backed linoleum	BS 1863

K.2 LAYING OF MATERIAL

Floor tiles shall be laid with continuous joints in both directions

Patterned floor coverings shall be matched at joints

K.3 GENERAL

Floor coverings, wall linings, skirtings, nosings, etc shall include all preparatory work to screeded or plastered surfaces etc, priming coats and adhesives

Floor coverings and wall linings shall be dressed around and into corners. Wood block and wood mosaic flooring shall be sanded with a sanding machine and sealed with a coat of approved penetrating sealer

Plastic handrails shall have welded and polished butt joints

L. IRONMONGERY

L.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Locks, latches and associated furniture for doors. (Domestic type)	SANS 4
Kitchen cupboards: Built-in and free-standing	SANS 1385
Single action closers	SANS 1510
Padlocks	SANS 1533
Fasteners	SANS 1700
Chalk writing boards for schools	CKS 36

L.2 KEYS

Locks shall have the minimum possible number of interchangeable keys. Cylinder locks and locks described as "en suite" shall be clearly marked with consecutive numbers and each key shall be punched with the corresponding number of the relative lock

L.3 FIXING

Unless otherwise described, ironmongery is to be fixed to wood

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs

Screws, bolts, etc for fixing of ironmongery shall be of matching metal and finish, except for aluminium ironmongery or ironmongery fixed to aluminium in which cases stainless steel screws may be used

All necessary preparation of pressed steel door frames for the fixing of ironmongery to the frames has been included with the pressed steel door frames

L.4 KITCHEN CUPBOARDS

Steel cupboards shall be finished with baked enamel. Tops of floor cupboards shall have laminated plastic covering

Cupboards shall be fitted with all necessary hinges, handles, catches, etc. Cupboards shall be securely fixed with all necessary screws and fibre, plastic or metal plugs

Where cupboards are described as a "series", tops shall be continuous and cupboards shall be bolted or screwed together, including bolts, screws, holes, etc

M. STRUCTURAL STEELWORK

M.1 SPECIFICATION

All structural steelwork shall comply with SANS 1200H or 1200HA as applicable. Structural fasteners shall comply with SANS 1700

Whenever the term "Engineer" appears in SANS 1200H or 1200HA or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

M.2 PROJECT SPECIFICATION INCORPORATING AMPLIFICATIONS, ADDITIONS AND AMENDMENTS TO SANS 1200H AND 1200HA

The following amplifications, additions and amendments to SANS 1200H and SANS 1200HA shall apply and clause numbers refer to either the existing clauses in the relevant SANS or to new clauses which are related to the clauses therein

SANS 1200H

3.1.1 Weldable structural steel

Weldable structural steel shall comply with SANS 1431

5.1.2 Contractor provides shop details

The Contractor shall be responsible for the preparation of all shop detail drawings

5.1.3 Engineer provides shop details

This clause shall not apply

5.3.9 Protective treatment

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

8. Measurement and payment

This clause shall not apply

SANS 1200HA

5.2.10 Protective treatment

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

5.3.7 Repairs to paint and site painting

This clause shall not apply

8. Measurement and payment

This clause shall not apply

N. METALWORK

N.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Fasteners	SANS 1700
Expanded metal	SANS 190-1&2
Windows and doors made of rolled mild steel sections	SANS 727
Hot-dip galvanized zinc coatings on fabricated iron and steel articles	SANS 121
Strongroom and vault doors	SANS 949
Anodized coatings on aluminium (for architectural applications)	SANS 999
Steel door frames	SANS 1129
Mushroom- and countersunk-head bolts and nuts	SANS 1143
Welding of metalwork	SANS 1044
Adjustable glass-louvred windows	CKS 413
Aluminium sheet and strips	BS 1470
Aluminium extruded tube and hollow sections	BS 1474
Aluminium bars and sections	BS 1476

N.2 STEEL

Steel shall be mild steel of approved commercial quality. Steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and given one coat of primer as specified before leaving the workshop

N.2.1 Galvanizing of steel

Steelwork described as "galvanized" shall be galvanized by means of the hot-dip process after fabrication. Where welding on site is unavoidable, such welded joints shall be cleaned down and cold galvanized to approval

N.3 STAINLESS STEEL

Stainless steel shall be AISI Type 304 stainless steel and shall be buffed to an even satin finish. Stainless steel screws shall be used for fixing stainless steel

N.4 ALUMINIUM

Aluminium extrusions shall be of 6063-T6 alloy and temper. Aluminium sheet and strips shall be of 1200-H4 alloy and temper.

Joints in all aluminium members shall be formed in an approved manner so that the joints are practically invisible. Screw heads, pins, rivets, etc shall be concealed as far as possible. 300 Series stainless steel screws and bolts shall be used for jointing and fixing aluminium work

The surfaces of all aluminium which are in contact with other materials when fixed shall be suitably insulated with a non-absorbent insulating material to prevent corrosion. All aluminium work shall be suitably protected against damage, deterioration or discolouration caused by mortar droppings, paint, etc by taping with removable tape, covering with temporary casings or by covering with motor oil

N.4.1 Anodizing of aluminium

Aluminium described as "anodized" shall be treated with Grade 25 coating thickness for exterior use or Grade 15 for interior use as specified, to the required finish. All alloys to be anodized shall be suited to anodizing

N.5 BOLTS AND NUTS

Nuts shall be of at least the strength grade appropriate to the grade of bolt or other threaded element with which they are used

N.6 SCREWING OF METALWORK TO STEEL, WOOD, CONCRETE, ETC

Metalwork described as "screwed" to steel, wood, etc or "plugged" to brickwork, concrete, etc shall be fixed at not exceeding 500mm centres, with necessary holes, countersinking, threading, screws, set screws, self-tapping screws and fibre, plastic or metal plugs

N.7 BOLTING OF METALWORK

Where metalwork is described as "bolted" to steel, wood, brickwork, concrete, etc the bolts are measured elsewhere

N.8 WELDING OF METALWORK

All welds shall be cleaned and filed or ground off smooth to approval. All welded joints shall be continuous

N.9 METALWORK GENERALLY

Metalwork shall have all sharp edges ground smooth. Tubular and pipe work shall include running joints. Rails etc described as "continuous" shall be in long lengths with welded joints

N.10 PRESSED STEEL DOORS, FRAMES, ETC

N.10.1 Door frames

Frames shall project not less than 20mm into floor finish. Except where described as galvanized, frames shall be primed as specified before leaving the factory. Frames are to jambs and heads of openings. Frames for single doors shall be provided with two 100mm steel butt hinges and an adjustable striking plate for a mortice lock and frames for double doors shall be provided with four 100mm steel butt hinges. Butt hinges shall be steel butts with loose pins, welded to frames. Where necessary mortar caps shall be welded to frames and back plates shall be welded on behind tappings for screws

N.10.2 Cupboard door frames

Cupboard door frames shall be as described in N.10.1, but with thresholds of unequal channel section, two 100mm steel butt hinges to hanging stiles, two 75mm steel butt hinges to hanging stiles above transoms, necessary striking plates for mortice locks and keeps for barrel bolts

N.10.3 Combination doors and frames

Combination doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be standard design and required profile, with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with two reinforcing rails welded on. The door shall be provided with two lever mortice lock with lock box welded to inside. Doors shall be welded to steel butts

N.10.4 Transformer room doors and frames

Transformer room doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be of standard design with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with three reinforcing rails welded on. Single doors shall be fitted with a padlock cleat and two 100mm brass pintle hinges and double doors shall be fitted with a padlock cleat, two 150mm bolts and four 100mm brass pintle hinges. Each leaf shall be fitted with a louvered ventilation panel of standard design backed with 6mm mesh galvanized wire vermin proof screen

N.10.5 Sizes

The frame widths given refer to unfinished wall thicknesses

N.10.6 Glazing beads

Where specified, glazing beads shall be 12 x 12mm standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

N.11 STEEL WINDOWS, DOORS, ETC

N.11.1 Windows, doors, etc

All fittings to windows, doors, etc shall be chromium plated. Fixed lights and opening sashes shall be in single squares. Windows etc of single unit construction shall have weather bars at transoms above opening sashes

Composite windows not of single piece construction shall be coupled with standard coupling mullions and transoms that correspond with the window section used

Kicking plates and panels shall be 1,6mm metal plate fixed with standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

Except where described as galvanized, windows, doors, burglar bars, etc shall be primed as specified before leaving the factory

N.11.2 Burglar bars and flyscreens

Where windows are described as fitted with burglar bars or flyscreens, these shall be standard type fitted over opening sashes

N.12 ADJUSTABLE LOUVRE UNITS

Adjustable louvre units shall be suitable for hand or longarm operation

Louvre units shall include glass louvres with polished edges and installation, including holes, screws, rivets, preparation of openings, etc

N.13 ALUMINIUM WINDOWS AND DOORS

The foregoing preambles "N.4 – ALUMINIUM" shall apply to aluminium windows, doors, etc in all respects in so far as they are applicable. Aluminium windows and doors shall be manufactured from extruded aluminium members of 6063T6, 6261-T6 or 6082-T6 alloy and temper

Ancillary members such as sills, flashings, infill panels and the like formed from flat sheet material shall be of an appropriate alloy selected from 1200, 3004 or 5251 complying with BS 1470 of a temper suitable for the method of forming and a composition suitable for anodizing or painting as required

Windows, doors, etc shall be of an approved standard system, manufactured by an approved firm experienced in this type of work, and shall meet with the minimum recommended performance requirements as set out by the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA) in the latest edition of the Selection Guide

The fittings for all opening sashes shall be substantial and, unless otherwise described, shall be of high quality aluminium alloy finished to match the windows, doors, etc on which they occur. Samples of all fittings shall be supplied to the Principal Agent for approval

Top, side and bottom hung opening sashes shall be hung on two aluminium hinges with 300 Series stainless steel pins, nylon bushes and stainless steel washers. Side hung sashes shall have fasteners and sliding stays, top hung sashes shall have peg stays and bottom hung sashes shall have spring catches and concealed arms

Projected out sashes shall have aluminium fasteners and concealed arms of a non-corrosive material compatible with aluminium

The frames which are to be built into openings in brickwork shall be fitted with the manufacturer's standard type fixing lugs, not less than 20 x 3 x 150mm long, screwed to frame and placed one near each corner and intermediately not more than 450mm apart to sides, top and bottom and where fixed to concrete reveals, wood sub-frames or to preformed openings in brickwork shall have countersunk holes for screws, one near each corner and intermediately not more than 450mm apart to sides, top and bottom

N.13.1 Glazing beads

Where so described, openings and sashes of windows and doors shall be fitted with approved channel section aluminium glazing beads sufficient in size and profile to suit the method of glazing employed, finished to match the windows, doors, etc and neatly mitred. Screws where necessary shall be of aluminium or 300 Series stainless steel and have pan or raised heads finished to match the beads

N.13.2 Finishes

Windows, doors, etc described as "anodized" shall be treated with Grade 25 coating thickness. Windows, doors, etc described as "factory painted" shall have an electrostatically applied oven baked polyester paint coating not less than 25 micrometres thick

N.13.3 General

Aluminium windows, doors, etc shall include glass as described, fixing in position, sealing and protection against damage, deterioration or discolouration by taping with removable tape or covering with temporary casings or motor oil and removing same on completion

N.14 STRONGROOM AND RECORD ROOM DOORS

Strongroom and record room doors shall not be built in as the work proceeds, but shall be fixed later in the openings provided. The Contractor shall ensure that the lock or other important parts of the door are not tampered with. Should any such tampering occur, the Contractor will be held responsible and at the Principal Agent's discretion shall provide a new door or lock and keys at his own expense. The keys shall not be delivered together with the doors to the building site. The Contractor shall arrange for the manufacturer to send the keys direct to the Principal Agent per registered post. If these instructions are not complied with, a new lock and keys shall be provided by the Contractor at his own expense

N.15 STEEL ROLLER SHUTTERS

Roller shutters shall be of approved manufacture comprising curtain, vertical channel guides and top mechanism. The curtain shall be constructed of 1mm thick machine-rolled galvanized interlocking slats with mild steel end locks spot welded to alternate strips. The bottom shall be provided with a galvanized rail riveted on and vertical edges shall slide in galvanized channel guides formed of steel not less than 2,5mm thick bolted to sides of openings

The mechanism shall be covered in a galvanized sheet iron box. The ungalvanized sections shall be primed as specified before leaving the factory

O. PLASTERING

O.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 225X)
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090

O.2 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any plastering or other in situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key

O.3 FINISH

All coats of paving and plastering shall be executed in one operation without any blemishes

O.4 SCREEDS

Screeds shall be composed of one part cement and four parts sand

O.5 CEMENT RENDER

Cement render shall be composed of one part cement and three parts sand finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Cement render finish shall be divided into panels not exceeding 6m² with V-joints and deep trowel cuts

O.6 GRANOLITHIC

Granolithic shall be composed of one part cement, one part fine sand, two parts coarse sand and one part granite or other approved stone aggregate that will pass through a 5mm sieve, finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid

Granolithic shall be divided into panels not exceeding 6m² with V-joints and deep trowel cuts

O.7 TERRAZZO

Terrazzo shall be applied in two coats. The undercoat shall be composed of one part cement and three parts sand and shall be finished with a wooden float. The finishing coat shall be composed of one part cement and two parts marble or stone aggregate of a colour and size to obtain the required colour and texture and shall be at least 12mm thick, and applied before the undercoat has dried out. The finishing coat shall be compacted by tamping or rolling until superfluous water has been expelled, finished with a steel trowel and cured for at least seven days after laying. The finished surface shall show at least 80% of the aggregate

Surfaces described as “polished” shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as “polished” shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as “brushed” shall be brushed with a steel wire brush on the day the terrazzo has been laid to expose the aggregate as required

Where required, brass or other dividing strips shall be embedded in the undercoat to finish flush with the finished surface

Three sample blocks, each size 300 x 300mm, as separately measured shall be prepared for approval by the Principal Agent and kept in an accessible place on the site until the completion of the contract

O.8 SKIRTINGS

Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square junction with floor finish

O.9 THICKNESS OF PLASTER

All plaster, other than skim plaster, shall be not less than 10mm and not more than 20mm thick

O.10 CEMENT PLASTER

Cement plaster shall comply with the following table:

1	2	3
Plaster Class	Cement:sand (common cement)	Cement:sand (masonry cement)
I	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

O.11 COMPO PLASTER

Compo plaster shall be composed of one part cement, two parts lime and nine parts sand

O.12 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

O.13 TWO COAT PLASTER WITH GYPSUM FINISH

Two coat plaster with gypsum finish shall comprise an undercoat of Class II cement plaster finished with a wooden float and a finishing coat of gypsum skim plaster

O.14 ROUGH-CAST PLASTER

Rough-cast plaster shall be applied in two coats. The undercoat shall be composed of one part cement and five parts sand finished with a wooden float. The finishing coat shall be composed of one part cement and three parts stone aggregate that will pass through a 4mm sieve. The finishing coat shall be flicked on with a machine before the undercoat has set to obtain an even texture

O.15 FINE ROUGH-CAST PLASTER

Fine rough-cast plaster shall be as for rough-cast plaster but the finishing coat shall be composed of one part cement and three parts coarse sand

O.16 GENERAL

Rates for plastering described as being on vertical surfaces of brickwork or blockwork shall include concrete columns, beams and lintels flush with the face of the wall

P. TILING

P.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glazed ceramic wall tiles and fittings	SANS 22
Ceramic wall and floor tiles	SANS 1449
Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 22,5X)
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090
The design and installation of ceramic tiling	SANS 10107

P.2 TILES, MOSAICS, ETC

Tiles, mosaics, etc shall be even in shape and size, free from cracks, twists or blemishes and uniform in colour

P.3 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any tiling is commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key

P.4 CERAMIC WALL AND FLOOR TILING

Where tiles are fixed to plaster or screeds with an adhesive, the adhesive shall be as recommended by the manufacturer of the tiles. Joints shall be straight, continuous and flush pointed with an approved grouting compound

P.5 GENERAL

Tiling described as “on walls” is on brick walls or block walls unless otherwise stated and shall include concrete columns, beams and lintels flush with the face of the wall

Q. PLUMBING AND DRAINAGE

Q.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sheet metal

Sheet zinc	BS 849
Sheet aluminium	BS 1470
Sheet copper	BS 2870

Rainwater systems

Unplasticized poly(vinyl chloride) (PVC-U) components for external rainwater systems	SANS 11
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Pipes and fittings

Steel pipes : Pipes suitable for threading and of nominal size not exceeding 150mm	SANS 62
Plain-ended solid drawn copper tubes for Potable water	SANS 460
Malleable cast iron fittings threaded to ISO 7-1	SANS 4
Polyethylene (PE) pipes for water supply – Specifications	SANS 4427
Cast iron fittings for asbestos cement pressure pipes	SANS 546
Vitrified clay sewer pipes and fittings	SANS 559
Reinforced concrete pressure pipes	SANS 676
Concrete non-pressure pipes	SANS 677
Cast iron pipes and pipe fittings for use above ground in drainage installations	SANS 746
Unplasticized poly(vinyl chloride) (PVC-U) sewer and drain pipes and pipe fittings	SANS 791
Fibre-cement pipes, couplings and fittings for sewerage, drainage and low-pressure irrigation	SANS 819
Pitch-impregnated fibre pipes and fittings and jointing	SANS 921
Unplasticized poly (vinyl chloride) (PVC-U) pressure pipe systems	SANS 966-1
Unplasticized poly(vinyl chloride) (PVC-U) soil, waste and vent pipes and pipe fittings	SANS 967
Rubber joint rings (non-cellular)	SANS 974-1
Copper-based fittings for copper tubes	SANS 1067-1&2
Fibre-cement pressure pipes and couplings	SANS 1223
Polypropylene pressure pipes	SANS 1315
Non-metallic waste traps	SANS 1321-1&2
Vent valves for drainage installations	SANS 1532
Heavy duty cast iron pipe fittings for drainage and gas and water supplies	BS 78

Lead pipes	BS 602
Cast iron pressure pipes for use in drainage and gas and water supplies	BS 1211
Stainless steel pipes for use with compression fittings	BS 4127
Sanitary fittings etc	
Stainless steel sinks with draining boards (for domestic use)	SANS 242
Stainless steel wash-hand basins and wash troughs	SANS 906
Stainless steel sinks for institutional use	SANS 907
Stainless steel stall urinals	SANS 924
Acrylic sanitary ware : Baths	SANS 1402-1
Glazed ceramic sanitary ware	SANS 497
WC flushing cisterns	SANS 821
Flush valves for WC flushing cisterns	SANS 1509
Taps, valves etc	
Water taps (metallic bodies)	SANS 226
Water taps (plastic bodies)	SANS 1021
Single control mixer taps	SANS 1480
Float valves	SANS 752
Plastic floats for ball valves	SANS 1006
Functional control valves and safety valves for Domestic hot and cold water supply systems	SANS 198
Cast iron gate valves for waterworks	SANS 664
Automatic shut-off flush valves for water closets and urinals	SANS 1240
Check valves (flanged and wafer types)	SANS 1551-1&2
Fire extinguishers	
Portable refillable fire extinguishers	SANS 1910
Portable rechargeable fire extinguishers : Halogenated hydrocarbon type extinguishers	SANS 1151
Water heaters and fire hose reels	
Fixed electric storage water heaters	SANS 151
Fire hose reels (with semi-rigid hose)	SANS 543
Drainage covers, gratings, etc	
Cast iron surface boxes and manhole and inspection covers and frames	SANS 558
Cast iron gratings for gullies and stormwater drains	SANS 1115
The installation of polyethylene and poly (vinyl chloride) (PVC-U and PVC-M) pipes	SANS 10112
Water supply and drainage for buildings	SANS 10252-1&2

Q.2 GENERAL**Q.2.1 Excavations**

Excavations shall be deemed to be in "earth". Backfilling to excavations shall be executed in 300mm thick layers, watered and compacted. Surplus excavated material shall be spread and levelled over site as directed

Q.2.2 Concrete

Unreinforced concrete shall be Class B prescribed mix concrete and reinforced and precast concrete shall be Class C prescribed mix concrete

Q.2.3 Brickwork

Brickwork shall be of extra hard burnt bricks built in Class I mortar

Q.2.4 Plaster

Plaster shall be 1:3 cement plaster finished smooth with a steel trowel. All angles shall be rounded

Q.2.5 Diameters of pipes etc

Diameters stated for pipes, traps, valves, etc are internal diameters except PVC, polyethylene, stainless steel and copper pipes and traps for which external diameters are stated

Q.3 SHEET METAL WORK**Q.3.1 Galvanized sheet iron**

Galvanized sheet iron shall be rolled steel sheet coated on both sides with Class Z275, unless otherwise specified, zinc coating complying with SANS 3575/4998. Sheets shall be free from white rust

Q.4 EAVES GUTTERS**Q.4.1 Galvanized sheet iron gutters**

Galvanized sheet iron gutters shall have beaded edges and all joints shall be riveted and soldered. Angles shall be strengthened with 50 x 0,6mm galvanized sheet iron strips soldered on over the internal faces of mitres

Gutters shall be fixed with falls to outlets on 30 x 3mm galvanized mild steel brackets, bent to the shape of gutters, with front ends taken up to the underside of beaded edge of gutter and each screwed to roof timbers or bolted to fibre-cement fascias with 6mm galvanized gutter bolts. Gutters shall be bolted to brackets at front with 6mm galvanized gutter bolts, one to each bracket

Brackets shall be positioned at joints of gutters and intermediately at not exceeding 1,25m centres

Q.4.2 Fibre-cement gutters

Fibre-cement gutters shall have spigot and socket joints. Gutters shall be fixed with falls to outlets on standard aluminium alloy brackets, screwed or bolted to roof timbers or fascias

Q.4.3 Unplasticized polyvinyl chloride (UPVC) gutters

Gutters shall be fixed with falls to outlets on brackets as supplied by the manufacturer, screwed or bolted to roof timbers or fascias

Q.4.4 Aluminium gutters

Aluminium gutters shall be roll formed on site to required lengths and profiles from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides with baked enamel and two coats of silicone modified polyester to a total minimum thickness of 20 micrometres. Angles, stopped ends, etc shall be prefabricated units pop riveted to gutters with joints sealed with mastic. The guttering shall be in continuous lengths between angles, stopped ends, etc

Q.5 RAINWATER PIPES

Q.5.1 Galvanized sheet iron pipes

Galvanized sheet iron pipes shall have seams at the back and shall be jointed with soldered slip joints. Pipes shall be fixed to walls etc with galvanized mild steel holderbats spaced at not exceeding 2m centres with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.2 Fibre-cement pipes

Fibre-cement pipes shall have spigot and socket joints. Pipes shall be fixed to walls etc with standard aluminium alloy holderbats with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.3 Unplasticized polyvinyl chloride (UPVC) pipes

Pipes shall be fixed to walls etc with patented UPVC or aluminium clips and holderbats as supplied by the manufacturer of the pipe

Q.5.4 Aluminium pipes

Aluminium pipes and fixing straps shall be formed from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides as described for aluminium gutters. Pipes shall be in continuous lengths with formed angles, offsets, shoes, etc. Pipes shall be fixed to walls etc with 20 x 0,6mm straps at not exceeding 1,5m centres screwed to 25 x 75 x 100mm hardwood chamfered and oiled blocks plugged to walls

Q.6 STORMWATER CHANNELS

In-situ concrete stormwater channels shall be constructed of unreinforced concrete with segmental channel formed in top. Channels shall be laid to falls on a well rammed earth bottom and finished smooth on exposed surfaces

Precast concrete channels shall be of 25 MPa concrete, generally in 1m lengths, finished smooth from the mould on exposed surfaces, laid to falls on a well rammed earth bottom, jointed in 1:3 cement mortar and pointed with keyed joints

Q.7 JOINTS

Joints of pipes not covered by SANS shall be as follows:

Pipes

Fibre-cement, concrete, pitch-impregnated fibre and vitrified clay pipes for use under ground in non-pressure pipe lines

Cast iron for use above ground

Cast iron for use below ground

Galvanized mild steel

Joints between pipes of different materials shall be as follows:

Between cast iron and mild steel

Between cast iron and clay

Between mild steel or copper and clay

Joints

Flexible joints in accordance with the manufacturer's instructions

Spigot and socket joints with tarred rope yarn and caulking compound

or

Plain ended joints with stainless steel couplings with neoprene rubber sleeves

Spigot and socket joints with tarred rope yarn and caulking compound

Joints of screwed galvanized steel sockets or bolted galvanized iron flanges

Screwed joints with plastic jointing tape or hemp

Flanged joints which shall be bolted and provided with rubber gaskets and with flanges screwed to pipes

Spigot and socket joints with tarred rope yarn and caulking compound

Spigot and socket joint with semi-dry cement caulking and 1:2 cement mortar fillet

Spigot and socket joint with either bitumen or semi-dry cement caulking and 1:2 cement mortar fillet

Q.8 FIXING OF PIPES

Pipes shall be fixed as follows:

Q.8.1 Galvanized mild steel (except those stated in Q.8.3)

To walls with galvanized mild steel brackets for pipes not exceeding 80mm diameter and with galvanized cast iron hinged holderbats with brass pins or bolts for pipes exceeding 80mm diameter; both types with tails cut and pinned in 1:3 cement mortar

To woodwork with screw-on type galvanized mild steel holderbats

Q.8.2 Copper and stainless steel

To walls with brass holderbats or screw-on type two-piece spacing clips for pipes not exceeding 75mm diameter and with purpose made holderbats for pipes exceeding 75mm diameter; both types with tails cut and pinned in 1:3 cement mortar

To woodwork with screw-on type brass holderbats

Q.8.3 Cast iron and galvanized mild steel for soil, waste and vent pipes

To walls with hinged cast iron holderbats with brass bolts and with tails cut and pinned in 1:3 cement mortar

To woodwork with screw-on type galvanized mild steel holderbats

Q.8.4 Polyethylene, polypropylene and patented UPVC or unplasticized polyvinyl chloride

To walls, woodwork, etc with aluminium clips and holderbats as supplied by the manufacturer of the pipes

Q.8.5 Fibre-cement

To walls with aluminium alloy holderbats with tails cut and pinned in 1:3 cement mortar

Q.8.6 Pipes fixed to ceilings

Fixed with holderbats and standard or purpose made hangers, with extended hangers for pipes to falls

Q.9 PIPES LAID IN GROUND

Q.9.1 Water pipes etc

Water pipes, gas pipes, etc laid in ground shall be at least 400mm deep from the crown of the pipe to the finished surface

Q.9.2 Drain pipes

Excavations taken out too deep shall be filled in with selected soil and compacted. Backfilling to sides and up to 300mm above plastic pipes shall be free from stone or hard substances which will not pass a 10mm mesh

Q.10 CLEANING EYE LIDS

Cleaning eye lids for drain pipe fittings shall be fixed and sealed as follows:

Pipe fittings

Method of sealing and fixing

Fibre-cement

Sealed with synthetic rubber or bituminous mastic packing and fixed with screws

Vitrified clay

Polypropylene lid sealed with synthetic rubber packing and pressed into position

Polypropylene and unplasticized polyvinyl chloride

Sealed with synthetic rubber packing and screwed on or pressed into position

Cast iron

Sealed with tallow or putty and fixed with non-ferrous metal screws

Galvanized malleable cast iron and cast brass

Sealed with synthetic rubber packing and screwed in

Q.11 CLEANING EYES

Cleaning eyes shall consist of cast iron frames and lids with letters "CE" (or "SO") cast in lids. The lids shall be secured with non-ferrous metal screws. Frames shall be jointed to vertical drain pipes. Cleaning eyes shall be encased in unreinforced concrete taken up to ground level and plastered on exposed surfaces

Q.12 INSPECTION EYE MARKER SLABS

Inspection eye marker slabs shall be 350 x 350 x 50mm thick precast concrete finished smooth from the mould, with letters "IE" (or "IO") formed in top and placed flush in ground or paving

Q.13 GULLEYS

Gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete to finish flush with gulley head top and taken up to at least 50mm above surrounding finished surfaces. The outer top edge of the concrete encasing shall be splayed and the exposed surfaces plastered

Q.14 DISHED GULLEYS

Dished gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete and with dished unreinforced concrete hopper size 450 x 450mm overall around gulley head with rounded kerb 50mm wide to front and sides and 25mm wide at back, 100mm high above top of dishing and the hopper plastered on exposed surfaces. Top of hopper shall be taken up to at least 50mm above surrounding finished surfaces

Q.15 SUMPS, CATCHPITS, INSPECTION CHAMBERS, ETC

Q.15.1 Rainwater sumps

Rainwater sumps shall be built with half-brick sides on 100mm thick unreinforced concrete bottom, plastered internally on walls and with 80mm high unreinforced concrete kerb at top rebated for grating or cover and plastered on exposed surfaces

Q.15.2 Stormwater catchpits and inspection chambers

Brick catchpits and inspection chambers shall be built with one-brick sides on 150mm thick unreinforced concrete bottom projecting 100mm beyond walls all round, plastered internally on walls and with 100mm thick reinforced concrete cover slab with opening rebated for frame of grating or cover and plastered on exposed surfaces

Precast concrete catchpits and inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LE-1 of SANS 1200LE. Precast concrete manhole sections and slabs shall comply with SANS 1294 and pipes shall be SC type and in accordance with SANS 677

Q.15.3 Sewer inspection chambers

Brick inspection chambers shall be built as for brick stormwater inspection chambers and with the bottom of the chamber well benched around half round channels, bends, junctions, etc up to sides of chamber in unreinforced concrete finished smooth

Precast concrete inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LD-5 of SANS 1200LD. Precast concrete manhole sections and slabs shall comply with SANS 1294 and the pipes shall be SC type in accordance with SANS 677

Q.15.4 Stormwater drain junction boxes

Junction boxes shall be formed of 150mm thick unreinforced concrete bottom and sides to suit the various sizes of the drain pipes and built after the pipes have been laid, with the sides taken up slightly higher than the highest pipe and finished level on top for and covered with a 75mm thick loose precast concrete slab

Q.15.5 Step irons

Where inspection chambers exceed 1,2m deep, cast iron step irons shall be provided, built into the wall at 300mm centres and staggered regularly in vertical rows spaced at 200mm centres horizontally

Q.16 STOPCOCK AND METER BOXES

Stopcock and meter boxes shall be built with half-brick sides with a cast iron box and lid complying with SANS 558 set in 75mm wide unreinforced concrete kerb for the full depth of the cast iron box and plastered on exposed surfaces

Q.17 VALVE CHAMBERS

Valve chambers shall be built with half-brick sides with 100mm thick unreinforced concrete kerb to top with rebate for cover and frame to finish flush with adjacent paving or finished ground level and plastered on exposed surfaces

Q.18 CAST IRON COVERS, GRATINGS, ETC

All cast iron covers, gratings, frames and surface boxes shall be coated with preservative solution. Frames shall be cast into concrete. Covers, except covers to stormwater drainage or electrical cable inspection chambers, shall be set in grease

Q.19 CONCRETE ENCASING

Concrete encasing for pipes, bends, traps, gulleys, grease traps, etc shall be unreinforced concrete not less than 100mm thick all round

Q.20 SANITARY FITTINGS

Q.20.1 General

Glazed ceramic, acrylic and porcelain enamelled sanitary fittings and component parts shall be white. Accessories for sanitary fittings shall be chromium plated brass

Waste outlets for baths, basins, etc shall comprise chromium plated brass waste union with grating, rubber washers and locknut, fitted with rubber or vulcanite plug on a chromium plated brass chain and stay

Q.20.2 Stainless steel sanitary fittings

Stainless steel sinks and draining boards, basins, wash troughs and urinals shall be AISI Type 304 satin finished stainless steel. All stainless steel fittings shall be treated on the back with a vermin proof sound deadening coating. Sinks, basins and wash troughs shall be provided with 40mm diameter screwed waste outlets

Q.20.3 Precast concrete wash troughs

Reinforced precast concrete wash troughs shall have a sloping front with ribbed rubbing surface and shall be finished smooth on exposed faces with top edges and inner angles rounded. Each compartment shall be fitted with a 40mm diameter waste outlet. Wash troughs shall each be supported on two reinforced precast concrete pedestals finished smooth on exposed faces

Q.20.4 Steel baths

Steel baths shall be porcelain enamelled internally and painted externally and fitted with waste outlet and overflow grating with coupling

Q.20.5 Acrylic resinous baths

Acrylic resinous baths shall be fitted with waste outlet and overflow grating with coupling

Q.20.6 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins and vanity units shall have a smooth high gloss finish, with outlet openings, soap recesses, tap-holes and integral overflow and shall be fitted with waste outlet and overflow grating with coupling

Q.20.7 Glazed ceramic sanitary fittings

Sinks shall be provided with integral weir overflows

Washdown closet pans shall have washdown action and be provided with smooth finished injection moulded polypropylene heavy duty double flap seats fixed with non-ferrous bolts. Urinal channels shall be provided with outlet gratings fitted in bitumen

Q.20.8 Flush and sparge pipes

Flush pipes for high level cisterns shall be of plastic or drawn galvanized steel

Flushpipes for low level cisterns shall be of plastic

Flush and sparge pipes for urinals with high level cisterns shall be of chromium plated copper piping and of the sizes recommended by the manufacturer of the urinal

Q.21 INSTALLATION OF SANITARY FITTINGS

Sanitary fittings shall be installed as follows:

Q.21.1 Precast concrete wash troughs

Precast concrete wash troughs shall be bedded on top of pedestals which shall be bedded on floors in 1:3 cement mortar

Q.21.2 Stainless steel wash troughs and wash hand basins

Stainless steel wash troughs and wash hand basins shall be fixed to walls on a pair of galvanized mild steel gallews brackets bolted to wall with 6mm diameter expanding bolts

Q.21.3 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins shall be fixed to walls on a pair of standard painted cast iron brackets screwed to underside of basin and bolted to wall with 6mm diameter expanding bolts

Q.21.4 Ceramic wash hand basins

Ceramic wash hand basins shall be fixed to walls on a pair of standard painted steel or cast iron brackets bolted to wall with 6mm diameter expanding bolts

Q.21.5 Acrylic resinous baths

Acrylic resinous baths shall be bedded in 1:5 cement mortar on three cross rows of bricks or bedded solid on a layer of dry river sand and fixed to wall with galvanized steel brackets under edges (in the middle of the sides against walls) bolted to wall with 6mm diameter expanding bolts and sealed along top against wall finishes with patent mildew resistant silicone rubber

Q.21.6 Washdown closet pans and cisterns

Washdown closet pans shall be bedded on floors in 1:3 cement mortar. Cisterns shall be fixed to walls with 6mm diameter expanding bolts

Q.21.7 Ceramic urinals

Ceramic stall and slab urinals shall be bedded on floors and against walls in 1:3 cement mortar. Slabs, channels, treads, etc shall be jointed in 1:3 cement mortar and pointed in white cement

Ceramic bowl urinals shall be fixed to walls on standard steel brackets bolted to wall with 6mm diameter expanding bolts. Cisterns shall be fixed to walls on standard brackets bolted to wall with 6mm diameter expanding bolts

Q.21.8 Stainless steel urinals

Stainless steel stall and slab urinals shall be bedded on floors in 1:3 cement mortar and with backs and sides against walls filled in with fine unreinforced concrete. Cisterns shall be fixed as cisterns for ceramic urinals

Q.22 FIRE HOSE REELS

Fire hose reels shall each be fitted with a 30m long hose of internal diameter not less than 19mm with a 4,8mm internal diameter chromium plated brass nozzle

Q.23 FIRE EXTINGUISHERS

All fire extinguishers shall be fully charged

Q.24 TESTS

Sewerage pipe lines, sanitary plumbing including fittings and hot and cold water supply and fire service shall be tested to the approval of the Principal Agent and Local Authority

The Contractor shall provide all testing apparatus, material and labour required for the tests and inspections

R. GLAZING

R.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glass in building	SANS 50572-1 to 5
Glazing putty for wooden and metal window frames	SANS 680
Silvered glass mirrors for general use	SANS 1236
Safety and security glazing materials for buildings	SANS 1263-1 to 3
Sealing compounds for the building industry, one Component, silicone-rubber based	SANS 1305
The installation of glazing materials in buildings	SANS 10137
Work on glass for glazing	SANS 1817

R.2 PUTTY ETC

Glazing putty shall be Type I for wooden sashes and Type II for steel sashes. Putty for glazing to unpainted hardwood shall be tinted to match the colour of the wood

Back putty shall not exceed 3mm thick. Putty shall not be painted until it has formed a surface crust, and if the putty does not form a surface crust it shall be replaced

Butyl putty shall be used where glass is to be fixed in aluminium sashes with glazing beads

Non-setting compounds shall be used where laminated glass is fixed in sashes with glazing beads

S. PAINTWORK

S.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Decorative paint for interior use	SANS 515
Decorative high gloss enamel paints	SANS 630
Primers for wood (for external work)	SANS 678
Primers for wood (for internal work)	SANS 678
Zinc phosphate primer for steel	SANS 1319
Undercoats for paints (except emulsion paint)	SANS 681
Aluminium paint	SANS 682
Varnish for interior use	SANS 887
Emulsion paints	SANS 1586

Materials for paintwork shall be delivered to the site in unopened containers and applied in accordance with the manufacturer's instructions. Materials shall be suitable for application to the surfaces concerned. Undercoats shall be as recommended by the manufacturer of the finishing coats

S.2 PREPARATORY WORK

S.2.1 Plastered surfaces etc

Plastered surfaces shall be thoroughly inspected and, if necessary, washed down and brushed in order to remove any traces of efflorescence and allowed to dry completely before any paint finish is applied. Before any paint is applied, holes, cracks and irregularities in plaster and other surfaces shall be filled with a suitable filler and finished smooth. Unfinished concrete surfaces shall have all projections rubbed off and shall be thoroughly cleaned with a spirits-of-salts solution (1 part concentrated spirits-of-salts to 4 parts water)

S.2.2 Metal surfaces

Metal surfaces shall be sanded, where necessary, washed with a suitable cleaning agent and left smooth

Protective coatings applied by manufacturers to galvanized metal surfaces shall be removed with a suitable agent and the surfaces washed down

Rust, grease and defective factory primers on metal surfaces, as well as pitch on cast iron pipes, shall be removed

S.2.3 Wood surfaces

Knots in woodwork shall be treated with knotting. Minor blemishes shall be filled with a suitable filler. Wood surfaces shall be sanded smooth

S.3 APPLICATION OF PAINT

Primers to wood surfaces shall be applied by brush. Primers to other surfaces may be applied by roller with the approval of the Principal Agent. Undercoats and finishing coats may be applied by brush or roller

Paint shall not be sprayed on except in the case of cellulose and other special paints where spray painting is the accepted method of application

Before subsequent coats of paint are applied the previous coat shall be properly dry and shall be sanded down where necessary

S.4 COLOUR SCHEME

A colour scheme comprising colours and the blending of colours approved by the Principal Agent shall be used for the paintwork. The tints of the undercoats shall closely match the finishing coat but nevertheless differ sufficiently to indicate the number of undercoats. Colour samples of the finishing coats shall be provided in all cases

S.5 GENERAL

Paintwork shall include the preparation of surfaces, filling, stopping, sanding and priming of nail heads and screws. Where windows, sashes, etc are to be painted, the rebates of the openings to be glazed shall be primed

T. PAPERHANGING

T.1 PREPARATORY WORK

Plaster surfaces to be papered shall be dry, thoroughly cleaned down, filled with a suitable filler as necessary to obtain a smooth surface and painted thereafter with a single coat of emulsion paint

Wood surfaces to be papered shall be knotted, stopped and sanded

T.2 PAPERHANGING

Wallpaper shall be hung in vertical long lengths. Vertical joints shall be close-fitted and plumb and the paper shall be tightly fitted to skirtings, ceilings, door frames, windows, etc. Horizontal joints will not be allowed

U. EXTERNAL WORKS

U.1 GENERAL

U.1.1 Excavations

Excavations shall be deemed to be in "earth"

U.2 LANDSCAPING

U.2.1 Topsoil

Topsoil shall vary between sandy loamy soil and sandy clayey soil with an ideal composition of 15% to 25% clay, 10% silt/sludge and 65% to 75% sand, with a minimum ratio of organic material of 2%. All material shall be free of harmful deposits as well as unwanted seeds

U.2.2 Compost

Compost shall be composed of properly decayed organic material, free from harmful deposits, salts, seeds and other waste material and shall have a pH of more than 4 and less than 7

U.2.3 Mulch

Mulch shall be approved organic material free from small particles of bark residue, fungus, disease, etc

U.2.4 Lime

Lime shall be agricultural lime of an approved manufacture

U.2.5 Fertilizer

Fertilizer shall be of the type specified, mixed thoroughly into the soil as prescribed. No fertilizer shall be added more than two weeks prior to planting

U.2.6 Backfilling

Backfilling in plant and tree holes shall be composed of two parts topsoil to one part compost mixed thoroughly together and compacted by foot in 100mm layers. Fertilizer shall only be added if prescribed

U.2.7 Pebbles

Pebbles shall be smooth with a uniform colour and form and ranging in size from 50mm to 75mm diameter. Removal of pebbles from river beds shall be done selectively to avoid any major disruption to the ecology of the river and environment

U.2.8 Plant material

U.2.8.1 General

All plant material (plants, shrubs, trees, etc) shall be obtained from a registered nursery and shall be free from damaged parts, parasites, fungus, other plant diseases or insects. No container-bound plants will be acceptable

U.2.8.2 Trees

The height of trees described in the bills of quantities shall be measured from the top of the root ball to the top of the tree. Where trees are pruned, such prune wounds shall not be more than 25mm in diameter and be sealed with an approved sealing compound

U.2.8.3 Shrubs and small plants

Shrubs and small plants shall meet the requirements for height and spread as specified. Thin or sparsely branched plants shall not be accepted. Branches shall be well spread with ample young branches and the plant as a whole shall be growing well

U.2.8.4 Groundcover

Groundcover shall be dense and healthy and shall comply with the minimum requirements for leaf density as specified

Formal grass shall be planted as runners in 50mm deep drills at 150mm centres unless otherwise described

U.2.9 **Cultivation and preparation of planting areas etc**

All surface rocks and stones larger than 50mm shall be removed before commencing cultivation and preparation. The entire area shall be ripped and rotavated using approved machinery by breaking up the earth to a depth of 300mm at 600mm centres in both directions, unless otherwise described, and then levelled. Where fertilizer or compost is specified, it shall be worked into the topsoil after ripping and rotavation to a depth of 300mm and finished to final levels

All fertilizer to areas to be grassed shall be strewn on the final layer before final finishing is commenced and worked mechanically into the top 150mm soil

U.2.10 **Planting procedure**

Holes for shrubs and groundcover shall be as follows:

Shrubs – 500 x 500 x 500mm deep

Groundcover – 300 x 300 x 300mm deep (if not planted in drills)

Holes for trees shall be square, of adequate size to accommodate the root system and suitable for the height of the tree

All plant material shall be watered thoroughly before careful removal from the container and planted in the prescribed planting medium with the top of the soil in the container finishing level with the surrounding area. Water dams size 800mm diameter x 150mm deep and 500mm diameter x 150mm deep shall be formed around trees and shrubs respectively and all planting material shall be watered immediately after planting. Trees, shrubs, etc shall be properly staked or stayed, depending on their size, on the prevailing windy side with patent tree ties

U.2.11 **Maintenance**

All planted areas shall be maintained for a period of three months after practical completion as defined in the contract with the exception of hydroseeded areas which shall be maintained for 12 months after an acceptable cover has been obtained

This maintenance shall consist of keeping clear of weeds and litter, loosening soil where necessary every two weeks, replacing damaged, diseased or dead plants, pruning, cutting and mowing as necessary and watering so as to keep the plant material in a healthy growing condition

U.3 **ROADWORK**

U.3.1 **Filling**

Filling under roads etc shall be of inert material having a maximum plasticity index of 10, free from large stones etc spread, levelled, watered and compacted in layers not exceeding 200mm thick to a density of 98% Mod AASHTO

U.3.2 **Preparation of sub-grade**

The sub-grade shall be prepared by scarifying for a depth of 150mm and compacting to a density of 98% Mod. AASHTO, including trimming to the correct levels and grades

U.3.3 **Base course**

The base course shall consist of crusher run stone compacted to a density of 98% Mod. AASHTO and finished to the correct levels and grades

U.3.4 **Weed killer**

The completed sub-grade shall be treated with an approved total weed killer

U.3.5 **Bituminous premix road surfacing**

Before spreading the premix material, the base course shall be swept clean and free from all dust, dirt and loose particles, lightly wetted and sprayed with a prime coat of cutback bitumen complying with SANS 308 at the rate of 1 litre/m²

The material shall consist of semi-gap graded crushed stone aggregate having the following grading:

Sieve size (mm)	% By mass passing sieve
13,2	100
4,75	45-60
2,36	42-55
1,18	40-52
0,3	25-45
0,075	5-12

The aggregate shall be mixed with bituminous road tar binder complying with SANS 748 at the rate of 1m³ of stone to 120 litre of emulsion at atmospheric temperature

The binder shall be added to the stone and mixed until the stone is uniformly coated. Thereafter 5% of clean, dry quartzitic sand shall be added and mixed until evenly distributed through the mixture

The premix shall be applied only after the primer has dried out completely and shall be spread immediately after mixing and rolled on the same day

Spreading shall be done evenly over the prepared base course to a loose depth sufficient to ensure the consolidated thickness specified

Rolling shall commence as soon as the binder has set sufficiently, followed after three days by a final rolling

U.3.6 Precast concrete block road surfacing

Paving blocks shall be precast concrete blocks complying with SANS 1058

Blocks shall be laid to true levels and grades on and including a 25mm thick layer of river sand with joints exceeding 2mm and not exceeding 6mm wide

After laying, the paving shall be compacted by means of a vibrating plate compactor, with joints between the blocks filled in, after compaction, by sweeping in fine sand

Infill areas at edges of paving constituting less than 25% of a full block unit and of 25mm minimum dimension shall be filled with Class C prescribed mix unreinforced concrete with top surface trowelled smooth to match blocks. Smaller areas shall be filled with 1:4 cement mortar

U.3.7 Precast concrete kerbs and channels

Precast concrete kerbs and channels shall comply with SANS 927, generally in 1m lengths and finished smooth from the mould on exposed surfaces. Kerbs and channels shall be bedded on and jointed in 1:3 cement mortar and pointed with keyed joints. Bases to kerbs shall be Class B prescribed mix unreinforced concrete

U.3.8 Process control tests

The Contractor shall be responsible for carrying out all necessary process control tests on the density and moisture content of the compacted sub-grade, base course, etc to ensure that the required compaction is being attained

U.4 FENCING ETC

U.4.1 Materials

Materials and workmanship shall comply with the following specifications and requirements :

Wooden poles, droppers, guardrail posts and spacer blocks	SANS 457-2&3
Zinc-coated fencing wire	SANS 675
Prefabricated concrete components for fencing	SANS 1372
Chain-link fencing and its wire accessories	SANS 1373

Fasteners SANS 1700

Anti-intruder fences CKS 451

Metal droppers and standards CKS 451

U.4.2 **Galvanized wire**

All galvanized wire shall be zinc coated wire with Class B zinc coating. Straining wire shall be 4mm diameter galvanized mild steel wire. Tie wire shall be 1,6mm diameter galvanized mild steel wire

U.4.3 **Plastic coated wire**

Plastic coated straining wire shall be 3,15mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,95mm

Plastic coated tie wire shall be 1,8mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 2,5mm

U.4.4 **Galvanized barbed wire**

Galvanized barbed wire shall be 2,5mm diameter mild steel double strand reverse twist zinc coated barbed wire with Class A zinc coating

U.4.5 **Galvanized wire mesh**

Galvanized wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire

U.4.6 **Plastic coated wire mesh**

Plastic coated wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,25mm

U.4.7 **Galvanized welded wire mesh**

Galvanized welded wire mesh shall be fabricated from pre-galvanized wires to rectangular pattern welded together at each intersection using a welding method which forms a zinc oxide protective coating at each intersection

U.4.8 **Razor wire**

Razor wire shall be fabricated from 2,5mm diameter galvanized high tensile steel wire fitted with razor barbs formed of 0,5mm galvanized steel strip clipped on at 37,5mm centres

U.4.9 **Metal droppers and standards**

Droppers shall be of ridged T-section mild steel with a mass of not less than 0,55kg/m. Standards shall be of I-section mild steel with a mass of not less than 3kg/m or of ridged edge Y-section mild steel with a mass of not less than 2,5kg/m, and shall be driven 600mm deep into the ground

Droppers and standards shall have either galvanized, sprayed metal or painted finish as described in the items and in accordance with CKS 451. In addition, those surfaces of standards embedded in the ground shall be coated with bitumen

U.4.10 **Metal posts and stays**

Posts and stays shall comply with CKS 451 and shall be of black galvanized mild steel tubing as specified

Straining posts shall be of 108mm outside diameter x 3mm wall thickness tubing, each with a 300 x 300 x 5mm thick mild steel sole plate and a steel cap welded on

Intermediate posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate and a steel cap welded on

Stays for straining posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate welded on and fixed raking with top end flattened, bent, holed and bolted to straining post with and including a 5mm diameter galvanized mild steel bolt with nut and washer

Posts and stays shall have either galvanized or painted finish as described in the items and in accordance with CKS 451. In addition, sole plates and portions of posts and stays embedded in ground shall be coated with bitumen

U.4.11 Timber posts, stays and droppers

Timber posts shall be 125mm diameter, timber stays shall be 100mm diameter and timber droppers shall be 30mm diameter

U.4.12 Prestressed concrete posts and stays

Prestressed concrete posts and stays shall be finished smooth from the mould and uniformly stressed by means of high tensile longitudinal prestressing wires with concrete cover to wires of not less than 20mm

Corner and straining posts shall be 100 x 100mm and intermediate posts and stays shall be 75 x 75mm. Stays shall be fixed raking with top end splayed and glued to posts with a suitable epoxy compound

U.4.13 Bolts, nuts and washers

Straining eye bolts, hinge bolts, bolts, nuts and washers shall be galvanized

U.4.14 Precast concrete fencing

Precast concrete fencing over sloping terrain shall be stepped to suit terrain, including the use of increased lengths of posts as necessary, excavation, etc

U.4.15 Concrete bases

Bases in ground for posts, stays, etc shall be of Class B prescribed mix concrete with tops 100mm below surface of ground

Sizes of concrete bases for posts, stays, etc shall be as follows:

Straining and gate posts	–	450 x 450 x 700mm deep
Intermediate posts	–	300 x 300 x 600mm deep
Stays	–	600 x 300 x 500mm deep

U.4.16 Security overhangs

Where fencing is described as having a security overhang, the posts and standards shall have angular (single arm) extension arms

Extension arms shall be attached to the posts and standards by welding in the case of steel and by spiking in the case of timber

Concrete extension arms shall be cast integrally with the post or standard

Barbed wire to security overhangs shall be tightly strained and wired at each intersection with extension arms and shall have barbed wire braces at 450mm centres between standards, posts, etc wired onto the barbed wire and the top straining wire

U.4.17 Gates

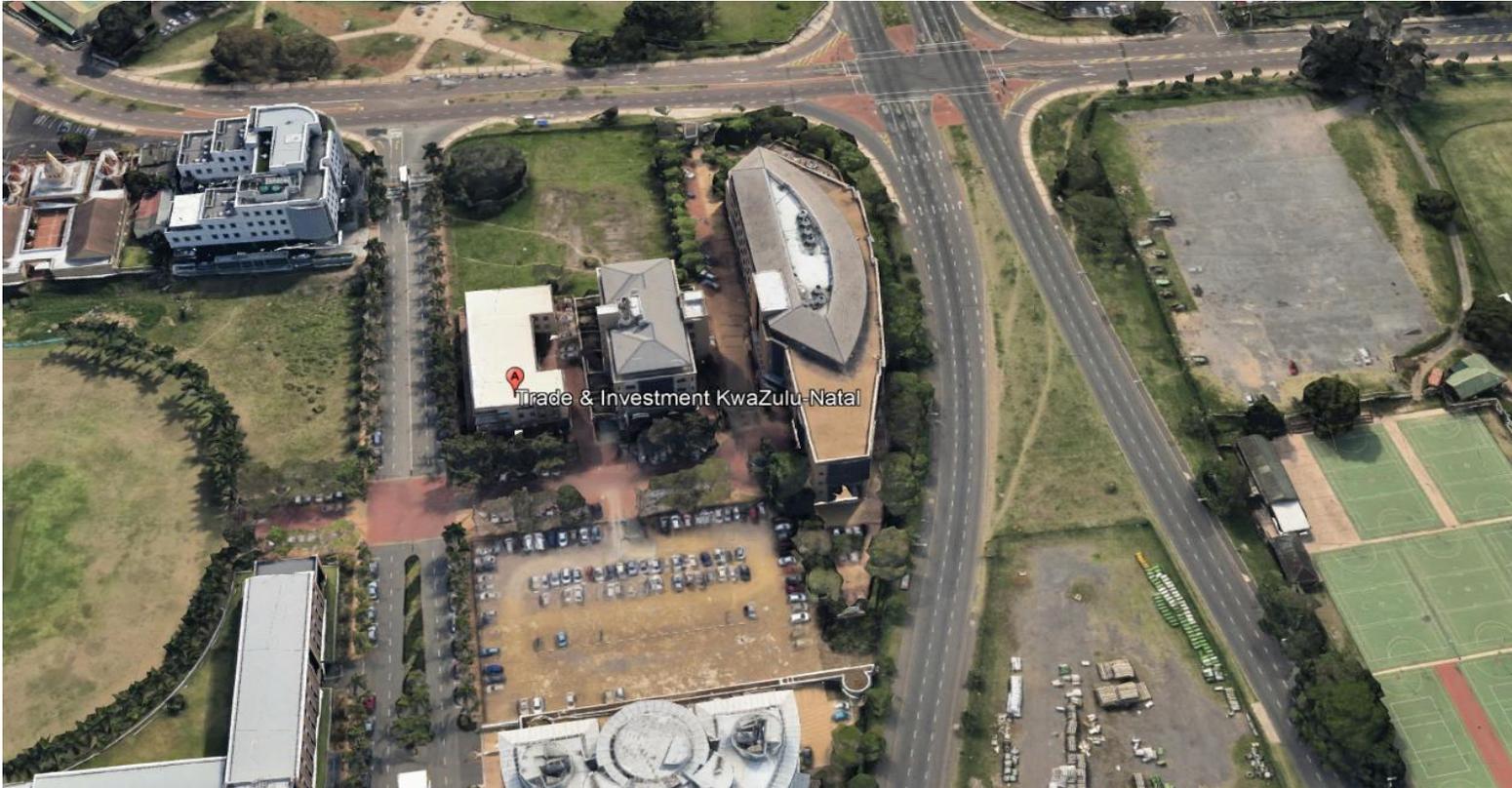
Gates shall be formed of 40mm outside diameter x 2,5mm wall thickness mild steel tubular framework with welded joints, strongly braced as necessary and filled in with wire mesh as described above, properly strained and securely bound to framework with tie wire

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 2

Map of Tender Submission

Tender Submission Location



Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 3

Joint Venture Agreement



Joint Venture Agreement
(March 2004)
(First Edition of CIDB document 1017)

1. **PREAMBLE**

This agreement is made and entered into by and between

of the first part and

of the second part and

of the third part.

(allow for additional parties as necessary).

Whereas the foregoing parties have resolved to form a Joint Venture under the title of

for the exclusive purposes of securing and/or executing the Contract to be awarded by

(name of Employer)

to the Trade and Investment KwaZulu-Natal (TIKZN) in respect of the following project:

for *(brief description of Contract)*

Eco Park: Fencing and Site Clearance for Plessislaer Site

Now it is hereby agreed as follows :

2. **DEFINITIONS AND INTERPRETATION**

2.1 **Definitions**

The following words and expressions shall have the meanings indicated, except where the context otherwise requires. Defined terms and words are, in general, signified in the text of the Agreement by the use of capital initial letters, but the absence of such letters does not necessarily signify that a term, or word, is not defined.

'Agreement' means the agreement between the Members of the Joint Venture and includes this model form of agreement together with the Preamble, Specific Provisions, if any, Schedules 'A', 'B' and 'C' and any relevant Documents prepared prior to the signing of the Agreement and appended thereto.

'Contract' means the contract with the Employer for the supply of the Deliverables, for the purposes of securing and executing which, the Joint Venture has been formed.

'Deliverables' means the works and/or services, equipment, materials, goods, etc. to be furnished by the Joint Venture to the Employer in terms of the Contract.

'Document' means any written, drawn, typed, printed, or photographic material, which relates to the Agreement.

'Employer' means the person, or body, which is to award the Contract and will employ the Joint Venture if it is awarded the Contract.

'Joint Venture' means the joint venture formed by the Members in accordance with the Agreement.

'Management Committee' means the body established in terms of the Agreement to manage all aspects of the work of the Joint Venture in securing and executing the Contract and in meeting the provisions for the Agreement.

'Member' means a person, or body which, being a party to the Agreement, is a member of the Joint Venture.

'Member's Interest' means the proportion expressed as a percentage, which the total monetary value of all resources provided and contributions made by a Member towards the execution by the Joint Venture of the Contract bears to the total of such values by all Members and, unless otherwise indicated in the Agreement, represents the extent to which the Member participates in the fortunes of the Joint Venture.

'Representative' means the person representing a Member on the Management Committee.

'Schedules' means Schedules 'A', 'B' and 'C' which set out general, financial and other information relating to the Members and the obligations, duties, rights, risks and benefits arising from their participation in the Joint Venture.

'Specific Provisions' means the variations, if any, required to this standard form of agreement for the specific purposes of the Agreement.

2.2 Interpretation

Unless inconsistent with the context, an expression in the Agreement which denotes:

- any gender shall include the other genders
- a natural person shall include a juristic person and vice versa
- the singular shall include the plural and vice versa

2.3 Headings

The headings to clauses of the Agreement shall not be considered part thereof, nor shall the words they contain be taken into account in the interpretation of any clause.

2.4 Law

The Agreement shall be construed in accordance with and governed by the laws of the Republic of South Africa and the English language versions shall prevail.

2.5 Language

English shall be exclusively used by the Members in the preparation of Documents unless otherwise indicated.

2.6 Conflict between Agreement and Contract

Should any provision of the Agreement be in conflict with the terms of the Contract, the Agreement shall be amended to the approval of the Management Committee so as to eliminate the conflict.

3. JOINT VENTURE GENERAL

3.1 Establishment and Purpose

The Joint Venture established by the Members in terms of the Agreement is an unincorporated association with the exclusive purposes of securing and executing the Contract for the benefit of the Members.

3.2 Termination

The operation of the Joint Venture and the validity of the Agreement shall terminate if and when it becomes evident that the Joint Venture will not be awarded the Contract, or, if the Joint Venture secures the Contract, when all obligations and rights of the Joint Venture and the Members in connection with the Contract and the Agreement have ceased and/or been satisfactorily discharged.

Unless otherwise decided by the Management Committee, the Agreement shall not terminate if a Member changes its name, or is taken over by, or merged with, another body.

This agreement will terminate when any one of the Members resigns, are liquidated or opts out of this agreement and the Joint Venture will be in breach of contract with the Employer and their contract could be cancelled.

3.3 Exclusivity

Unless otherwise agreed by the Management Committee, or provided for in the Contract no Member shall engage in any activity related to the Contract other than as a Member of the Joint Venture and Members shall ensure that their subsidiaries and other bodies over which they have control comply with this requirement.

3.4 Participation of Members

Except as may otherwise be stipulated in the Agreement, each Member shall be responsible for all costs incurred by it prior to the date of inception of the Agreement.

Subsequent to the date of inception of the Agreement, each Member shall, participate in the operations, risks, responsibilities and fortunes of the Joint Venture including, inter alia, the provision of funding, sureties, guarantees, insurances, human and other resources and participation in profits and losses to the extents indicated in the Schedules. Participation in any aspect not covered in the Schedules shall, if an agreement cannot be reached between the Members, be to the same extents as indicated by the Members Interests.

3.5 Management

The affairs of the Joint Venture shall be directed and controlled by the Management Committee, as set out in Section 4 hereof.

3.6 Confidentiality

All matters relating to the Agreement and the Contract shall be treated by the Members as confidential and no such matter shall be disclosed to any third party without the prior written approval of the Management Committee.

No Member shall be party to the dissemination of publicity relating to the Contract, or the Agreement, without the prior written approval of the Management Committee and the Employer.

3.7 Assignment

No Member shall cede, assign, or in any other way make over any of its rights, or obligations, under the Agreement without the prior written consent of the Management Committee.

- 3.8 Subcontracting
No Member shall subcontract any obligation, work or duty for which it is, itself, responsible in terms of the Agreement without the prior written consent of the Management Committee.
- 3.9 Variations to Agreement
No variation, modification, or waiver of any part of the Agreement shall be of any force, or effect, unless unanimously agreed by the Members and reduced to writing.
- 3.10 Liability
Each Member warrants that it will indemnify the other Members against all legal liabilities arising out of, or in connection with the performance of its obligations under the Agreement.
It is acknowledged by the Members that they may be held jointly and severally liable in respect of claims against the Joint Venture by the Employer or third parties.

4. MANAGEMENT OF JOINT VENTURE

- 4.1 General
The affairs of the Joint Venture shall be directed, controlled and managed by the Management Committee, which, within the terms of the Agreement and the Contract, shall have full authority to bind the Members in all matters relating to the affairs of the Joint Venture.
Communication between the Joint Venture and the Employer, or third parties, relating to the Contract shall be conducted exclusively by the Management Committee, or by such person as it may delegate to perform this function.
The Management Committee shall have the power to appoint a project manager and/or such other persons as it may see fit to appoint for the purpose of executing the Contract and may delegate such of its powers, responsibilities and duties as it may consider necessary, or desirable, to persons or bodies appointed or seconded for this purpose.
Such administrative functions as are necessary to ensure the effective operation of the Management Committee shall be performed by its chairman.

4.2 Management Committee

- 4.2.1 Composition
The Management Committee shall, unless otherwise agreed by all the Members, consist of one Representative of each Member and each Member shall be obliged, at all times, to maintain a Representative on the Management Committee.
Each member shall, not later than three working days after the signing of the Agreement, appoint its Representative and notify the other Members of the name and contact details of the Representative. Such Representative shall have the power to bind the Member that he represents in all matters relating to the execution of the Contract and the performance of the Agreement.
A Member shall be entitled, after giving the other Members not less than three working days written notice of his intention to do so, appoint, remove and/or replace, an alternate who shall, at any meeting of the Management Committee from which the Representative whom he represents is absent, be vested with all rights and powers and subjected to all the obligations of the absent Representative.
The chairman of the Management Committee shall be the Representative of the Member which has the largest Member's Interest. If two, or more, Members have the same, largest Member's Interest, the chairmanship shall rotate between the Representatives of such Members at three monthly intervals, the order of rotation to be determined by ballot.

Notwithstanding the foregoing, the chairmanship of the Management Committee may be determined, or changed, at any time by unanimous decision of the Management Committee.

4.2.2 Meetings

No remuneration shall be paid by the Joint Venture to Representatives or their alternates for serving on the Management Meetings of the Management Committee shall take place at such times and places as the Management Committee may determine, provided that the chairman shall convene a meeting of the Management Committee to be held not later than ten working days after he has been requested, in writing, by a Member to do so. Not less than five working days written notice of any meeting of the Management Committee shall be given to all Representatives and their alternates.

The Management Committee may permit, or invite, persons other than Representatives or alternates to attend any of its meetings, but such persons shall not have voting rights.

4.2.3 Decisions

Each Representative shall have one vote on the Management Committee and where, in terms of this clause, a casting vote is required, this shall be exercised by the chairman.

All decisions of the Management Committee shall, desirably, be unanimous. Accordingly, if unanimity cannot, initially, be achieved in regard to a decision, the meeting at which that decision is sought shall be adjourned for a period of 48 hours to enable Representatives to consult with their principals. If, on resumption of the adjourned meeting, unanimity can still not be achieved, the decision, provided it is not one requiring unanimity of the Members, shall be taken by majority vote and, in the event of a tie, the chairman shall exercise a casting vote.

A Member not satisfied with a majority decision of the Management Committee may declare a dispute, to be dealt with in terms of Clause 8 hereof, but the majority decision shall, nevertheless, be implemented with immediate effect.

Decisions of the Management Committee, whether taken at a meeting, or otherwise, shall be recorded in written minutes, which shall be distributed by the chairman to reach the Representatives not later than five working days after those decisions were taken. Such minutes shall be deemed to have been affirmed by the Representatives unless written notice of dissent is received by the chairman not later than three working days after receipt of the minutes by the Representative.

4.2.4 Powers and duties

The functions, responsibilities and powers of the Management Committee shall include, inter alia, those listed below:

- 4.2.4.1 Formulating overall policy in regard to the achievement of the objectives of the Joint Venture.
- 4.2.4.2 Managing the day to day affairs of the Joint Venture.
- 4.2.4.3 Monitoring, directing and co-ordinating the activities of the Members to ensure that the objectives of the Joint Venture are achieved and that the obligations and responsibilities of the individual Members are met.
- 4.2.4.4 Monitoring and controlling the financial affairs of the Joint Venture and ensuring that proper books of account and financial records relating to affairs of the Joint Venture are maintained in an approved form and submitted to the Management Committee for approval at regular intervals, which shall not be longer than one month.
- 4.2.4.5 Determining the necessity for and the details of any changes in the duties and responsibilities of Members provided that any resulting changes in Members' Interests shall be unanimously approved by the Members.
- 4.2.4.6 Determining the terms and conditions of employment of personnel and the emoluments applicable to staff seconded to the Joint Venture by the Members.
- 4.2.4.7 Controlling and approving the appointment of all subcontractors.
- 4.2.4.8 Procuring, after the completion of the Contract and the release of all bonds, guarantees and sureties given in respect of the performances of the Joint Venture and the Members, the preparation and auditing of a final set of accounts, on the basis of which the final profits, or losses, attributable to the individual Members shall be determined and any necessary adjustments effected.

5 RESOURCES OF JOINT VENTURE

The resources to be utilised by the Joint Venture in securing and executing the Contract shall, insofar as these are to be provided directly by the Members, be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Member's Interests are not, except with the unanimous approval of the Members, affected thereby.

Similarly, specific areas of responsibility of the Members for the performance of work and the provision of facilities shall be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Members' Interest are not, except with the unanimous approval of the Members, affected thereby.

5.1 Schedule 'A' (General)

Schedule 'A' shall contain general information relating to the Joint Venture including, inter alia, the following :

1. The Employer's name and address.
 2. A brief description of the Contract and the Deliverables.
 3. The name, physical address, communications addresses and domicilium citandi et executandi of each Member and of the Joint Venture.
 4. The Members' Interests.
 5. A statement indicating whether, or not, Specific Provisions apply to the Agreement.
 6. A schedule of insurance policies which must be taken out by the Joint Venture and by the individual Members.
 7. A Schedule of sureties, indemnities and guarantees that must be furnished by the Joint Venture and by the individual Members.
8. Details of the persons, who, in the event of failure by the Members to reach agreement on the appointments of mediator and arbitrator, will nominate appointees to these positions in terms of Clauses 8.2 and 8.3.

5.2 Schedule 'B' (Financial)

Schedule 'B' shall contain information regarding the financial affairs of the Joint Venture including, inter alia, the following :

1. The working capital required by the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the individual Members from time to time.
2. The banking accounts that are to be opened in the name of the Joint Venture and the manner in which these are to be operated.
3. The rates of interest that will be applicable to amounts by which Members are in debit, or credit, to the Joint Venture.
4. The names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.
5. The intervals at which interim financial accounts and forecasts will be prepared for approval by the Management Committee.
6. Insofar as not covered in Schedule 'C', the basis on which contributions of various types by the Members towards the work of the Joint Venture in securing, executing, managing and satisfactorily completing the Contract, will be valued.
7. The basis on which profits and/or surplus cash will, if available from time to time, be distributed to Members.
8. The basis upon which losses, if any, are to be apportioned to Members.

5.3 Schedule 'C' (Contributions by Members)

Schedule 'C' shall set out the contributions of various types, other than cash, that will be made by the individual Members towards the work and obligations of the Joint Venture and shall, as far as possible, indicate the monetary values to be placed on such contributions, which may include, inter alia, the following :

1. Staff seconded to the Joint Venture.
2. Work carried out and services provided to, or on behalf of, the Joint Venture.
3. Plant, equipment, facilities etc. made available for use by the Joint Venture.
4. Materials and goods supplied to, or on behalf of, the Joint Venture.
5. Licences, sureties, guarantees and indemnities furnished to, or on behalf of, the Joint Venture.
6. Joint Venture Disclosure form required for the Contract.

6. BREACH OF AGREEMENT

If a Member breaches any material provision of the Agreement, or delays or fails to fulfil its obligations in whole, or in part, and does not remedy the situation within fourteen calendar days of receipt of notice from the Management Committee, or another Member, to do so, the other Members shall have the right, without prejudice to any other rights arising from the default, to summarily terminate the Agreement and re-assign the defaulting Member's rights and obligations in the Joint Venture as they see fit and withhold any moneys due to the defaulting member by the Joint Venture.

Each Member shall indemnify the other Members against all losses, costs and claims which may arise against them in the event of the Agreement being terminated as a result of breach of the Agreement by the said Member.

7. INSOLVENCY OF MEMBER

Should a Member be placed in liquidation, or under judicial management, whether provisionally or finally, or propose any compromise with its creditors, the other Members shall be entitled to proceed in terms of Clause 6, as if the Member had breached the Agreement.

8. DISPUTES

8.1 Settlement

The Members shall negotiate in good faith and make every effort to settle any dispute, or claim, that may arise out of, or relate to, the Agreement.

If agreement cannot be reached, an aggrieved Member shall, if he intends to proceed further in terms of Clause 8.2 hereof, advise all other Members in writing that negotiations have failed and that he intends to refer the matter to mediation in terms of Clause 8.2.

8.2 Mediation

Not earlier than ten working days after having advised the other Members, in terms of Clause 8.1, that negotiations in regard to a dispute have failed, an aggrieved Member may require that the dispute be referred, without legal representation, to mediation by a single mediator.

The mediator shall be selected by agreement between the Members, or, failing such agreement, by the person named for this purpose in Schedule 'A'. The costs of the mediation shall be borne equally by all Members.

The mediator shall convene a hearing of the Members and may hold separate discussions with any Member and shall assist the Members in reaching a mutually acceptable settlement of their differences through means of reconciliation, interpretation, clarification, suggestion and advice. The Members shall record such agreement in writing and thereafter they shall be bound by such agreement.

The mediator is authorised to end the mediation process whenever in his opinion further efforts at mediation would not contribute to a resolution of the dispute between the Members.

8.3 Arbitration

Where a dispute or claim is not resolved by mediation, it shall be referred to arbitration by a single arbitrator to be selected by agreement between the Members or, failing agreement, to be nominated by the person named for this purpose in Schedule 'A'.

The Member requiring referral to arbitration shall notify the other Members, in writing, thereof, not later than thirty calendar days after the mediator has expressed his opinion, failing which the mediator's opinion shall be deemed to have been accepted by all Members and shall be put into effect.

Arbitration shall be conducted in accordance with the provisions of the Arbitration Act No. 42 of 1965, as amended, and in accordance with such procedure as may be agreed by the Members or, failing such agreement, in accordance with the rules for the Conduct of Arbitrations published by the Association of Arbitrators and current at the date that the arbitrator is appointed.

The decisions of the arbitrator shall be final and binding on the Members, shall be carried into immediate effect and, if necessary, be made an order of any court of competent jurisdiction.

9. DOMICILIUM

The Members choose domicilium citandi et executandi for all purposes of and in connection with the Agreement as stated in Schedule 'A'. A Member shall be entitled to change his domicilium from time to time, but such change shall be effective only on receipt of written notice of the change by all other Members.

Member No. 1

Thus done and signed at _____ this ____ day of _____ 20__

For and on behalf of _____ [Company]

by [name] _____ who warrants his authority to do so.

As witnesses 1. _____

As witnesses 2. _____

Member No. 2

Thus done and signed at _____ this ____ day of _____ 20__

For and on behalf of _____ [Company]

by [name] _____ who warrants his authority to do so.

As witnesses 1. _____

As witnesses 2. _____

Member No. 3

Thus done and signed at _____ this ____ day of _____ 20__

For and on behalf of _____ [Company]

by [name] _____ who warrants his authority to do so.

As witnesses 1. _____

As witnesses 2. _____

[Allow for additional parties as necessary].

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 4

Builder's Lien Agreement

WAIVER OF CONTRACTOR'S LIEN

DEFINITIONS

Contractor: _____

Employer: Trade & Investment KwaZulu Natal Supply Chain Management

Agreement: GCC FOR CONSTRUCTION WORKS (Second Edition 2010)

Works (description): **Eco Park: Fencing and Site Clearance for Plessislaer Site**

Site: KwaZulu Natal: Umsunduzi Local Municipality: Ward Number:22

AGREEMENT

The Contractor waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works to be executed on the Site

Thus done and signed at _____ on _____
[Date]

Name of signatory

Capacity of signatory

As witness

For and on behalf of the contractor who by signature hereof warrants authorisation hereto

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 5

Geotechnical Investigation Report



**GEVORKYAN
GEOPHYSICS
(PTY) LTD**

CONSULTING EARTH SCIENTISTS

Geotechnical Investigations
Hydrogeological
Investigations
Geophysical Investigations
Dolomite Stability
Investigations
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**REPORT TO UKUZA CONSULTING ON
THE RESULTS OF A GEOTECHNICAL
INVESTIGATION FOR THE PROPOSED
TIKZN ECO-PARK IN EDENDALE,
KWAZULU-NATAL**

GG011-23.R01

05 April 2023

Revision 0

Prepared For:

Ukuza Consulting

Compiled by:

Nishen Govender Pr. Sci. Nat.

MSc Geohydrology

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TABLE OF CONTENTS

Contents

1.	TERMS OF REFERENCE FOR THE PROJECT.....	1
2.	CODES OF PRACTICE AND STANDARDS.....	1
3.	INFORMATION SOURCES.....	2
4.	INVESTIGATION ACTIVITIES	2
4.1	TEST PITTING AND PROFILING	2
4.2	DCP TESTING.....	2
5.	DESCRIPTION OF THE STUDY AREA	3
6.	GENERAL GEOLOGY OF THE SITE	6
7.	GROUNDWATER.....	8
8.	SOIL LABORATORY RESULTS	10
9.	DISCUSSION.....	11
9.1	PROPOSED DEVELOPMENT	11
9.2	SITE STABILITY	11
9.3	GENERAL EARTHWORKS	12
9.4	THE TRECHABILITY/EXCAVATABILITY ON SITE	13
9.5	CLASSIFICATION OF MATERIAL AND RECOMMENDED USAGE	13
9.6	GENERAL SUBGRADE LAYERWORKS GUIDELINES.....	14
9.7	FOUNDING CHARACTERISTICS OF THE SITE.....	14
9.8	BEARING CAPACITY AND SETTLEMENTS FOR SUBSURFACE MATERIALS	15
9.9	NHBRC SITE CLASS DESIGNATIONS.....	16
9.10	FOUNDATION SOLUTION.....	17
9.11	DRAINAGE AND STORMWATER GUIDELINES	19
10.	SUPPLEMENTARY GEOTECHNICAL INVESTIGATION.....	20
11.	CONCLUDING REMARKS	20
12.	REFERENCES.....	21

Appendix A: Test Pit Profiles

Appendix B: DCP Test Results

Appendix C: Laboratory Test Results

Table of Abbreviations

AASHTO	American Association of State Highway and Transportation
begl	Below existing ground level
CBR	California Bearing Ratio
DCP	Dynamic Cone Penetrometer Test
E	East
GM	grading modulus
IMC	insitu moisture content
kN/m ²	kilonewtons per metre square
LL	liquid limit
LS	linear shrinkage
GG	Gevorkyan Geophysics Pty Ltd
m	metre (s)
MDD	maximum dry density
mm	millimetre
No.	number
N	North
OMC	optimum moisture content
PI	plasticity index
SANS	South African National Standards
S	South
TP	Test Pits
TRH	Technical Recommendations for Highways (1985)

Document Control and Approvals		
Report Date:	05 April 2023	
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Geotechnical Practitioner	SACNASP No	Signature
Nishen Govender Pr. Sci. Nat. MSc Geohydrology	400138/17	
Documents Issued:	Electronically	
Document Issue:	Issued	05 April 2023

1. TERMS OF REFERENCE FOR THE PROJECT

Gevorkyan Geophysics Pty Ltd (GG) was requested by Ukuza Consulting to carry out a geotechnical investigation for the proposed TIKZN Eco-Park in Edendale, KwaZulu-Natal.

Gevorkyan Geophysics has proposed to carry out the following:

- Handtools excavated inspections pit.
- Dynamic cone penetration tests.
- Sampling of soil for further laboratory testing.
- Prepare a geotechnical report.

This geotechnical report referenced **GG011-23.R01** provides the results of the geotechnical investigation and provides recommendations in terms of subgrade materials, foundations, slope stability, excavatability, earthworks, stormwater drainage, and material usage.

2. CODES OF PRACTICE AND STANDARDS

The services were carried out in accordance to the current level of geotechnical standards practiced by professional in Southern Africa.

The document referenced for use is "*Site Investigation Code of Practice, 1st Edition, South African Institution of Civil Engineering – Geotechnical Division, January, 2010*"

The nature of geotechnical engineering is such that variations in soil conditions may occur even where sites seem to be consistent. Variations from what is reported here may become evident during construction and it is thus imperative that an appropriately qualified and experienced competent person inspects all critical stages of development including, but not limited to excavations, to ensure that conditions at variance with those predicted do not occur and to undertake an interpretation of the facts supplied in this report.

It is possible that certain indications of ground stability, contamination, or groundwater levels were latent or otherwise not visible. Opinions are based on what was visible at the time the investigation was conducted.

3. INFORMATION SOURCES

The following information was utilized for the project:

- i. A regional geological map titled "2930 Durban", dated 1988 and prepared by the Council for Geoscience to a scale of 1:250 000.
- ii. Low-resolution satellite imagery sourced from Google Earth (2023).

4. INVESTIGATION ACTIVITIES

The field portion of the investigation was carried out on 16 and 17 March 2023 and comprised the following:

- a. Excavation of test pits.
- b. CBR Dynamic Cone Penetrometer (DCP) testing.

4.1 Test Pitting and Profiling

Twenty-Eight test pits were excavated at selected points within the site boundaries. The test pits have been designated by prefixes TP01 to TP22, AH01 to AH03 and EXP01 to EXP03. The test pits were excavated by hand tools to approximate refusal/final depths in the range 0.35m to 2.5m below existing ground level (begl).

The test pits were profiled in accordance to the South African Geoterminology Guidelines (Brink and Bruin, 2002). The test pit profiles are given in Appendix A at the end of this report.

4.2 DCP Testing

Twenty five DCP tests were carried out adjacent to each test pit. The DCP tests have been designated by prefixes DCP01 to DCP25 extended to approximate refusal/final depths in the range 0.2m to 2.5m begl. The DCP test results are given in Appendix B at the end of this report.

5. DESCRIPTION OF THE STUDY AREA

The site is located in Edendale within the Msunduzi District Municipality. The latitude and longitude of the central portion of the site is 29.644550 South and 30.342977 East. The site comprises existing wastewater ponds that was from the old wastewater treatment works. The ponds are still filled with water. Areas around the site accessible for testing was limited. The site comprises dense grass and trees. The Msunduzi River forms the western and northern boundary, leather factory along the eastern boundary and main road along the southern boundary.

Dense vegetation on site hindered field investigative activities, in addition no testing was possible within the ponds.

The locality of the study area is shown in Figure 1 and site layout in Figure 2 with test pit positions.

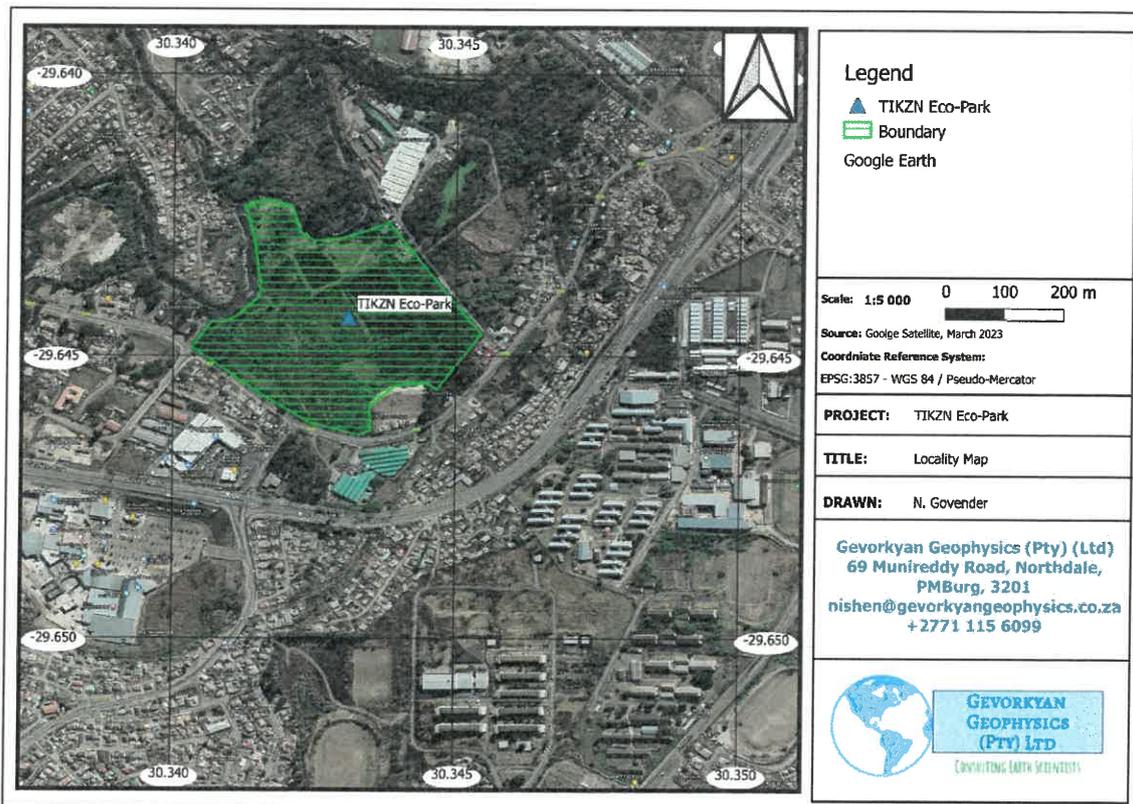


Figure 1: Locality of the site

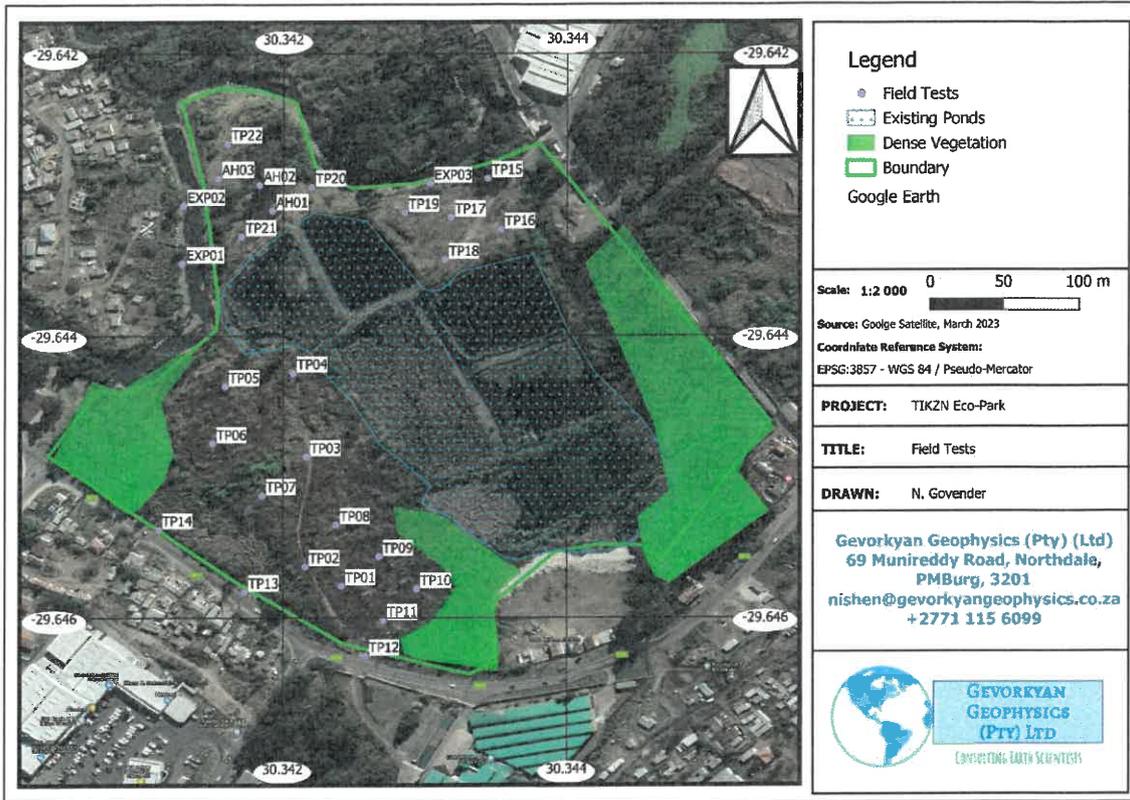


Figure 2: Location of Field Test Positions

Photographs 1 to 3 provide general views of the site.



Photograph 1: General view of the site



Photograph 2: General view of the site



Photograph 3: General view of the ponds

6. GENERAL GEOLOGY OF THE SITE

According to the regional geological map of the area “2930 Durban” (Refer to Figure 3), the area is underlain by shale of the Pietermaritzburg Formation of Ecca Group.

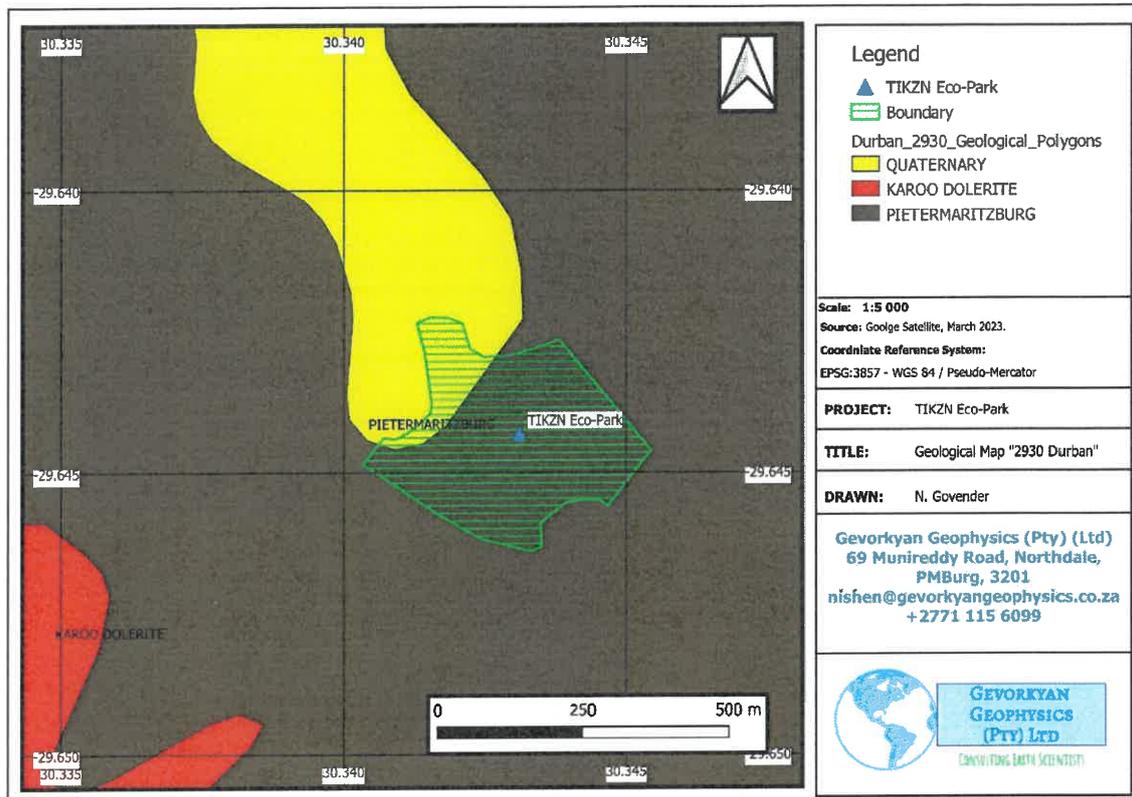


Figure 3: Geological Map of the study area “2930 Durban”

The positions investigated comprised fill, colluvium, alluvium, and residual soils.

The materials, in general, can be described as follows:

- a) **Fill** – Material varies across the site. Material can be described as slightly moist, reddish brown, light brown, light greyish brown, soft to firm / loose to medium dense, sandy SILT to clayey sandy GRAVEL with abundance of rubble and rock fragments. The fill material extended to approximate depths in the range of 0.2m (TP01) to 2.0m (TP11) begl.
- b) **Alluvium** – Material can be described as slightly moist, light to medium brown, loose, silty SAND to clayey sandy SILT with boulders. The alluvial material was encountered from approximate depths in the range 0.4m (AH03) to 1.5m (EXP02) and generally extended to final depths of test pits in the range 2.5m (TP21) to 3.0m (EXP02) begl.
- c) **Colluvium** – Material can be described as slightly moist, dark brown, dark grey, soft to firm, sandy CLAY to silty CLAY, to a loose, clayey SAND with roots and rock fragments. The colluvial material extended to approximate depths in the range of 0.4m (AH03) to 0.8m (TP20) begl.

- d) **Residual Shale** – Material can be described as slightly moist, medium brown to orange brown to light grey, soft to firm, fine grained with coarse fragments, silty CLAY with gravel and shale rock fragments. The residual material extended to approximate final depths of the test pits in the range of 0.6m (TP10) to 2.0m (TP14) begl.

Photographs of subsurface profiles observed in the inspection pits are given in Photographs 4 to 6.



Photograph 4: Material Encountered in TP01



Photograph 5: Material Encountered in TP15



Photograph 6: Material Encountered in TP20

7. GROUNDWATER

Groundwater seepage was encountered in a single test pit on site at a depth of approximately 0.4m begl. This is due to the test pit (TP18) being excavated close to the pond.

Although, no other test pits encountered groundwater, it is considered that groundwater activities in the area are likely to fluctuate during and after periods of rainfall. In addition, the ponds and river on site are also contributing factors to this.

It is advised that a contingency amount be allocated in the construction bill for subsoil drainage.

Photograph 7 and 8 shows the groundwater seepage encountered and the river on site.



Photograph 7: Seepage Encountered in TP18



Photograph 8: Msunduzi River Flowing along the site boundary

8. SOIL LABORATORY RESULTS

The following tests were carried out on insitu soil samples to determine the engineering properties:

- i) Grading Analysis, Atterberg Limits.
- ii) Moisture Content.
- iii) CBR.
- iv) Modified AASHTO.
- v) Hydrometer.
- vi) pH and Conductivity.

The results of the laboratory tests are given in Appendix C and summarized in Table 1.

Table 1: Summary of Results of Grading Analysis, Atterberg Limit Determinations, and material classifications

Sample No.	TP01	TP01	TP04	TP07	TP07
Depth (m).	0,2-0,4	0,4-1,2	0-0,7	0-0,5	0,5-1,0
Description of Sample	Colluvium	Residual Shale	Fill	Fill	Residual Shale
Classification	Jennings				
CLAY	46,47	37,17	26,52	29,58	26,80
SILT	32,33	39,03	39,28	28,62	36,00
SAND	18,40	16,00	22,00	41,80	15,40
GRAVEL	2,80	7,80	12,20	0,00	21,80
LL%	42,10	40,10	25,80	28,00	27,00
P.I.	14,50	11,60	11,40	15,40	14,50
LS%	8,00	6,70	6,00	8,70	7,30
Van Der Merwe Swell	Low	Medium	Medium	Low	Medium
Moisture Content (%)	18,20	15,90	10,20	12,70	12,00
GM	0,35	0,48	0,69	0,53	0,89
COLTO	N/A	Poorer than G10	N/A	N/A	N/A
AASHTO	A-7-6	A-7-6	A-7-6	A-6	A-6
UNIFIED	CL	CL	CL	SC	GC
Degree of Corrosivity					
pH	7,1	6,5	7	8,7	7,5
EC (S/m)	0,0093	0,0105	0,0393	0,0426	0,0127
Resistivity (ohms/cm)	10753	9524	2545	2347	7874
Corrosivity	Mildly Corrosive	Moderately Corrosive	Highly Corrosive	Highly Corrosive	Moderately Corrosive

Sample No.	TP09	TP15	TP19	TP20	TP22
Depth (m).	0,5-0,7	0-0,8	0-0,7	0,7-2,5	0-1,2
Description of Sample	Residual Shale	Fill	Fill	Alluvium	Alluvium
Classification	Jennings				
CLAY	23,90	18,37	24,59	24,78	23,28
SILT	37,51	26,83	25,10	26,02	22,52
SAND	13,00	24,40	21,80	46,00	54,20
GRAVEL	23,80	30,40	27,80	3,20	0,00
LL%	23,90	22,00	21,30	21,80	25,30
P.I.	9,50	7,60	7,30	7,80	11,30
LS%	5,30	3,30	4,00	3,30	7,30
Van Der Merwe Swell	Low	Low	Low	Low	Low
Moisture Content (%)	11,20	14,10	15,30	11,50	11,10
GM	0,89	1,30	1,18	0,66	0,60
COLTO	N/A	N/A	Poorer than G10	N/A	N/A
AASHTO	A-4	A-4	A-4	A-4	A-6
UNIFIED	GM	GC	SC	SC	SC
Degree of Corrosivity					
pH	7,1	7,5	7,4	9,3	7,2
EC (S/m)	0,0192	0,0199	0,0187	0,0631	0,0088
Resistivity (ohms/cm)	5208	5025	5348	1585	11364
Corrosivity	Moderately Corrosive	Moderately Corrosive	Moderately Corrosive	Highly Corrosive	Mildly Corrosive

LL - Liquid Limit OMC - Optimum Moisture Content GM - Grading Modulus

PI - Plasticity Index LS - Linear Shrinkage A-7-6 - AASHTO Classification

CL – Unified Soil Classification

9. DISCUSSION

9.1 Proposed Development

Information provided to Gevorkyan Geophysics indicates that development will be constructed across the site with single storey structures. However, the design details are not known at present, and it is understood that foundation pressures between 50 kPa and 100 kPa are anticipated for the site.

For discussion purposes the site will be divided into two areas, Site A which will comprise TP01 to TP14, and Part B which will comprise TP15 to TP22, and AH01 to AH03.

9.2 Site Stability

No signs of inherent ground instability such as slip scars, tension cracks or major sloughing of the mantle of transported soils were evident during the fieldwork in the areas investigated. In addition, no known landslides were noted to occur on the site at the time of the investigation.

The site has been previously developed and the existing fill layers appear to be “Uncontrolled Fill”, these may result in some instability if no adequate engineering rehabilitation is done.

In general, the site is considered to be stable, and the proposed development does not appear to pose a risk to the current stability. However, it is recommended that good sound engineering practices be carried out for the proposed development.

Areas of shallow groundwater conditions should be avoided as these are likely to increase foundation solution costs. There is a risk for an elevated groundwater condition on site and adequate engineering measures should be implemented to mitigate these hazards. It is strongly advised that subsurface drainage be implemented along weakly drained areas.

To maintain the stability of the site, it is imperative that adequate site drainage measures are implemented.

The soils on site are considered susceptible to erosion/sloughing by uncontrolled stormwater runoff and it is important that adequate erosion prevention controls are implemented at the site.

Although the site in general is classified as stable, documented inspections by a geotechnical professional should be carried out to confirm stability of excavations.

9.3 General Earthworks

Earthwork activities will need to be carried out strictly in accordance with the current SANS 1200 guidelines (Current version) to ensure safe working procedures and maintain stability of the site.

Where possible, the lowering of ground levels is to be avoided to reduce the risk of encountering problematic shallow groundwater seepage anticipated to occur intermittently within 1.0m begl. Where this is not feasible, allowance is to be made for suitable subsoil drainage to engineer's detail.

Placement of fill layers should be undertaken in layers not exceeding 150mm thick. When placed loose and compacted using suitable compaction plant to achieve 93% of Modified AASHTO maximum dry density.

If natural ground slopes are steeper than 9 degrees, the fill must be benched into the slope.

Terraces should be graded to direct water away from the fill edges, and small earth bunds should be constructed along the crests of fills, to prevent overtopping and erosion of fill embankment slopes.

Acceptance and process density control testing of placed fill material should be undertaken at regular intervals during fill construction as part of process and acceptance quality assurance monitoring.

Cut and fill slopes in soils should be formed to batters not exceeding 26° and to a height not greater than 2 metres where retaining walls are not provided.

Engineered fill slopes should be over constructed and thereafter trimmed back to the required position.

Although not encountered in the investigation should rock be encountered on site during construction. Cuts in highly weathered bedrock should not exceed gradients of 50°. Inspection of cuts in weathered bedrock by a competent engineering

geologist or geotechnical engineer may indicate that the angle of cut batter slopes needs to be varied locally to promote stability of the site.

Cut and fill heights greater than the heights and configurations specified above would need to be inspected and approved by an engineering geologist or geotechnical engineer.

Workers should not enter any excavations deeper than 1.5m that are not shored or battered back as described above, as sidewalls in the low strength soils resembling those encountered on site will be prone to collapse. All excavations must be inspected daily by a competent person and records must be kept. It remains the responsibility of the Contractor/Developer to comply with the current requirements of the Occupational Health and Safety Act.

9.4 The Trechability/Excavatability on Site

The excavations have been assessed based on SANS 1200 (Latest version). Based on the results of the field investigation, it is inferred that the subsurface classifies as soft excavation down to the final depths of the field tests (TP and DCP results refers).

In such instances, it is considered that the material may be easily excavated by a tractor loader backhoe (TLB).

However, due to likely geological variations, such as boulders, cobble and rock fragments, it is also possible that intermediate to hard excavations may be encountered at a shallower depth. Therefore, a contingency amount is recommended in the construction budget.

9.5 Classification of Material and Recommended Usage

The subgrade materials underlying the existing site have been classified in terms of their suitability for use in construction based on field observations and laboratory testing.

The materials on site classify in general as poor quality and will require undercutting and replacement of granular material.

The above should be used as a guideline only and should be confirmed by further testing on site during construction as part of process and acceptance control monitoring, prior to the material being considered for use in construction.

Further testing is only advised should the engineers want to utilize the materials on site for construction purposes.

9.6 General Subgrade Layerworks Guidelines

The design of the pavement layer works has not be finalised at time of reports and should be discussed with Gevorkyan Geophysics when available.

The following is a general guideline:

- a) If materials that are considered to be poor in quality are encountered on site, the material will need to be undercut and replaced by suitable granular material meeting the design engineers' requirements.
- b) Soils that meet the design engineers' requirements maybe ripped to the specified depth and recompacted to 93% Modified AASHTO maximum dry density to $\pm 2\%$ Optimum Moisture Content (OMC).
- c) Should the subgrade comprise weathered bedrock, it is recommended that the weathered bedrock be ripped to a minimum depth as prescribed by the engineer and recompacted to at least 93 % Modified AASHTO dry density.
- d) The pavement formation layer should be designed taking into account anticipated traffic loads, volumes and design life of the parking area and roads.

The COTO and SANRAL documents are good guidelines to assist with the design of pavements.

9.7 Founding Characteristics of the Site

The founding conditions encountered on site are inferred to comprise the following:

- a) Soils that are potentially collapsible by nature.
- b) Soils that are susceptible to volumetric changes such as shrinkage and swell.
- c) Loose materials that may experience excessive settlements.
- d) Boulders and cobbles that create uneven working surfaces.
- e) Potential for an elevated groundwater table

9.8 Bearing Capacity and Settlements for Subsurface Materials

The bearing capacity of the soils are based on the material type and DCP results. The following is given based on the available information and field testing at the site (guided by DCP and literature data as shown in Table 2):

- 0 to 2.0m – Soft soils with approximately 20 to 25 kN/m² (Site A).
- 2.0m to 2.5m – firm soils with approximately 50 to 70 kN/m² (Site A).
- 0 to 3.0m – loose soils with shear strength of 29° (Site B).

The following calculations for bearing capacity and settlement relate to **Site A** as this is considered the most suitable and feasible area to develop on.

Table 2: Strength of Soils based on Table 5.10 from Look, B, Handbook of Geotechnical Investigations and Designs

Material	Description	DCP – n (Blows/100 mm)	Strength
Clays	V. Soft	0–1	$C_u = 0–12$ kPa
	Soft	1–2	$C_u = 12–25$ kPa
	Firm	2–3	$C_u = 25–50$ kPa
	Stiff	3–7	$C_u = 50–100$ kPa
	V. Stiff	7–12	$C_u = 100–200$ kPa
	Hard	> 12	$C_u > 200$ kPa
Sands	V. Loose	0–1	$\phi < 30^\circ$
	Loose	1–3	$\phi = 30–35^\circ$
	Med dense	3–8	$\phi = 35–40^\circ$
	Dense	8–15	$\phi = 40–45^\circ$
	V. Dense	> 15	$\phi > 45^\circ$

The unit weight of the residual shale soil based on laboratory data is 17.20 kN/m³. Permeability of the soils based on the laboratory results is 10⁻⁶ cm/sec. The compressibility of soft clay is >0.3 and firm clay is 0.15. Young's elastic modulus is approximately 7 MN/m². These are approximate values based on previous literature comparing the current soil testing results. For exact values, specialized geotechnical tests are required, these are only to guide the calculations of the settlements and bearing capacities.

Tables 3 and 4 below provide a summary of the bearing capacity of the soil and associated settlements. The analysis was done by a specialist programme developed by the Department of Geophysical Engineering at Istanbul University.

The bearing capacity calculations were done assuming foundations are placed at a depth of 2.0m begl, a width of 2m and length of 2m. Based on the standard engineering practice a factor of safety (FOS) of 3 is best suited for all engineering designs and the bearing capacity of the soil at a depth of 2.0m should be restricted to between 60 and 70 kPa (60 and 70 kN/m²) as shown in Table 3.

Based on settlement calculations for each of the foundation pressures using various methods as shown and summarised in Table 4, average settlements are in the range of 5 to 10mm for 35 kPa, 10 to 15mm for 50 kPa and 15 to 20mm for 75 kPa.

Based on van der Merwe swell calculations, a potential heave in range 15mm to 20mm can be expected for a clayey residual shale soil of 2m in thickness.

Table 3: Bearing Capacity of the soil

Bearing Capacity of Soils (Terzaghi, 1943)	Factor of Safety		
	1	2	3
Foundation Type			
Strip Foundation	203	101	68
Rectangular Foundation	206	103	69
Circular Foundation	213	106	71
Square Foundation	210	105	70
Bearing Capacity of Soils (Meyerhof, 1963)			
Bearing Capacity	205	103	68
Bearing capacity in kPa			

Table 4: Settlements of clayey Soils

Assuming width Footing is 2m	Applied Pressure (kPa)		
	35	50	75
Method	Settlement (mm)		
Burland and Burbrigde (1985) (Flexible)	2	4	11
Burland and Burbrigde (1985) (Rigit)	2	3	8
Meyerhof (1965)	7	10	15
Terzaghi and Peck	9	12	18
Average	5	7,25	13

9.9 NHBC Site Class Designations

The following Table extracted from the Home Building Manual (HBM) of the National Home Builders Registration Council (NHBC) is used to guide the engineer with the soil properties and expected differential movements beneath the site.

According to guidelines provided in Part 1, Section 2, Table 1 of the HBM of the NHBC, the following site classes are given for the site:

- **H2 (residual shale)** – clayey residual shale soils.
- **C2 (alluvial soils)** – sandy soils.
- **P (Fill)** – Areas underlain by fill soils.

Site A classifies as H2-P

Site B classifies as C2-P

Accordingly, the parameters as set down by the NHBC are given in Table 5.

Table 5: Residential Site Class Designations (NHBRC HBM, Part 1, Section 2, Table 1)

TYPICAL FOUNDING MATERIAL	CHARACTER OF FOUNDING MATERIAL	EXPECTED RANGE OF TOTAL SOIL MOVEMENTS (mm)	ASSUMED DIFFERENTIAL MOVEMENT (% OF TOTAL)	SITE CLASS
Rock (excluding mud rocks which may exhibit swelling to some depth)	STABLE	NEGLIGIBLE	-	R
Fine grained soils with moderate to very high plasticity (clays, silty clays, clayey silts and sandy clays)	EXPANSIVE SOILS	<7,5 7,5-15 15 - 30 >30	50% 50% 50% 50%	H H1 H2 H3
Silty sands, sands, sandy and gravelly soils	COMPRESSIBLE AND POTENTIALLY COLLAPSIBLE SOILS	<5 5-10 >10	75% 75% 75%	C C1 C2
Fine grained soils (clayey silts and clayey sands of low plasticity), sands, sandy and gravelly soils	COMPRESSIBLE SOILS	<10 10-20 >20	50% 50% 50%	S S1 S2
Contaminated soils, Controlled fill, Dolomitic areas, Landslip, Landfill, Marshy areas Mine waste fill, mining subsidence Reclaimed areas, Uncontrolled fill, Very soft silts/silty clays	VARIABLE	VARIABLE		P

9.10 Foundation Solution

Based on the results of the geotechnical investigation, the most suitable site is Site A. The client has not specified bearing capacities for the foundations, and based on field test results and Table 5, the maximum insitu bearing capacity at a depth of 2.0m is 68 kPa which assumes a factor of safety of 3.

There are various foundation solutions for the site as indicated below:

- I. Foundations on residual material.
- II. Foundations on improved ground.
- III. Piled foundations.

It must be emphasised that no foundations are to be placed on the fill/colluvial/alluvial layer as these may be subjected to excessive expansion / settlements. In addition, the shear strength of the soils is considered to be low.

i) Foundations on Residual Material

It is recommended that all foundations will need to be taken down through the soft soils and placed on at least firm residual soils at a depth of 2.0m where a maximum nett allowable bearing pressure of up to 68 kN/m² is considered applicable. Total settlement is likely to be 10mm to 15mm with differential settlement taken as 50% of total settlement. Potential heave of the soils is estimated up to 20mm per 2m of clay layer.

ii) Foundations on Improved Ground

For bearing pressures greater than 68 kN/m^2 it is strongly recommended that ground improvement be carried out at the site. This will need to be designed accordingly based on the ground conditions. Ground improvement can accommodate for bearing pressures between 100 to 150 kPa but need to be adequately designed.

The following methodology could be adopted as to guide budgeting, engineering design and construction:

- a) Grub the site to remove soils with organic content.
- b) Remove the insitu material to a depth and width of 1.5 times the width of foundation from the underside of the proposed foundation.
- c) Backfill the excavation with suitable material of at least G6 quality.
- d) The material is to be compacted in a maximum of 150mm layers to 95% Mod AASHTO density at -1% to +1% of OMC.
- e) Foundations should not be embedded deeper than 1.0m below final platform level ensuring that there is at least 1.0m of engineered structural gravel as specified above beneath the footing foundation.
- f) Provided the above is carried out, a maximum net allowable bearing pressure of 150 kN/m^2 is considered applicable for spread or strip footing foundations.

For net permissible foundation pressures not greater than 150 kN/m^2 , spread foundations placed on improved ground developed as specified above is likely to experience total theoretical settlements between 10mm to 15mm, with differential settlement taken at 50% of total settlement.

The above ground improvement is only a guide and it is strongly recommended that a detailed design be carried out by a design-engineer and constructed to engineers detail.

iii) Foundations on weathered rock via Piles

Weathered rock is likely to occur at a depth greater than 3.0m below and it may not be feasible to opt for deep pad footings. Should the engineers opt for footings on weathered rock, then a piled solution will be required for the site.

Due to the nature of the site and the variable clay layers, weathered rock is likely to be encountered at a depth greater than 3m.

In order to determine piling depths, a supplementary geotechnical investigation comprising boreholes will need to be carried out.

iv) General Comments

The materials on site are also corrosive towards steel and concrete and this should be considered in the engineering designs.

It is a requirement that prior to casting any concrete in the foundation trenches, all loose material needs to be removed.

It is a requirement that all foundations are inspected and approved by a geotechnical specialist such as Gevorkyan Geophysics Pty Ltd.

All foundations will need to be designed strictly to engineers' detail and adequately reinforced taking into consideration the founding conditions of the site.

9.11 Drainage and Stormwater Guidelines

To maintain stability of the site, it is important to control the movement of both surface and groundwater.

Adequate drainage measures need to be implemented to prevent any ponding occurring within the site during and post construction.

The need for subsoil drainage will have to be assessed on site during construction in consultation with the geotechnical professional.

All stormwater arising from the roof and paved areas are to be piped to either discharge off-site into a municipal stormwater connection facility, if available. If this is not available, the feasibility of piping all stormwater from the completed development into an on-site stormwater subsoil percolation disposal system to engineer's detail is to be confirmed in consultation with the geotechnical professional as part of a supplementary geotechnical investigation.

As good practice, to limit maintenance and to promote foundation stability, the finished ground surfaces should be graded away from the structures to facilitate drainage of surface water runoff rapidly and effectively away from the building perimeter.

The practice of flower beds adjacent to the building perimeter layout is likewise to be discouraged.

10. SUPPLEMENTARY GEOTECHNICAL INVESTIGATION

Details of proposed structures was not available at time of investigations. Once engineering designs are done, it is advised that the client clear the site of all vegetation at Site A and a supplementary geotechnical investigation using a 20 Ton Excavator be carried out. This will allow testing down to at least 5.0m begl and refine the areas that are suitable for structures. As mentioned earlier, uncontrolled fill across the site will require rehabilitation before developments may proceed. This may also help identify rock levels in the area especially if it is within 5m from surface.

This may also allow the engineering designs to be refined and reduce costs.

If piling is required and excavator test pits do not identify rock, then borehole drilling will be required to determine suitable founding depths.

The above is advised should heavy loaded structures be proposed for the site and the design engineer should consult with the geotechnical specialist on the specifications if they would like to proceed with the above.

11. CONCLUDING REMARKS

This report was prepared to assist with understanding the subsurface information for the site in terms of geotechnical properties.

The site is underlain by fill, colluvial, alluvial and residual soils. The material is variable on site.

Groundwater seepage was only encountered in a single inspection pit on site. There is also a risk for an elevated groundwater condition at the site particularly during and after periods of rainfall.

The most suitable site for development is "Site A".

All construction activities will need to be carried out strictly in accordance with SANS 1200 (current version).

The foundation designs are given in sections 9.7 to 9.10.

The ground conditions given in this report refer specifically to the field tests carried out on site. It is therefore quite possible that conditions at variance with those given in this report may be encountered elsewhere on site during construction.

The site is considered as stable for the development from a geotechnical perspective.

It is therefore recommended that a geotechnical practitioner be appointed to carry out periodic inspections during construction.

12. REFERENCES

- i. Brink, A. B. & Bruin, R. M., 2002. Guidelines for Soil and Rock Logging in South Africa. s.l., Association of Engineering Geologists, South African Institute Civil Engineering - Geotechnical Division, and South Africa Institute for Engineering and Environmental Geologists, p. 47.
- ii. Committee of State Road Authorities, 1985. TRH14: Technical Recommendations for Highways - Guidelines for Road Construction Materials. Pretoria: Department of Transport.
- iii. G.Byrne & A.D.Berry, 2008. A Guide to Practical Geotechnical Engineering in South Africa. s.l.: Franki.
- iv. Google Earth, 2023. AfriGIS (Pty) Ltd. [Online] Available at: www.googleearth.com
- i. Look, B. (2007). Handbook of Geotechnical Investigation and Design Tables. (Referenced as Meyer, 1965 in text)
- v. South African Bureau of Standards, 1990. SANS 1200 DA - Standardised Specification for Civil Engineering Construction - Earthworks (Small Works). s.l.: South African Bureau of Standards.
- vi. South African Department of Labour, 1991. Occupational Health and Safety Amendment Act, No. 181 of 1993. s.l.: Department of Labour - South Africa



APPENDIX A: TEST PIT PROFILES



TRIAL PIT TP01

PROJECT NUMBER GG011-23

PROJECT NAME TIKZN

CLIENT Ukuza Consulting

ADDRESS 15 The Boulevard, Westway Office Park

FIELDWORK DATE March 2023

PLANT N/A

WEATHER Sunny

GROUNDWATER SEEPAGE N/A

TOTAL DEPTH 1.8

LATITUDE (S) 29.64577

LONGITUDE (E) 30.34241

SURFACE ELEVATION 672

LOGGED BY N Govender Pr. Sci. Nat.

CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, reddish brown, soft, fine grained with gravel, sandy CLAY - FILL.	None
				Slightly moist, dark brown, soft, fine grained with gravel, sandy CLAY with roots - COLLUVIUM.	
0.5				Slightly moist to moist, medium brown speckled orange, soft to firm, silty CLAY - RESIDUAL SHALE.	
1				Slightly moist to moist, orange brown to light grey, firm, silty CLAY with gravel - RESIDUAL SHALE.	
1.5					
2				Termination Depth at: Refusal at 1.8m.	
2.5					



TRIAL PIT TP02

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64563
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34216
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 671
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 1.55	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, light brown, loose to medium dense, fine to coarse grained, clayey sandy GRAVEL - FILL.	None
0.5				Slightly moist to moist, medium brown speckled orange, soft to firm, silty CLAY with shale fragments - RESIDUAL SHALE	
1				Slightly moist, light grey stained and speckled orange, firm to stiff, silty CLAY with shale fragments - RESIDUAL SHALE.	
1.5				Termination Depth at: Refusal at 1.55m.	
2					
2.5					



TRIAL PIT TP04

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64426
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34208
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 2.0	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, orange brown, medium dense to dense, fine to coarse grained with gravel and rock fragments, clayey GRAVEL - FILL.	None
1				Slightly moist to moist, orange brown to light grey, firm, silty CLAY with gravel - RESIDUAL SHALE.	
2				Termination Depth at: Refusal at 2.0m.	
2.5					



TRIAL PIT TP05

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64434
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34159
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 662
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 1.4	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, light greyish brown, medium dense to dense, fine to coarse grained, clayey GRAVEL - FILL.	None
				Slightly moist, orange brown, medium dense to dense, fine to coarse grained with gravel and rock fragments, clayey GRAVEL - FILL.	
				Slightly moist, light grey stained and speckled orange, firm to stiff, silty CLAY with shale fragments - RESIDUAL SHALE.	
1					
1.5				Termination Depth at: Refusal at 1.4m.	
2					
2.5					



TRIAL PIT TP06

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64477
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34152
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 667
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.95	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, orange brown, medium dense to dense, fine to coarse grained with gravel and rock fragments, clayey GRAVEL - FILL.	None
				Slightly moist, light grey to dark grey, firm to stiff, silty CLAY with GRAVEL (Ferruginised) - RESIDUAL SHALE.	
1				Termination Depth at: Refusal at 0.95m.	
1.5					
2					
2.5					



TRIAL PIT TP07

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64511
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34186
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 672
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 1.0	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

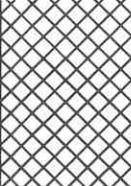
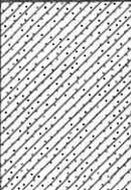
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, light brown, loose to medium dense, fine to coarse grained, clayey sandy GRAVEL - FILL.	None
1				Slightly moist. light grey stained and speckled orange, firm to stiff, silty CLAY with shale fragments - RESIDUAL SHALE.	
1.5				Termination Depth at: Refusal at 1.0m.	
2					
2.5					



TRIAL PIT TP08

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64533
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34237
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 666
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 1.0	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

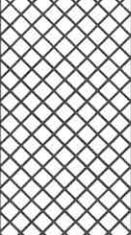
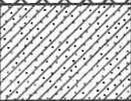
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, light greyish brown, medium dense to dense, fine to coarse grained, clayey GRAVEL - FILL.	None
				Slightly moist, orange brown, medium dense to dense, fine to coarse grained with gravel and rock fragments, clayey GRAVEL - FILL.	
				Slightly moist to moist, orange brown to light grey, firm, silty CLAY with gravel - RESIDUAL SHALE.	
1				Termination Depth at: Refusal at 1.0m.	
1.5					
2					
2.5					



TRIAL PIT TP09

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64557
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34268
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 667
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.7	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

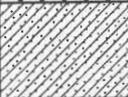
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, orange brown, medium dense to dense, fine to coarse grained with gravel and rock fragments, clayey GRAVEL - FILL.	None
				Slightly moist, light grey, firm to stiff, silty CLAY with gravel - RESIDUAL SHALE.	
1				Termination Depth at: Refusal at 0.7m. Lots of boulders in pit.	
1.5					
2					
2.5					



TRIAL PIT TP10

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64579
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34294
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 661
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.6	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, orange brown, medium dense to dense, fine to coarse grained with gravel and rock fragments, clayey GRAVEL - FILL.	None
				Slightly moist to moist, orange brown to light grey, firm, silty CLAY with gravel - RESIDUAL SHALE.	
1				Termination Depth at: Refusal at 0.6m. Possibly very weathered shale rock refusal.	
1.5					
2					
2.5					



TRIAL PIT TP11

PROJECT NUMBER GG011-23

PROJECT NAME TIKZN

CLIENT Ukuza Consulting

ADDRESS 15 The Boulevard, Westway Office
Park

FIELDWORK DATE March 2023

PLANT N/A

WEATHER Sunny

GROUNDWATER SEEPAGE N/A

TOTAL DEPTH 2.0

LATITUDE (S) 29.64601

LONGITUDE (E) 30.34271

SURFACE ELEVATION 667

LOGGED BY N Govender Pr. Sci. Nat.

CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, light greyish brown, medium dense to dense, fine to coarse grained, clayey GRAVEL - FILL.	None
1				Slightly moist, orange brown, medium dense to dense, fine to coarse grained with gravel and rock fragments, clayey GRAVEL - FILL.	
1.5					
2				Termination Depth at: Final at 2.0m.	
2.5					



TRIAL PIT TP12

PROJECT NUMBER GG011-23

PROJECT NAME TIKZN

CLIENT Ukuza Consulting

ADDRESS 15 The Boulevard, Westway Office
Park

FIELDWORK DATE March 2023

PLANT N/A

WEATHER Sunny

GROUNDWATER SEEPAGE N/A

TOTAL DEPTH 2.0

LATITUDE (S) 29.64629

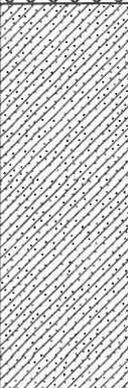
LONGITUDE (E) 30.34256

SURFACE ELEVATION 668

LOGGED BY N Govender Pr. Sci. Nat.

CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

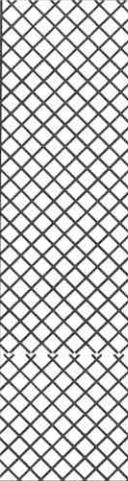
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, light orange to grey, soft to firm, sandy CLAY with boulders and rubble - FILL.	None
1				Slightly moist. dark grey, medium dense, clayey GRAVEL with boulders - FILL.	
1.5				Slightly moist. light grey stained and speckled orange, firm to stiff, silty CLAY - RESIDUAL SHALE.	
2				Termination Depth at: Refusal at 2.0m.	
2.5					



TRIAL PIT TP13

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64585
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34170
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 663
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 1.75	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist. dark grey, medium dense, clayey GRAVEL with boulders - FILL.	None
1				Slightly moist. light grey stained and speckled orange, firm to stiff, silty CLAY with shale fragments RESIDUAL SHALE.	
1.5					
2				Termination Depth at: Refusal at 1.75m.	
2.5					



TRIAL PIT TP14

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64538
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34111
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 665
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 2.0	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

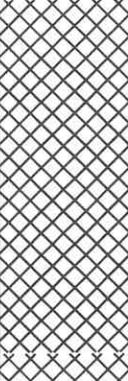
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist. dark grey, medium dense, clayey GRAVEL with boulders - FILL.	None
				Slightly moist, dark grey, firm, silty CLAY with rock fragments - TOPSOIL.	
1				Slightly moist. light grey stained and speckled orange, firm to stiff, silty CLAY with shale fragments RESIDUAL SHALE.	
2				Termination Depth at: Refusal at 2.0m.	
2.5					



TRIAL PIT TP15

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64289
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34344
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 667
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.8	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

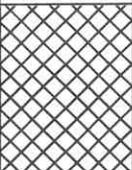
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, reddish brown, soft, fine grained with gravel, sandy CLAY - FILL.	None
1				Termination Depth at: Refusal at 0.8m.	
1.5					
2					
2.5					



TRIAL PIT TP16

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64323
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34353
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 668
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.35	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, reddish brown, soft, fine grained with gravel, sandy CLAY - FILL.	None
0.5				Termination Depth at: Refusal at 0.35m.	
1					
1.5					
2					
2.5					



TRIAL PIT TP17

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64315
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34318
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 663
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.85	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS Petroleum smell from 0.6m begl.

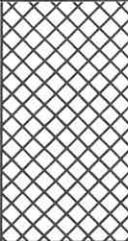
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Moist, orange brown, soft, clayey SILT with roots and rubble - FILL.	None
				Moist, dark grey to black, soft, fine grained with grass and wood chips, clayey SILT - FILL.	
				Moist, black to light grey speckled orange, loose, fine grained with rock fragments clayey SAND - FILL.	
1				Termination Depth at: Refusal at 0.85m.	
1.5					
2					
2.5					



TRIAL PIT TP18

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64345
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34314
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.5	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

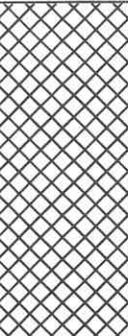
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5	0.4			Slightly moist, medium brown, loose, clayey GRAVEL with rock fragments - FILL.	None
1				Termination Depth at: Refusal at 0.5m.	
1.5					
2					
2.5					



TRIAL PIT TP19

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64345
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34314
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 0.7	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, light brown to grey, loose to medium dense, sandy GRAVEL with large rock fragments - FILL.	None
1				Termination Depth at: Refusal at 0.7m.	
1.5					
2					
2.5					



TRIAL PIT TP20

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64294
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34220
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 665
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 2.5	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, orange brown, loose, fine to coarse grained, clayey gravelly SAND - FILL.	None
0.5				Slightly moist, orange brown to grey, loose, fine to coarse grained, clayey gravelly SAND - COLLUVIUM.	
1				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT - ALLUVIUM.	
1.5					
2					
2.5				Termination Depth at: Final at 2.5m.	



TRIAL PIT TP21

PROJECT NUMBER GG011-23

PROJECT NAME TIKZN

CLIENT Ukuza Consulting

ADDRESS 15 The Boulevard, Westway Office Park

FIELDWORK DATE March 2023

PLANT N/A

WEATHER Sunny

GROUNDWATER SEEPAGE N/A

TOTAL DEPTH 2.5

LATITUDE (S) 29.64329

LONGITUDE (E) 30.34169

SURFACE ELEVATION 666

LOGGED BY N Govender Pr. Sci. Nat.

CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, orange brown, loose, fine to coarse grained, clayey gravelly SAND - FILL.	None
0.5				Slightly moist, orange brown to grey, loose, fine to coarse grained, clayey gravelly SAND - COLLUVIUM.	
1				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT - ALLUVIUM.	
1.5					
2					
2.5				Termination Depth at: Final at 2.5m.	



TRIAL PIT TP22

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64263
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34161
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 1.2	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

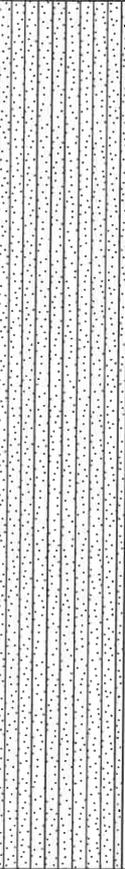
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, light to medium brown, loose, silty SAND with boulders - ALLUVIUM.	None
1					
1.5				Termination Depth at: Refusal at 1.2m.	
2					
2.5					



TRIAL PIT AH01

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64311
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34192
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 666
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 2.5	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, orange brown, loose, fine to coarse grained, clayey gravelly SAND - FILL.	None
0.5				Slightly moist, orange brown to grey, loose, fine to coarse grained, clayey gravelly SAND - COLLUVIUM.	
1				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT - ALLUVIUM.	
1.5					
2					
2.5				Termination Depth at: Final at 2.5m.	



TRIAL PIT AH02

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64293
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34183
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 2.5	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, orange brown, loose, fine to coarse grained, clayey gravelly SAND - FILL.	None
0.5				Slightly moist, orange brown to grey, loose, fine to coarse grained, clayey gravelly SAND - COLLUVIUM.	
1				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT - ALLUVIUM.	
1.5					
2					
2.5				Termination Depth at: Final at 2.5m.	



TRIAL PIT AH03

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64293
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34183
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 1.5	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS

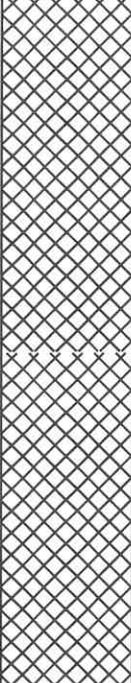
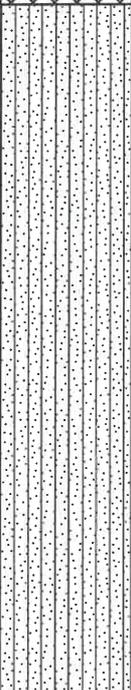
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
				Slightly moist, orange brown to grey, loose, fine to coarse grained, clayey gravelly SAND - COLLUVIUM.	None
0.5				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT with rock fragments - ALLUVIUM.	
1					
1.5				Termination Depth at: Final at 1.5m.	
2					
2.5					



TRIAL PIT EXP01

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64348
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34128
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 663
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 3.0	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS River bank

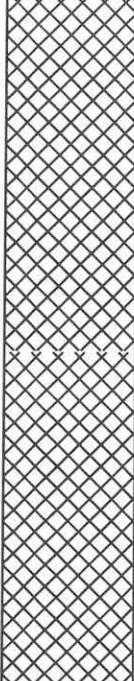
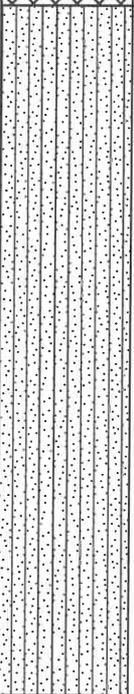
Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, orange brown, loose, fine to coarse grained, clayey gravelly SAND - FILL.	None
1					
1.5				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT - ALLUVIUM.	
2					
2.5					
3				Termination Depth at: Final at 3.0m.	



TRIAL PIT EXP02

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64307
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34129
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 3.0	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS River bank

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, orange brown, loose, fine to coarse grained, clayey gravelly SAND - FILL.	None
1				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT - ALLUVIUM.	
1.5					
2					
2.5					
3				Termination Depth at: Final at 3.0m.	



TRIAL PIT EXP03

PROJECT NUMBER GG011-23	FIELDWORK DATE March 2023	LATITUDE (S) 29.64292
PROJECT NAME TIKZN	PLANT N/A	LONGITUDE (E) 30.34304
CLIENT Ukuza Consulting	WEATHER Sunny	SURFACE ELEVATION 664
ADDRESS 15 The Boulevard, Westway Office Park	GROUNDWATER SEEPAGE N/A	LOGGED BY N Govender Pr. Sci. Nat.
	TOTAL DEPTH 3.0	CHECKED BY N. Govender Pr. Sci. Nat.

COMMENTS River bank

Depth (m)	Groundwater Seepage (m)	Samples	Graphic Log	Material Description	Comments
0.5				Slightly moist, orange brown, loose, fine to coarse grained, clayey gravelly SAND - FILL.	None
1				Slightly moist, medium brown to grey, loose/soft, clayey sandy SILT - ALLUVIUM.	
1.5					
2					
2.5					
3				Termination Depth at: Final at 3.0m.	



APPENDIX B: DCP Test Results



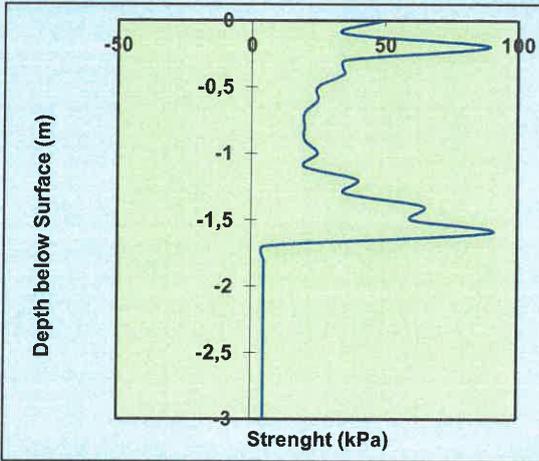
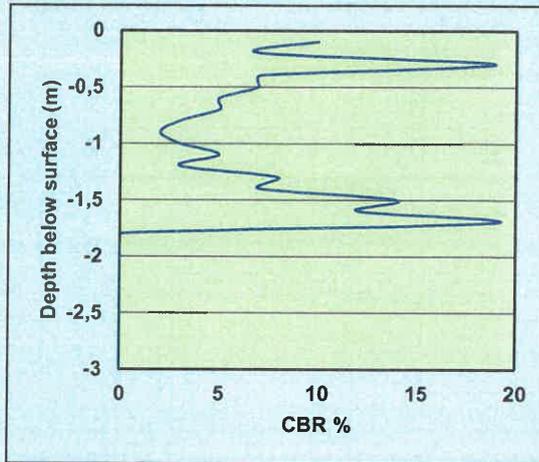
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIK2N Eco-Park
16-Mar-23
DC 1
1,7 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	6	Firm	50 kPa
0,2	4	Soft	35 kPa
0,3	11	Stiff	90 kPa
0,4	4	Soft	35 kPa
0,5	4	Soft	35 kPa
0,6	3	Soft	25 kPa
0,7	3	Soft	25 kPa
0,8	2	Soft	20 kPa
0,9	1	Very Soft	20 kPa
1	2	Soft	20 kPa
1,1	3	Soft	25 kPa
1,2	2	Soft	20 kPa
1,3	5	Firm	40 kPa
1,4	4	Soft	35 kPa
1,5	8	Firm	65 kPa
1,6	7	Firm	60 kPa
1,7	11	Stiff	90 kPa
Ref			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



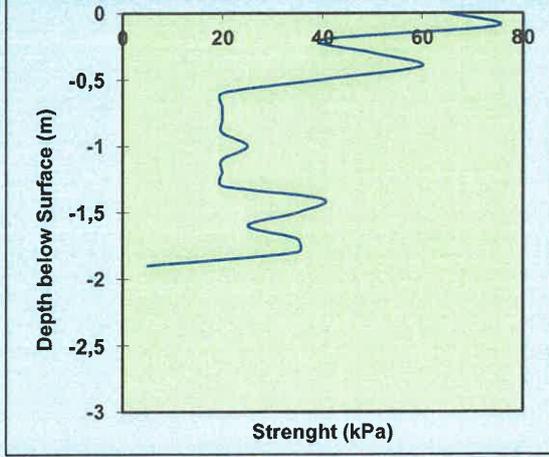
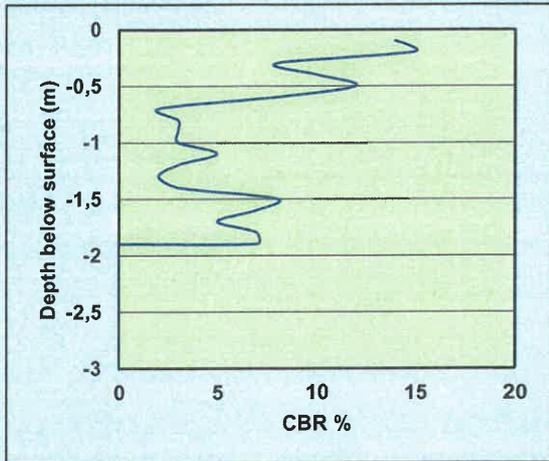
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 2
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	8	Med.Dense	35 deg
0,2	9	Med.Dense	35 deg
0,3	5	Med.Dense	32 deg
0,4	6	Med.Dense	33 deg
0,5	7	Firm	60 kPa
0,6	5	Firm	40 kPa
0,7	1	Very Soft	20 kPa
0,8	2	Soft	20 kPa
0,9	2	Soft	20 kPa
1	2	Soft	20 kPa
1,1	3	Soft	25 kPa
1,2	2	Soft	20 kPa
1,3	1	Very Soft	20 kPa
1,4	2	Soft	20 kPa
1,5	5	Firm	40 kPa
1,6	4	Soft	35 kPa
1,7	3	Soft	25 kPa
1,8	4	Soft	35 kPa
1,9	4	Soft	35 kPa
2	End		
2,1			
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



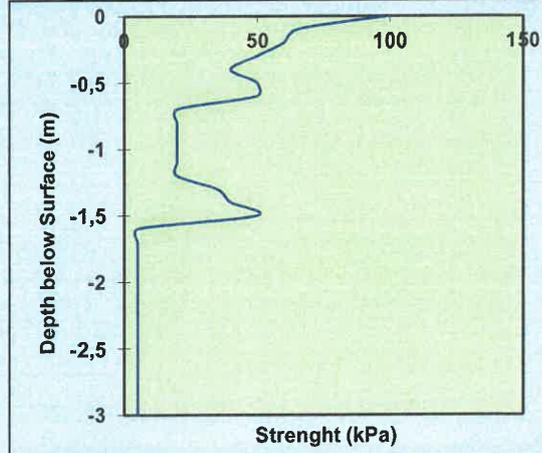
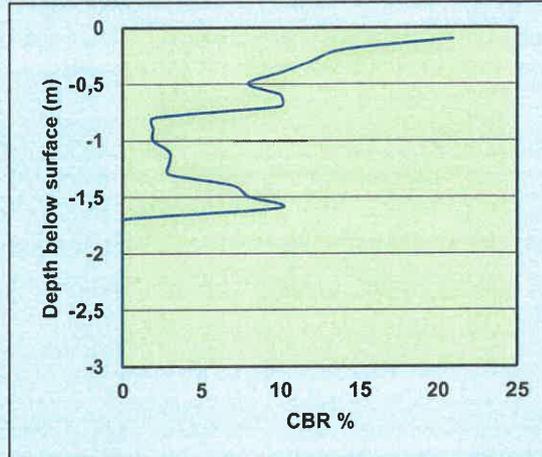
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 3
1,6 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	12	Dense	36 deg
0,2	8	Med.Dense	35 deg
0,3	7	Med.Dense	34 deg
0,4	6	Med.Dense	33 deg
0,5	5	Firm	40 kPa
0,6	6	Firm	50 kPa
0,7	6	Firm	50 kPa
0,8	1	Very Soft	20 kPa
0,9	1	Very Soft	20 kPa
1	1	Very Soft	20 kPa
1,1	2	Soft	20 kPa
1,2	2	Soft	20 kPa
1,3	2	Soft	20 kPa
1,4	4	Soft	35 kPa
1,5	5	Firm	40 kPa
1,6	6	Firm	50 kPa
Ref			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



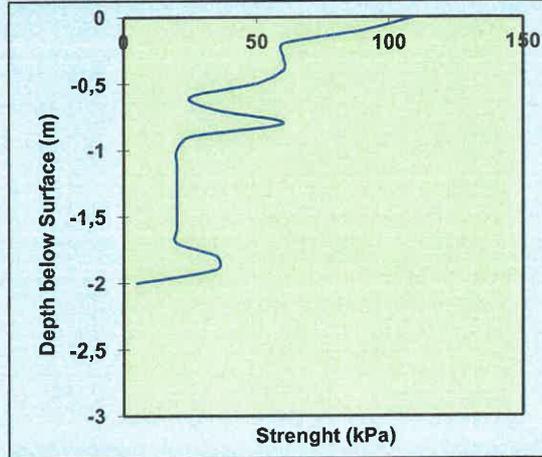
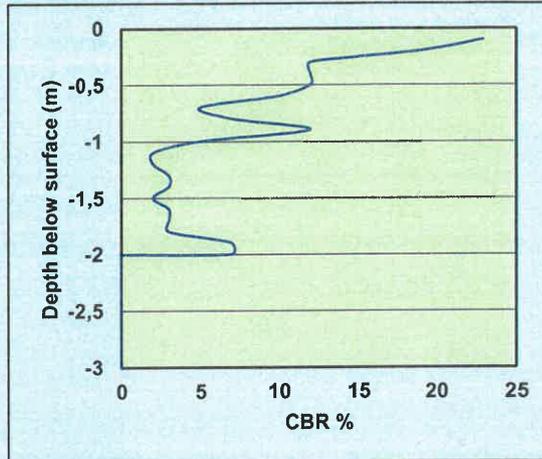
**GEVORKYAN
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CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 4
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	13	Dense	37 deg
0,2	11	Dense	36 deg
0,3	7	Med.Dense	34 deg
0,4	7	Med.Dense	34 deg
0,5	7	Med.Dense	34 deg
0,6	6	Med.Dense	33 deg
0,7	3	Loose	30 deg
0,8	4	Soft	35 kPa
0,9	7	Firm	60 kPa
1	3	Soft	25 kPa
1,1	1	Very Soft	20 kPa
1,2	1	Very Soft	20 kPa
1,3	2	Soft	20 kPa
1,4	2	Soft	20 kPa
1,5	1	Very Soft	20 kPa
1,6	2	Soft	20 kPa
1,7	2	Soft	20 kPa
1,8	2	Soft	20 kPa
1,9	4	Soft	35 kPa
2	4	Soft	35 kPa
2,1	End		
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



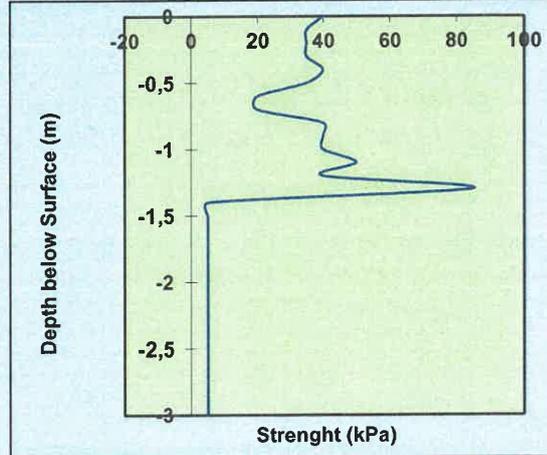
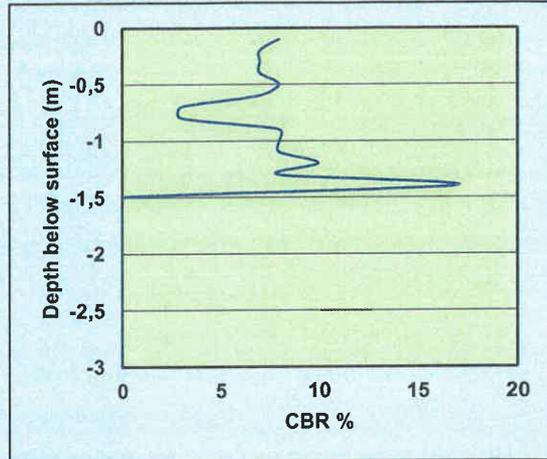
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Reference:
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Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 5
1,4 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	5	Med.Dense	32 deg
0,2	4	Med.Dense	30 deg
0,3	4	Med.Dense	30 deg
0,4	4	Med.Dense	30 deg
0,5	5	Med.Dense	32 deg
0,6	4	Med.Dense	30 deg
0,7	2	Loose	30 deg
0,8	2	Soft	20 kPa
0,9	5	Firm	40 kPa
1	5	Firm	40 kPa
1,1	5	Firm	40 kPa
1,2	6	Firm	50 kPa
1,3	5	Firm	40 kPa
1,4	10	Stiff	85 kPa
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



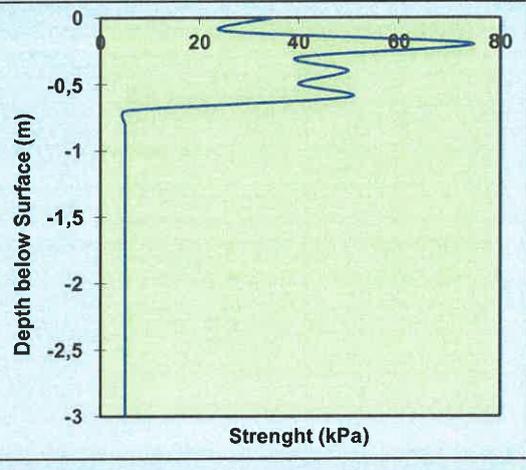
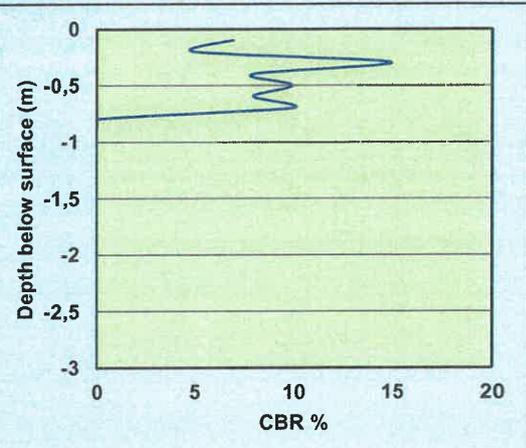
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GG011-23
TIKZN Eco-Park
16-Mar-23
DC 6
0,7 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	4	Med.Dense	30 deg
0,2	3	Loose	30 deg
0,3	9	Med.Dense	35 deg
0,4	5	Med.Dense	32 deg
0,5	6	Med.Dense	33 deg
0,6	5	Med.Dense	32 deg
0,7	6	Med.Dense	33 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



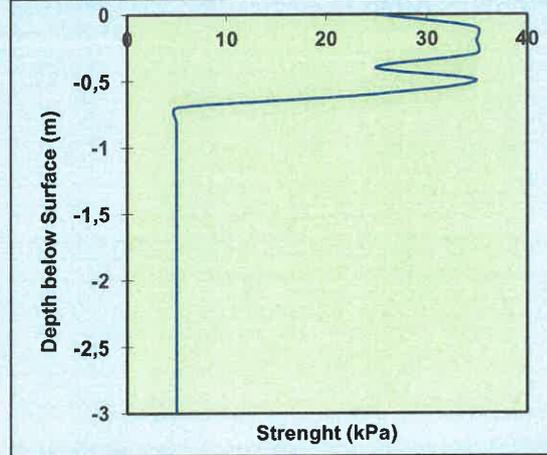
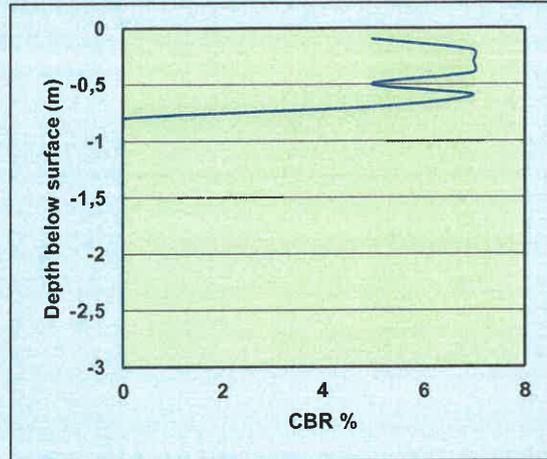
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GG011-23
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16-Mar-23
DC 7
0,7 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	3	Loose	30 deg
0,2	4	Med.Dense	30 deg
0,3	4	Med.Dense	30 deg
0,4	4	Med.Dense	30 deg
0,5	3	Loose	30 deg
0,6	4	Med.Dense	30 deg
0,7	3	Loose	30 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



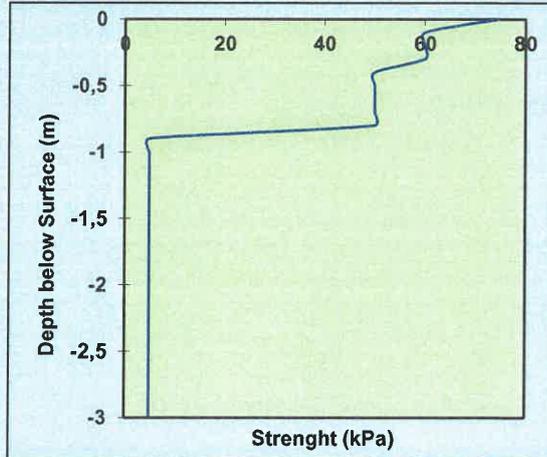
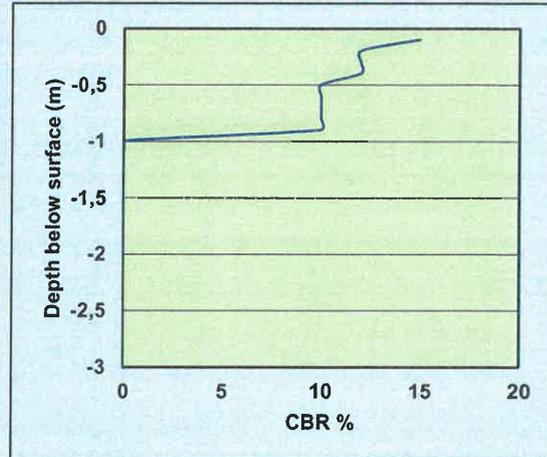
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Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 8
1 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	9	Med.Dense	35 deg
0,2	7	Med.Dense	34 deg
0,3	7	Med.Dense	34 deg
0,4	7	Med.Dense	34 deg
0,5	6	Med.Dense	33 deg
0,6	6	Med.Dense	33 deg
0,7	6	Firm	50 kPa
0,8	6	Firm	50 kPa
0,9	6	Firm	50 kPa
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



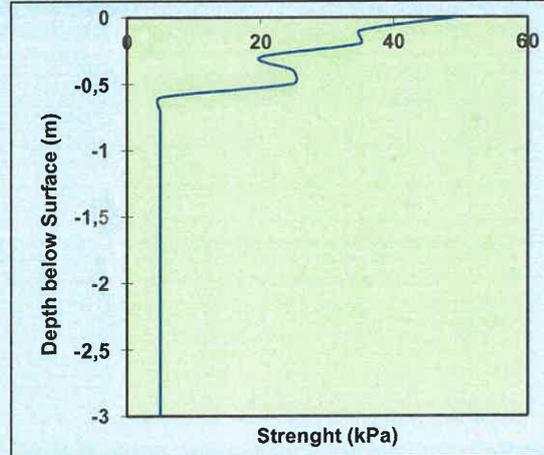
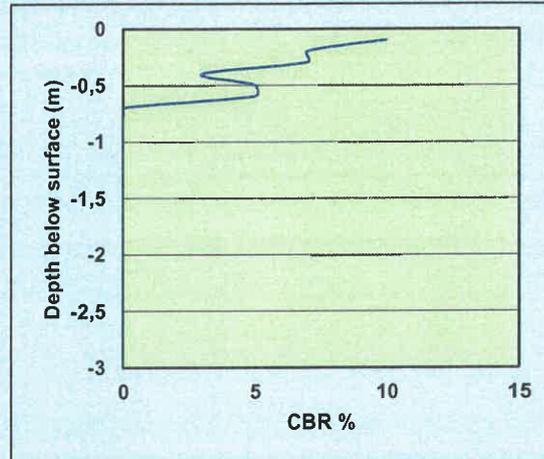
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Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 9
0,6 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	6	Med.Dense	33 deg
0,2	4	Med.Dense	30 deg
0,3	4	Med.Dense	30 deg
0,4	2	Loose	30 deg
0,5	3	Loose	30 deg
0,6	3	Loose	30 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



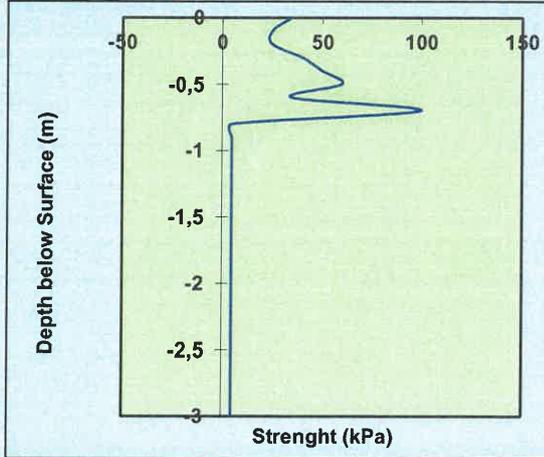
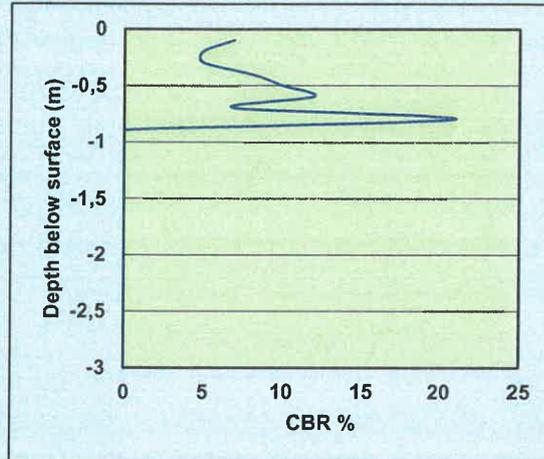
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Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 10
0,8 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	4	Med.Dense	30 deg
0,2	3	Loose	30 deg
0,3	3	Loose	30 deg
0,4	5	Med.Dense	32 deg
0,5	6	Firm	50 kPa
0,6	7	Firm	60 kPa
0,7	4	Soft	35 kPa
0,8	12	Stiff	100 kPa
Ref			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



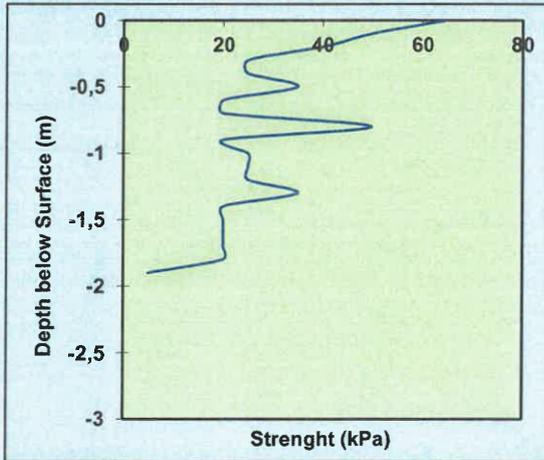
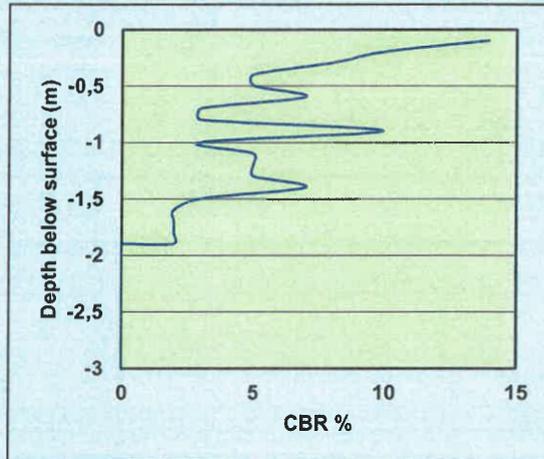
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GG011-23
TIKZN Eco-Park
16-Mar-23
DC 11
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	8	Med.Dense	35 deg
0,2	6	Med.Dense	33 deg
0,3	5	Med.Dense	32 deg
0,4	3	Loose	30 deg
0,5	3	Loose	30 deg
0,6	4	Med.Dense	30 deg
0,7	2	Loose	30 deg
0,8	2	Loose	30 deg
0,9	6	Med.Dense	33 deg
1	2	Loose	30 deg
1,1	3	Loose	30 deg
1,2	3	Loose	30 deg
1,3	3	Loose	30 deg
1,4	4	Med.Dense	30 deg
1,5	2	Loose	30 deg
1,6	1	Very Loose	29 deg
1,7	1	Very Loose	29 deg
1,8	1	Very Loose	29 deg
1,9	1	Very Loose	29 deg
2	End		
2,1			
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



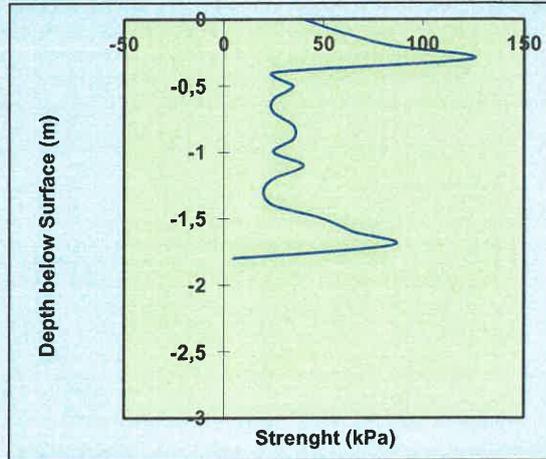
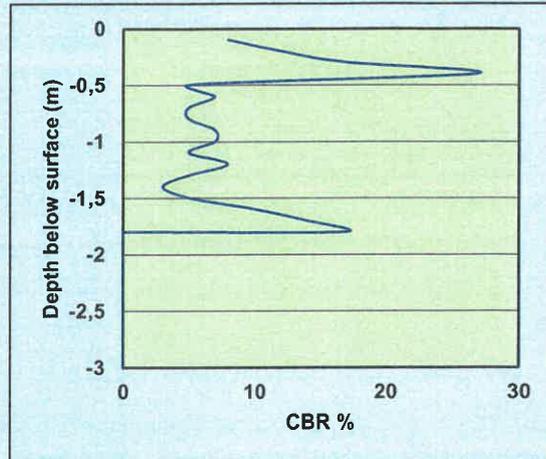
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Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 11
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	5	Firm	40 kPa
0,2	7	Firm	60 kPa
0,3	10	Stiff	85 kPa
0,4	15	Stiff	125 kPa
0,5	3	Loose	30 deg
0,6	4	Med.Dense	30 deg
0,7	3	Loose	30 deg
0,8	3	Loose	30 deg
0,9	4	Med.Dense	30 deg
1	4	Med.Dense	30 deg
1,1	3	Loose	30 deg
1,2	5	Firm	40 kPa
1,3	3	Soft	25 kPa
1,4	2	Soft	20 kPa
1,5	3	Soft	25 kPa
1,6	6	Firm	50 kPa
1,7	8	Firm	65 kPa
1,8	10	Stiff	85 kPa
1,9	End		
2			
2,1			
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



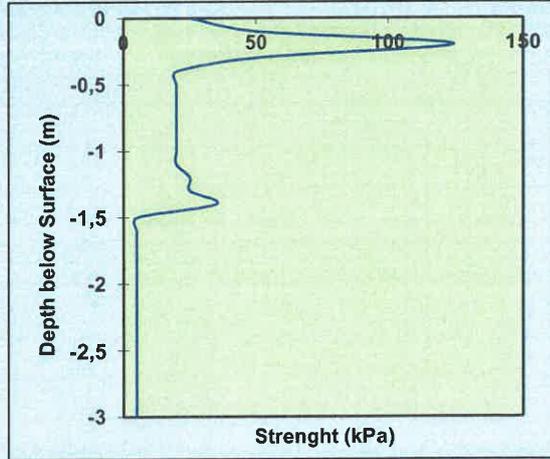
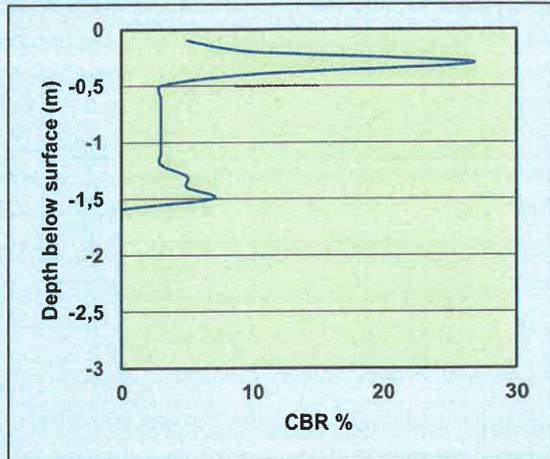
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Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 13
1,6 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	3	Loose	30 deg
0,2	6	Med.Dense	33 deg
0,3	15	Dense	37 deg
0,4	6	Med.Dense	33 deg
0,5	2	Loose	30 deg
0,6	2	Loose	30 deg
0,7	2	Loose	30 deg
0,8	2	Loose	30 deg
0,9	2	Loose	30 deg
1	2	Soft	20 kPa
1,1	2	Soft	20 kPa
1,2	2	Soft	20 kPa
1,3	3	Soft	25 kPa
1,4	3	Soft	25 kPa
1,5	4	Soft	35 kPa
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



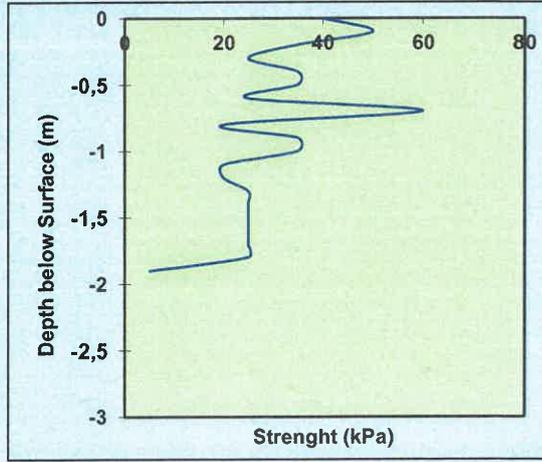
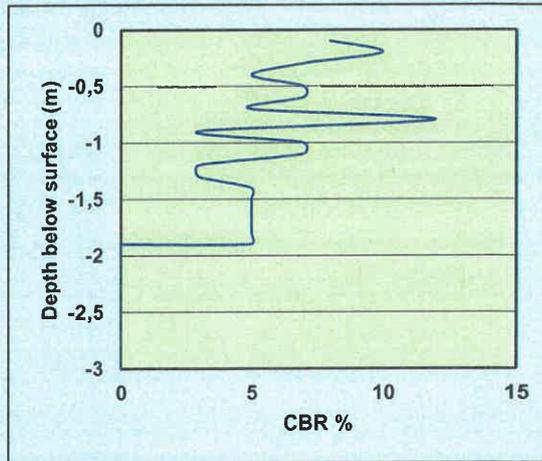
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Ukuza Consulting
GG011-23
TIKZN Eco-Park
16-Mar-23
DC 14
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	5	Med.Dense	32 deg
0,2	6	Med.Dense	33 deg
0,3	4	Med.Dense	30 deg
0,4	3	Loose	30 deg
0,5	4	Med.Dense	30 deg
0,6	4	Soft	35 kPa
0,7	3	Soft	25 kPa
0,8	7	Firm	60 kPa
0,9	2	Soft	20 kPa
1	4	Soft	35 kPa
1,1	4	Soft	35 kPa
1,2	2	Soft	20 kPa
1,3	2	Soft	20 kPa
1,4	3	Soft	25 kPa
1,5	3	Soft	25 kPa
1,6	3	Soft	25 kPa
1,7	3	Soft	25 kPa
1,8	3	Soft	25 kPa
1,9	3	Soft	25 kPa
2	End		
2,1			
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



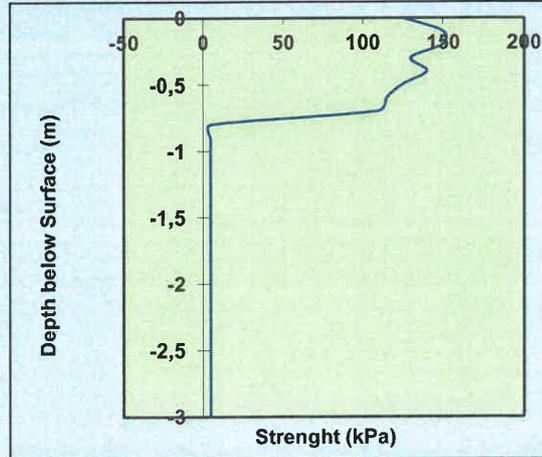
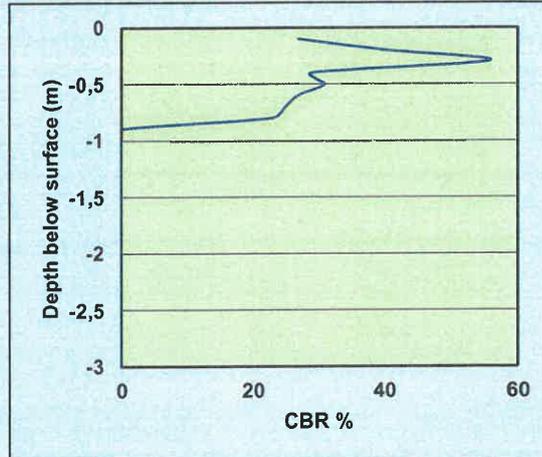
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Final Depth:

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GG011-23
TIKZN Eco-Park
17-Mar-23
DC 15
0,8 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	15	Dense	37 deg
0,2	21	Dense	38 deg
0,3	28	Very Dense	38 deg
0,4	16	Dense	37 deg
0,5	17	Dense	37 deg
0,6	15	Dense	37 deg
0,7	14	Dense	37 deg
0,8	13	Dense	37 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



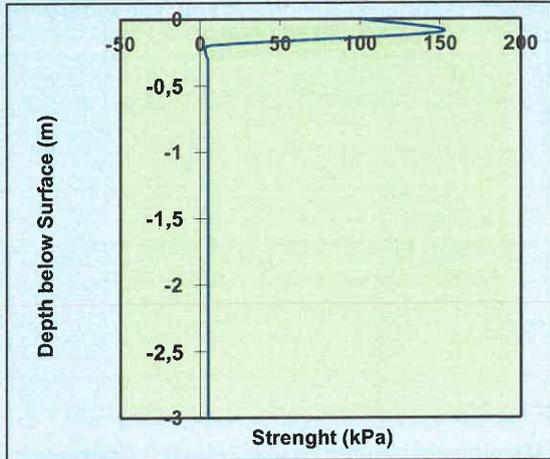
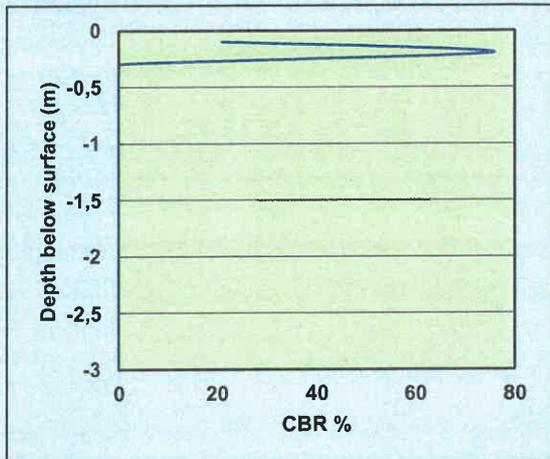
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Date:
DCP No.:
Final Depth:

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GG011-23
TIKZN Eco-Park
17-Mar-23
DC 16
0,3 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	12	Dense	36 deg
0,2	35	Very Dense	38 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



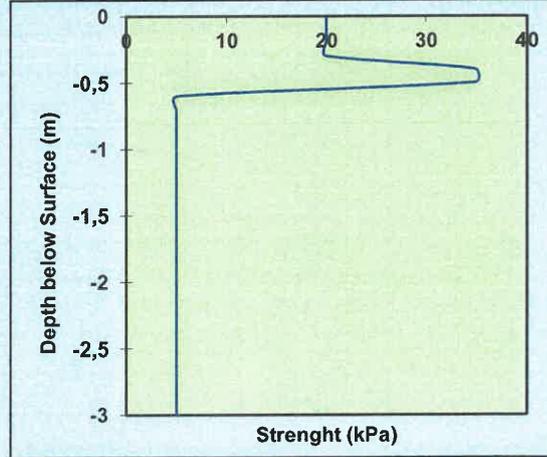
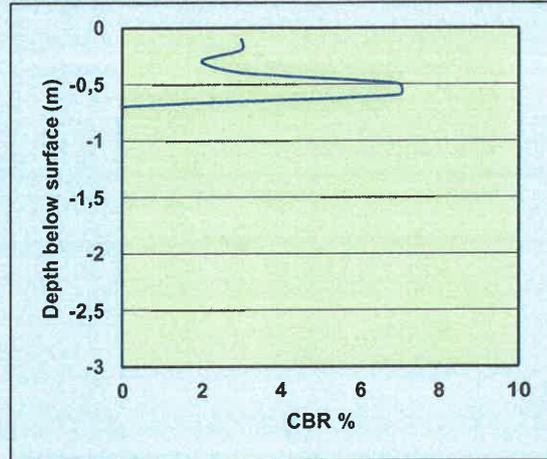
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Project:
Date:
DCP No.:
Final Depth:

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GG011-23
TIKZN Eco-Park
17-Mar-23
DC 17
0,3 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	2	Soft	20 kPa
0,2	2	Soft	20 kPa
0,3	1	Very Soft	20 kPa
0,4	2	Soft	20 kPa
0,5	4	Soft	35 kPa
0,6	4	Soft	35 kPa
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



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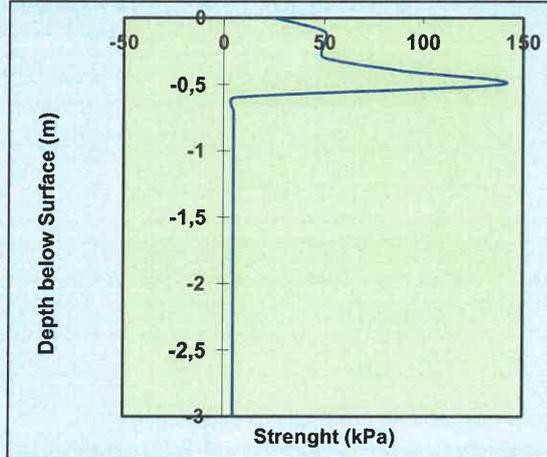
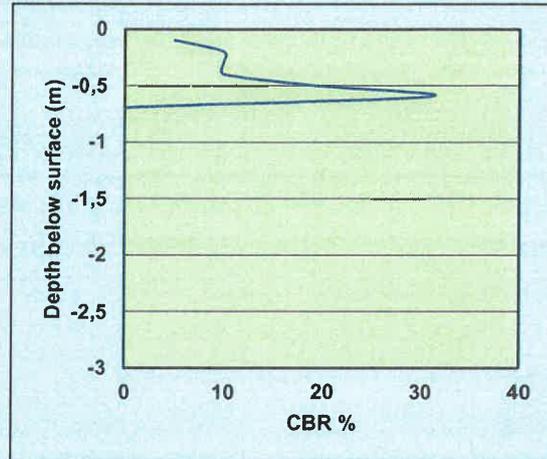
17-Mar-23

DC 18

0,6 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	3	Loose	30 deg
0,2	6	Med.Dense	33 deg
0,3	6	Med.Dense	33 deg
0,4	6	Med.Dense	33 deg
0,5	11	Dense	36 deg
0,6	17	Dense	37 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



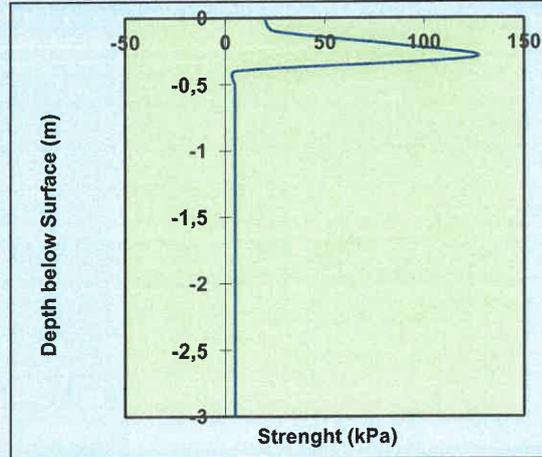
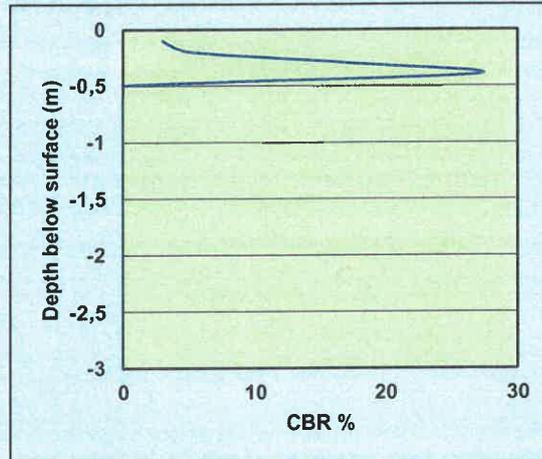
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
17-Mar-23
DC 19
0,4 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	2	Loose	30 deg
0,2	3	Loose	30 deg
0,3	10	Med.Dense	36 deg
0,4	15	Dense	37 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



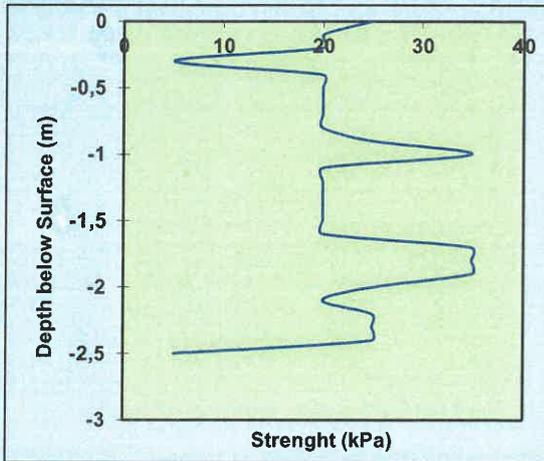
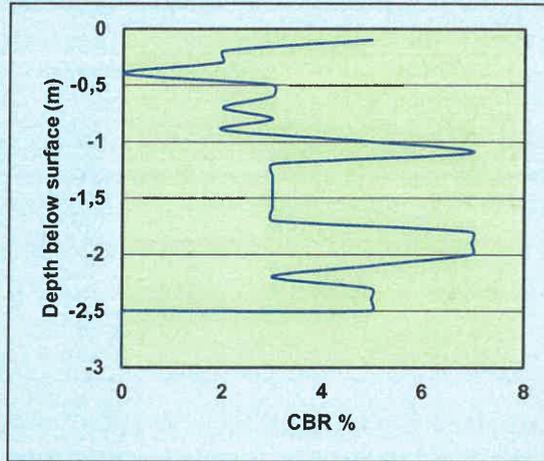
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
17-Mar-23
DC 20
2,5 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	3	Loose	30 deg
0,2	1	Very Loose	29 deg
0,3	1	Very Loose	29 deg
0,4	0	V.V.Loose	28 deg
0,5	2	Loose	30 deg
0,6	2	Loose	30 deg
0,7	1	Very Loose	29 deg
0,8	2	Loose	30 deg
0,9	1	Very Loose	29 deg
1	3	Loose	30 deg
1,1	4	Med.Dense	30 deg
1,2	2	Loose	30 deg
1,3	2	Loose	30 deg
1,4	2	Loose	30 deg
1,5	2	Loose	30 deg
1,6	2	Loose	30 deg
1,7	2	Loose	30 deg
1,8	4	Med.Dense	30 deg
1,9	4	Med.Dense	30 deg
2	4	Med.Dense	30 deg
2,1	3	Loose	30 deg
2,2	2	Loose	30 deg
2,3	3	Loose	30 deg
2,4	3	Loose	30 deg
2,5	3	Loose	30 deg
2,6	End		
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



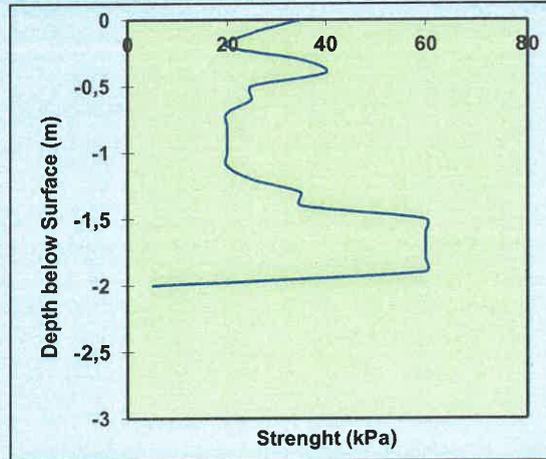
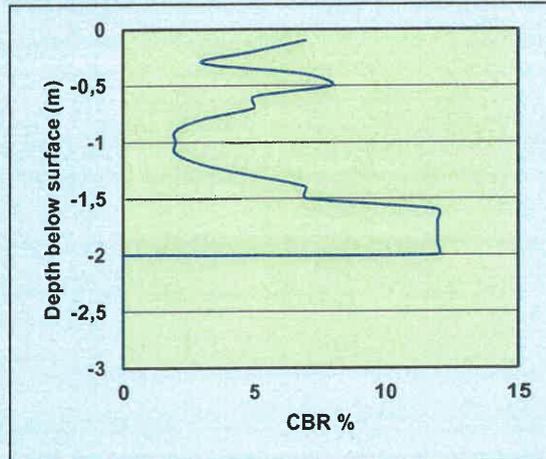
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
17-Mar-23
DC 21
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	4	Med.Dense	30 deg
0,2	3	Loose	30 deg
0,3	2	Loose	30 deg
0,4	4	Med.Dense	30 deg
0,5	5	Med.Dense	32 deg
0,6	3	Loose	30 deg
0,7	3	Loose	30 deg
0,8	2	Loose	30 deg
0,9	1	Very Loose	29 deg
1	1	Very Loose	29 deg
1,1	1	Very Loose	29 deg
1,2	2	Loose	30 deg
1,3	3	Loose	30 deg
1,4	4	Med.Dense	30 deg
1,5	4	Med.Dense	30 deg
1,6	7	Med.Dense	34 deg
1,7	7	Med.Dense	34 deg
1,8	7	Med.Dense	34 deg
1,9	7	Med.Dense	34 deg
2	7	Med.Dense	34 deg
2,1	End		
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



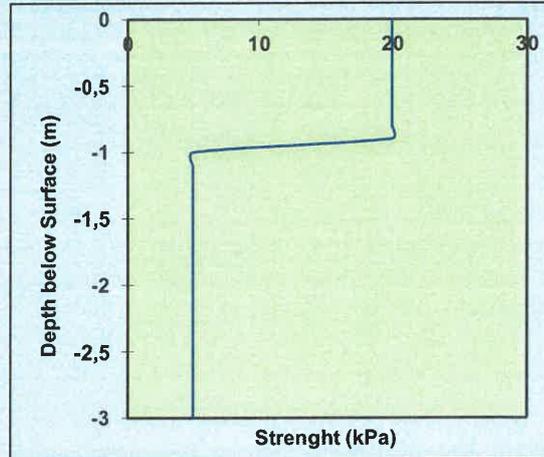
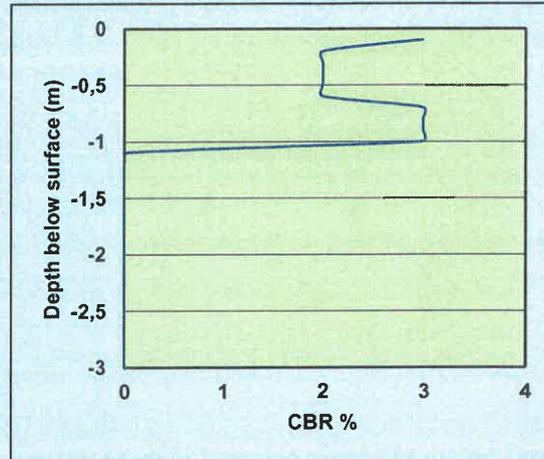
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
17-Mar-23
DC 22
1,2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	2	Loose	30 deg
0,2	1	Very Loose	29 deg
0,3	1	Very Loose	29 deg
0,4	1	Very Loose	29 deg
0,5	1	Very Loose	29 deg
0,6	1	Very Loose	29 deg
0,7	2	Loose	30 deg
0,8	2	Loose	30 deg
0,9	2	Loose	30 deg
1	2	Loose	30 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



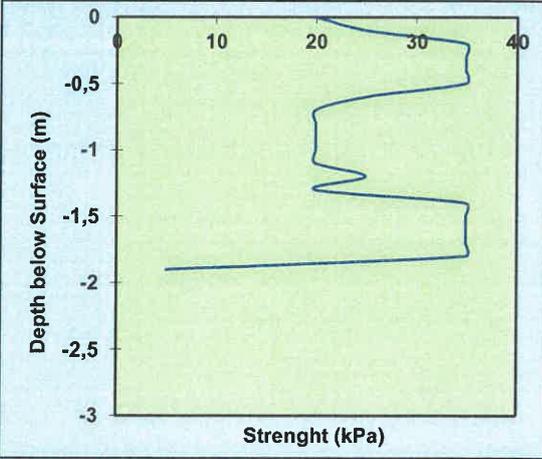
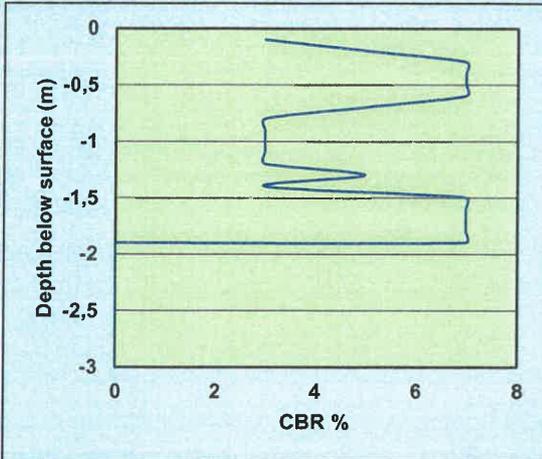
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
17-Mar-23
DC 23 (AH01)
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	2	Loose	30 deg
0,2	3	Loose	30 deg
0,3	4	Med.Dense	30 deg
0,4	4	Med.Dense	30 deg
0,5	4	Med.Dense	30 deg
0,6	4	Med.Dense	30 deg
0,7	3	Loose	30 deg
0,8	2	Loose	30 deg
0,9	2	Loose	30 deg
1	2	Loose	30 deg
1,1	2	Loose	30 deg
1,2	2	Loose	30 deg
1,3	3	Loose	30 deg
1,4	2	Loose	30 deg
1,5	4	Med.Dense	30 deg
1,6	4	Med.Dense	30 deg
1,7	4	Med.Dense	30 deg
1,8	4	Med.Dense	30 deg
1,9	4	Med.Dense	30 deg
2	End		
2,1			
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



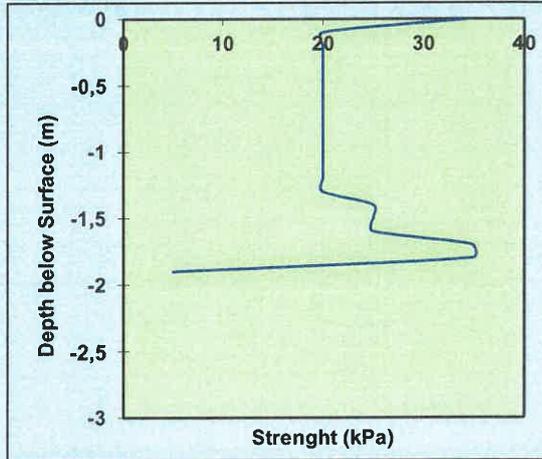
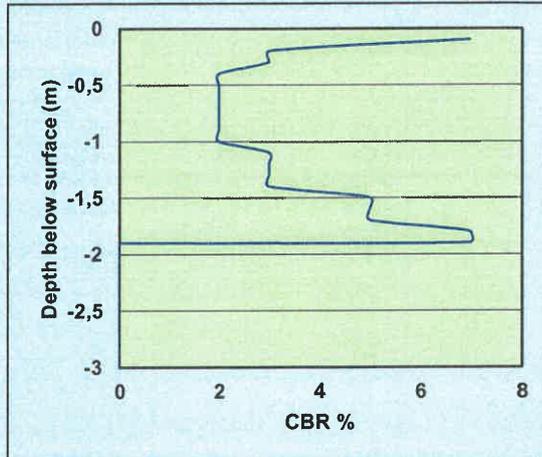
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
17-Mar-23
DC 24 (AH02)
2 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/ 0.1m	Inferred Consistency	Shear Strength
0			
0,1	4	Med.Dense	30 deg
0,2	2	Loose	30 deg
0,3	2	Loose	30 deg
0,4	1	Very Loose	29 deg
0,5	1	Very Loose	29 deg
0,6	1	Very Loose	29 deg
0,7	1	Very Loose	29 deg
0,8	1	Very Loose	29 deg
0,9	1	Very Loose	29 deg
1	1	Very Loose	29 deg
1,1	2	Loose	30 deg
1,2	2	Loose	30 deg
1,3	2	Loose	30 deg
1,4	2	Loose	30 deg
1,5	3	Loose	30 deg
1,6	3	Loose	30 deg
1,7	3	Loose	30 deg
1,8	4	Med.Dense	30 deg
1,9	4	Med.Dense	30 deg
2	End		
2,1			
2,2			
2,3			
2,4			
2,5			
2,6			
2,7			
2,8			
2,9			
3			



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



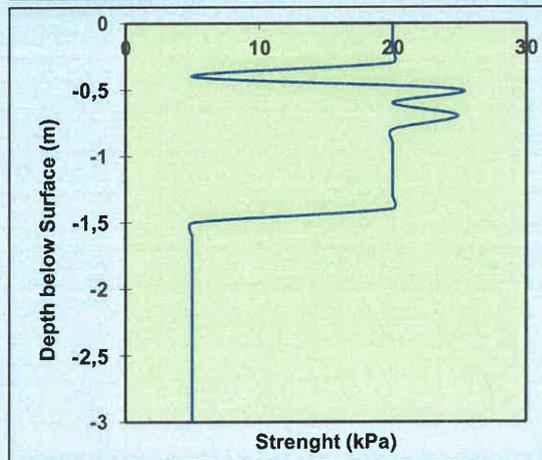
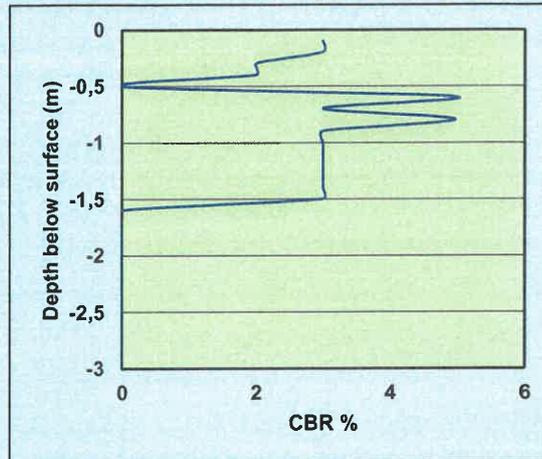
**GEVORKYAN
GEOPHYSICS
(PTY) LTD**
CONSULTING EARTH SCIENTISTS

Client Name
Reference:
Project:
Date:
DCP No.:
Final Depth:

Ukuza Consulting
GG011-23
TIKZN Eco-Park
17-Mar-23
DC 25 (AH03)
1,5 m

The shear strength values are based on empirical calculations and should be used as a guide only

Depth (m)	Blows/0.1m	Inferred Consistency	Shear Strength
0			
0,1	2	Loose	30 deg
0,2	2	Loose	30 deg
0,3	1	Very Loose	29 deg
0,4	1	Very Loose	29 deg
0,5	0	V.V.Loose	28 deg
0,6	3	Loose	30 deg
0,7	2	Loose	30 deg
0,8	3	Loose	30 deg
0,9	2	Loose	30 deg
1	2	Loose	30 deg
1,1	2	Loose	30 deg
1,2	2	Loose	30 deg
1,3	2	Loose	30 deg
1,4	2	Loose	30 deg
1,5	2	Loose	30 deg
	Ref		



The results shown here are based on calculations using the DCP test. These are classified as indicative values and need to be verified by other testing methods.



APPENDIX C: LABORATORY TEST RESULTS



GEO-SOL EARTH CIVIL TESTING

Geotechnical Solutions (PTY) LTD
 106 Francis Road – P.O. Box 303 - Ladysmith – KwaZulu Natal – 3370
 Reg No. – K2011/115681/07 – Tax No. - 9127/374/18/0 – VAT No. - 4260 3033 28
 Radiation Control – Authority No. - 2962/16/1430



Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.			TP01A
Depth Taken.			0,2-0,4m
Weight of Samples.			25,8
Date Received.			20/03/2023
Description of Sample	Dark Brown Sandy Clay - Colluvium		
Sieve Analysis (mm)	100,00		100,00
	75,00		100,00
	37,50		100,00
	26,50		100,00
	19,00		100,00
	13,20		100,00
	4,75		100,00
	2,00		97,20
	0,43		89,20
	0,25		84,60
	0,15		81,60
	0,075		78,80
Hydrometer Analysis (mm)	0,060		47,52
	0,050		46,47
	0,004		38,06
	0,002		38,06
Classification	Jennings	British	
CLAY	46,47	47,52	
SILT	32,33	31,28	
SAND	18,40	18,40	
GRAVEL	2,80	2,80	
Atterberg Limit	LL%	42,10	
	P.I.	14,50	
	LS%	8,00	
	GM	0,35	
Classification	AASHTO	A-7-6	TRH14
	UNIFIED	CL	

Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

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 Radiation Control – Authority No. – 2962/16/1430
 Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 – Email – projects@geo-sol.co.za

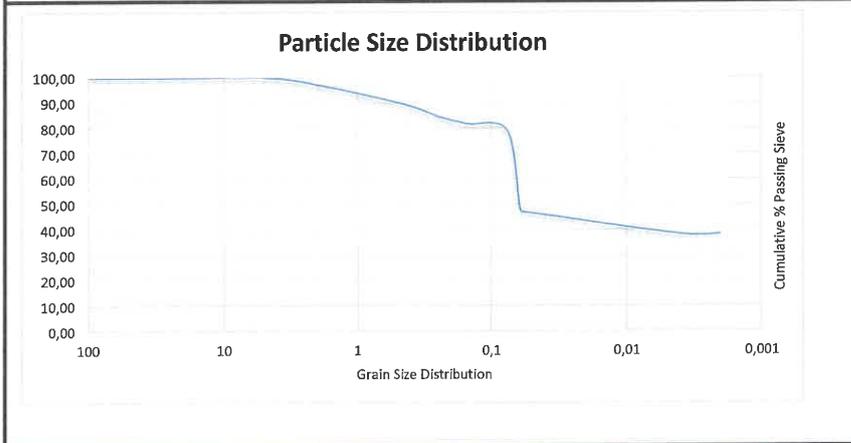


TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP01A
Depth Taken.	0,2-0,4m
Weight of Samples.	25,8
Date Received.	20/03/2023

Description of Sample	Dark Brown Sandy Clay - Colluvium
------------------------------	-----------------------------------



Natural Moisture Content			
	Container + Sample (Wet)		660
Dry Sample: 500g	Container + Sample (Dry)		540
Container Weight 160g	Moisture %		18,2

PH - EC - TDS - Temp (°C)		Potential Expansivity	
pH	7,1	Low	x
EC (µS/cm)	93	Medium	
TDS (ppm)	44	High	
Temp (°C)	22,7		

Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

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 Radiation Control – Authority No. - 2962/16/1430



Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.	TP01B		
Depth Taken.	0,4-1,2m		
Weight of Samples.	77,9		
Date Received.	20/03/2023		
Description of Sample	Medium Brown Silty Clay - Residual		
Sieve Analysis (mm)	100,00	100,00	
	75,00	100,00	
	37,50	100,00	
	26,50	100,00	
	19,00	100,00	
	13,20	97,40	
	4,75	95,60	
	2,00	92,20	
	0,43	84,00	
	0,25	80,40	
	0,15	78,20	
0,075	76,20		
Hydrometer Analysis (mm)	0,060	38,33	
	0,050	37,17	
	0,004	27,43	
	0,002	26,01	
Classification	Jennings	British	
CLAY	37,17	38,33	
SILT	39,03	37,87	
SAND	16,00	16,00	
GRAVEL	7,80	7,80	
Atterberg Limit	LL%	40,10	
	P.I.	11,60	
	LS%	6,70	
	GM	0,48	
Classification	AASHTO	A-7-6	TRH14
	UNIFIED	CL	>G10

Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

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 Radiation Control – Authority No. - 2962/16/1430
 Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

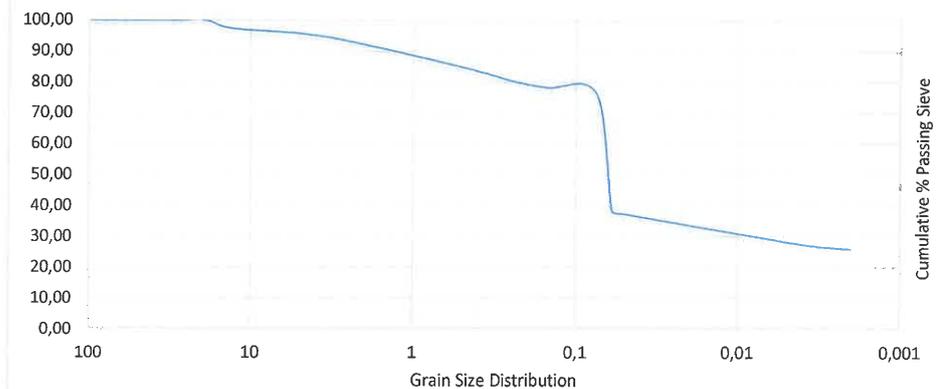


TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TPO1B
Depth Taken.	0,4-1,2m
Weight of Samples.	77,9
Date Received.	20/03/2023
Description of Sample	Medium Brown Silty Clay - Residual

Particle Size Distribution



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	555
Container Weight 160g	Moisture %	15,9

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	6,5	Low	
EC (µS/cm)	105	Medium	X
TDS (ppm)	83	High	
Temp (°C)	24,6	Earthworks Classification	

Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

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Radiation Control – Authority No.- 2962/16/1430



Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

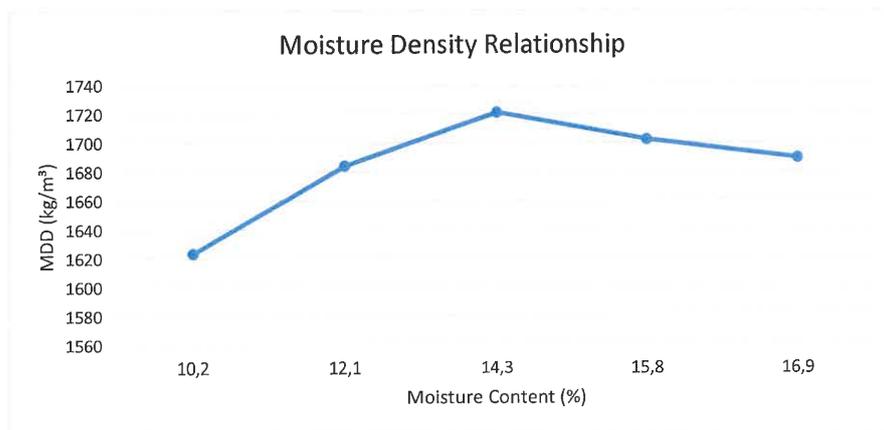
TEST REPORT: MOD AASHTO - SANS 3001 - GR31

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP01B
Depth Taken.	0,4-1,2m
Weight of Samples.	77,9
Date Received.	20/03/2023
Description of Sample	Medium Brown Silty Clay - Residual

Sample No	Moisture (%)	Dry Density (kg/m ³)
1	10,2	1623
2	12,1	1684
3	14,3	1721
4	15,8	1702
5	16,9	1689

Optimum Moisture Content (%) (OMC)	Maximum Dry density (kg/m ³) (MDD)
14,3	1721



Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

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Radiation Control – Authority No. - 2962/16/1430

Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za



TEST REPORT: CBR - SANS 3001 - GR40

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.	TP01B		
Depth Taken.	0,4-1,2m		
Weight of Samples.	77,9		
Date Received.	20/03/2023		
Description of Sample	Medium Brown Silty Clay - Residual		

CBR Laboratory Working Sheet	CBR % Raw
CBR @ 100% Compaction	7,7
CBR @ 98% Compaction	5,9
CBR @ 97% Compaction	4,2
CBR @ 95% Compaction	3,7
CBR @ 93% Compaction	2,3
CBR @ 90% Compaction	2,1
CBR Final Results	CBR %
CBR @ 100% Compaction	7
CBR @ 98% Compaction	5
CBR @ 97% Compaction	4
CBR @ 95% Compaction	3
CBR @ 93% Compaction	2
CBR @ 90% Compaction	2
Swell @ 100% Compaction	2

Classification	TRH14	>G10
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Swell

$$S = \frac{(k - l)}{127} \times 100$$

Where:
 S = swell expressed as a percentage of the height of the moulded material before soaking i.e. 127mm
 K = dial gauge reading after four days of soaking
 L = dial gauge reading before soaking

NB: The swell is reported to the nearest first decimal point.

Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.	TPO4		
Depth Taken.	0-0,7m		
Weight of Samples.	22,8		
Date Received.	20/03/2023		
Description of Sample	Greyish Brown - Clayey Gravel - Fill		
Sieve Analysis (mm)	100,00	100,00	
	75,00	100,00	
	37,50	100,00	
	26,50	100,00	
	19,00	100,00	
	13,20	100,00	
	4,75	94,40	
	2,00	87,80	
	0,43	77,00	
	0,25	71,40	
	0,15	67,80	
0,075	65,80		
Hydrometer Analysis (mm)	0,060	26,52	
	0,050	26,52	
	0,004	21,25	
	0,002	21,25	
Classification	Jennings	British	
CLAY	26,52	26,52	
SILT	39,28	39,28	
SAND	22,00	22,00	
GRAVEL	12,20	12,20	
Atterberg Limit	LL%	25,80	
	P.I.	11,40	
	LS%	6,00	
	GM	0,69	
Classification	AASHTO	A-7-6	TRH14
	UNIFIED	CL	N/A

Notes: Data Reported above relates to sample tested.



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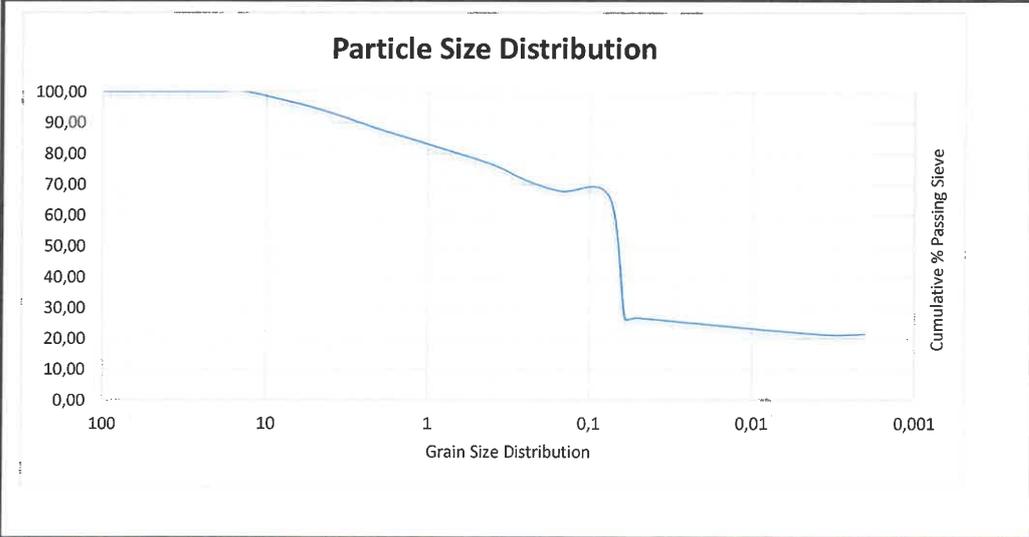


Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP04
Depth Taken.	0-0,7m
Weight of Samples.	22,8
Date Received.	20/03/2023
Description of Sample	Greyish Brown - Clayey Gravel - Fill



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	593
Container Weight 160g	Moisture %	10,2

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	7	Low	
EC (µS/cm)	393	Medium	X
TDS (ppm)	197	High	
Temp (°C)	21,9	Earthworks Classification	Group A - Granular Soils

Notes: Data Reported above relates to sample tested.



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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.	TP07A		
Depth Taken.	0-0,5m		
Weight of Samples.	24,2		
Date Received.	20/03/2023		
Description of Sample	Dark Brown to Black Clay		
Sieve Analysis (mm)	100,00	100,00	
	75,00	100,00	
	37,50	100,00	
	26,50	100,00	
	19,00	100,00	
	13,20	100,00	
	4,75	100,00	
	2,00	100,00	
	0,43	88,40	
	0,25	64,20	
	0,15	60,80	
	0,075	58,20	
Hydrometer Analysis (mm)	0,060	30,44	
	0,050	29,58	
	0,004	22,13	
	0,002	21,04	
Classification	Jennings	British	
CLAY	29,58	30,44	
SILT	28,62	27,76	
SAND	41,80	41,80	
GRAVEL	0,00	0,00	
Atterberg Limit	LL%	28,00	
	P.I.	15,40	
	LS%	8,70	
	GM	0,53	
Classification	AASHTO	A-6	TRH14
	UNIFIED	SC	N/A

Notes: Data Reported above relates to sample tested.



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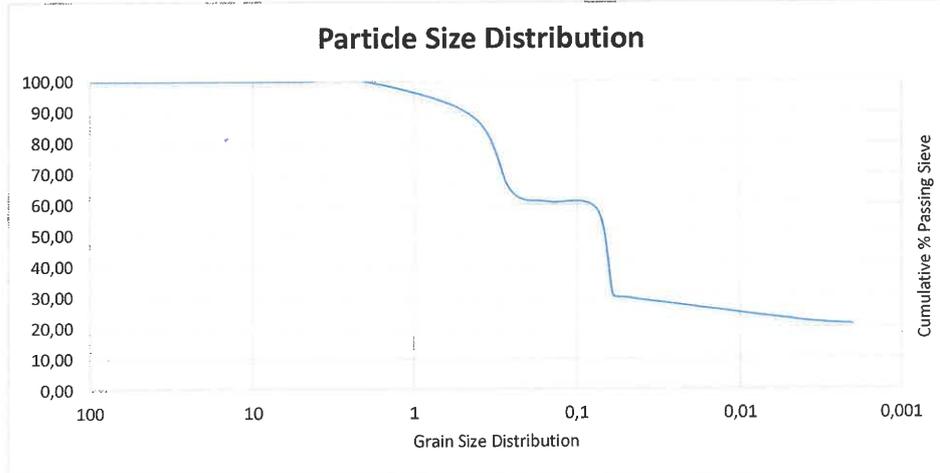
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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TPO7A
Depth Taken.	0-0,5m
Weight of Samples.	24,2
Date Received.	20/03/2023
Description of Sample	Dark Brown to Black Clay



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	576
Container Weight 160g	Moisture %	12,7

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	8,7	Low	X
EC (µS/cm)	426	Medium	
TDS (ppm)	213	High	
Temp (°C)	21,6	Earthworks Classification	

Notes: Data Reported above relates to sample tested.



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Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za



TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.	TP07B		
Depth Taken.	0,5-1,0m		
Weight of Samples.	24,2		
Date Received.	20/03/2023		
Description of Sample	Dark Brown gravelly Sandy Clay		
Sieve Analysis (mm)	100,00	100,00	
	75,00	100,00	
	37,50	100,00	
	26,50	100,00	
	19,00	96,80	
	13,20	93,80	
	4,75	87,20	
	2,00	78,20	
	0,43	70,00	
	0,25	67,20	
	0,15	65,00	
	0,075	62,80	
Hydrometer Analysis (mm)	0,060	27,82	
	0,050	26,80	
	0,004	21,34	
	0,002	20,18	
Classification	Jennings	British	
CLAY	26,80	27,82	
SILT	36,00	34,98	
SAND	15,40	15,40	
GRAVEL	21,80	21,80	
Atterberg Limit	LL%	27,00	
	P.I.	14,50	
	LS%	7,30	
	GM	0,89	
Classification	AASHTO	A-6	TRH14
	UNIFIED	GC	N/A

Notes: Data Reported above relates to sample tested.



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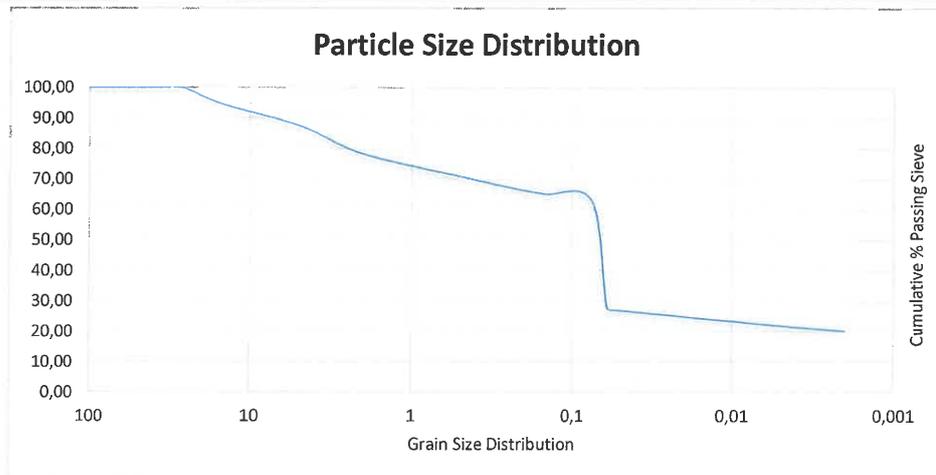
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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP07B
Depth Taken.	0,5-1,0m
Weight of Samples.	24,2
Date Received.	20/03/2023
Description of Sample	Dark Brown gravelly Sandy Clay



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	581
Container Weight 160g	Moisture %	12,0

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	7,5	Low	
EC (µS/cm)	127	Medium	x
TDS (ppm)	63	High	
Temp (°C)	24,1	Earthworks Classification	

Notes: Data Reported above relates to sample tested.



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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.			TP09
Depth Taken.			0,5-0,7
Weight of Samples.			25,8
Date Received.			20/03/2023
Description of Sample	Olive Silty Clay - Residual		
Sieve Analysis (mm)	100,00		100,00
	75,00		100,00
	37,50		100,00
	26,50		100,00
	19,00		100,00
	13,20		98,00
	4,75		89,20
	2,00		76,20
	0,43		72,00
	0,25		67,60
	0,15		64,40
	0,075		63,20
Hydrometer Analysis (mm)	0,060		26,73
	0,050		25,69
	0,004		20,20
	0,002		19,03
Classification		Jennings	British
CLAY		25,69	26,73
SILT		37,51	36,47
SAND		13,00	13,00
GRAVEL		23,80	23,80
Atterberg Limit	LL%		23,90
	P.I.		9,50
	LS%		5,30
	GM		0,89
Classification	AASHTO	A-4	TRH14
	UNIFIED	GM	N/A

Notes: Data Reported above relates to sample tested.



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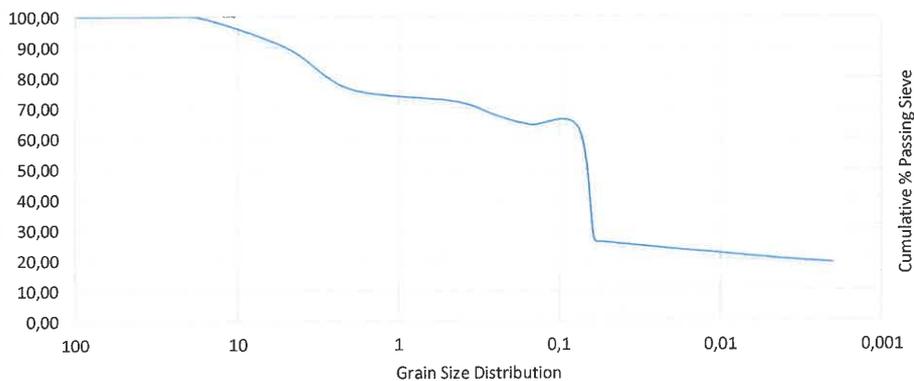
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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP09
Depth Taken.	0,5-0,7
Weight of Samples.	25,8
Date Received.	20/03/2023
Description of Sample	Olive Silty Clay - Residual

Particle Size Distribution



Natural Moisture Content

Dry Sample: 500g	Container + Sample (Wet)	660
	Container + Sample (Dry)	586
	Moisture %	11,2
Container Weight 160g		

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	7,1	Low	X
EC (µS/cm)	192	Medium	
TDS (ppm)	96	High	
Temp (°C)	24,2	Earthworks Classification	

Notes: Data Reported above relates to sample tested.



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Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.	TP15		
Depth Taken.	0-0,8m		
Weight of Samples.	24,4		
Date Received.	20/03/2023		
Description of Sample	Light Brown Sandy Gravel - Fill		
Sieve Analysis (mm)	100,00	100,00	
	75,00	100,00	
	37,50	100,00	
	26,50	100,00	
	19,00	96,80	
	13,20	93,00	
	4,75	81,80	
	2,00	69,60	
	0,43	55,60	
	0,25	50,40	
	0,15	47,60	
0,075	45,20		
Hydrometer Analysis (mm)	0,060	19,12	
	0,050	18,37	
	0,004	14,45	
	0,002	13,61	
Classification	Jennings	British	
CLAY	18,37	19,12	
SILT	26,83	26,08	
SAND	24,40	24,40	
GRAVEL	30,40	30,40	
Atterberg Limit	LL%	22,00	
	P.I.	7,60	
	LS%	3,30	
	GM	1,30	
Classification	AASHTO	A-4	TRH14
	UNIFIED	GC	N/A

Notes: Data Reported above relates to sample tested.



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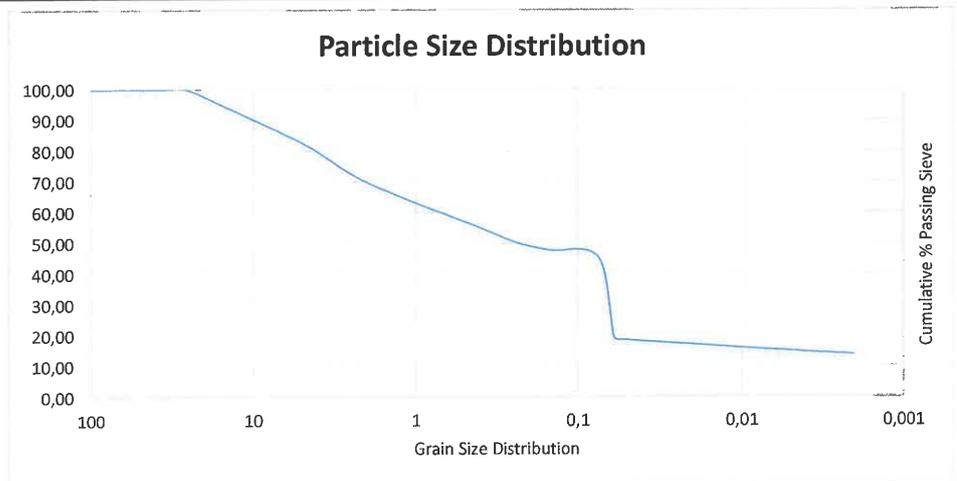


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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP15
Depth Taken.	0-0,8m
Weight of Samples.	24,4
Date Received.	20/03/2023
Description of Sample	Light Brown Sandy Gravel - Fill



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	567
Container Weight 160g	Moisture %	14,1

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	7,5	Low	X
EC (µS/cm)	199	Medium	
TDS (ppm)	99	High	
Temp (°C)	24,3	Earthworks Classification	

Notes: Data Reported above relates to sample tested.



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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.	TP19		
Depth Taken.	0-0,7m		
Weight of Samples.	81,2		
Date Received.	20/03/2023		
Description of Sample	Light Brown Sandy Gravel - Fill		
Sieve Analysis (mm)	100,00	100,00	
	75,00	100,00	
	37,50	100,00	
	26,50	100,00	
	19,00	100,00	
	13,20	95,60	
	4,75	84,40	
	2,00	72,20	
	0,43	59,20	
	0,25	55,20	
	0,15	52,60	
	0,075	50,40	
Hydrometer Analysis (mm)	0,060	25,35	
	0,050	24,59	
	0,004	19,30	
	0,002	19,30	
Classification	Jennings	British	
CLAY	24,59	25,35	
SILT	25,81	25,05	
SAND	21,80	21,80	
GRAVEL	27,80	27,80	
Atterberg Limit	LL%	21,30	
	P.I.	7,30	
	LS%	4,00	
	GM	1,18	
Classification	AASHTO	A-4	TRH14
	UNIFIED	SC	>G10

Notes: Data Reported above relates to sample tested.



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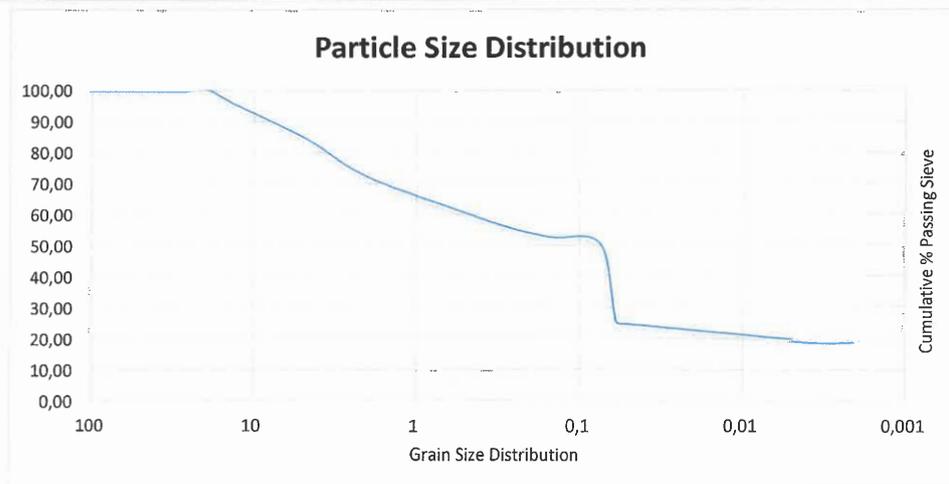


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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Georkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP19
Depth Taken.	0-0,7m
Weight of Samples.	81,2
Date Received.	20/03/2023
Description of Sample	Light Brown Sandy Gravel - Fill



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	559
Container Weight 160g	Moisture %	15,3

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	7,4	Low	X
EC (µS/cm)	187	Medium	
TDS (ppm)	91	High	
Temp (°C)	22,9	Earthworks Classification	

Notes: Data Reported above relates to sample tested.



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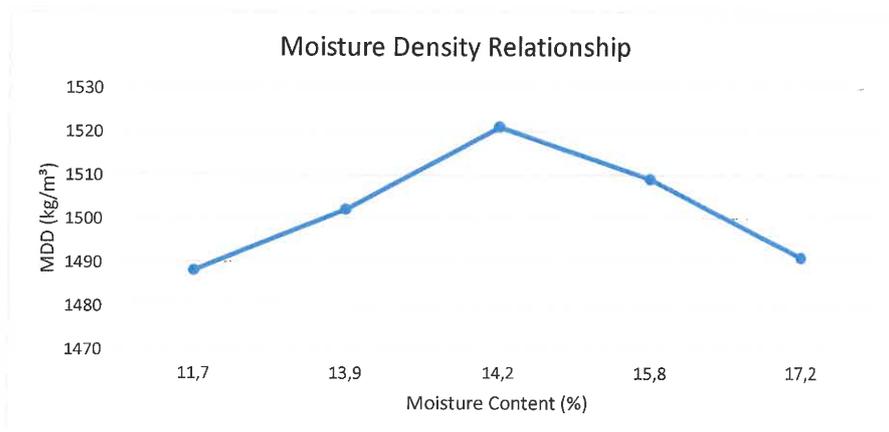
TEST REPORT: MOD AASHTO - SANS 3001 - GR31

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP19
Depth Taken.	0-0,7m
Weight of Samples.	81,2
Date Received.	20/03/2023
Description of Sample	Light Brown Sandy Gravel - Fill

Sample No	Moisture (%)	Dry Density (kg/m ³)
1	11,7	1488
2	13,9	1502
3	14,2	1521
4	15,8	1509
5	17,2	1491

Optimum Moisture Content (%) (OMC)	Maximum Dry density (kg/m³) (MDD)
14,2	1521



Notes: Data Reported above relates to sample tested.



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TEST REPORT: CBR - SANS 3001 - GR40

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP19
Depth Taken.	0-0,7m
Weight of Samples.	81,2
Date Received.	20/03/2023
Description of Sample	Light Brown Sandy Gravel - Fill

CBR Laboratory Working Sheet	CBR % Raw
CBR @ 100% Compaction	5,9
CBR @ 98% Compaction	4,9
CBR @ 97% Compaction	3,1
CBR @ 95% Compaction	2,8
CBR @ 93% Compaction	1,9
CBR @ 90% Compaction	1,1
CBR Final Results	CBR %
CBR @ 100% Compaction	5
CBR @ 98% Compaction	4
CBR @ 97% Compaction	3
CBR @ 95% Compaction	2
CBR @ 93% Compaction	1
CBR @ 90% Compaction	1
Swell @ 100% Compaction	0,1

Classification	TRH14	>G10
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Swell

$$S = \frac{(k - l)}{127} \times 100$$

Where:
 S = swell expressed as a percentage of the height of the moulded material before soaking i.e. 127mm
 K = dial gauge reading after four days of soaking
 L = dial gauge reading before soaking

NB: The swell is reported to the nearest first decimal point.

Notes: Data Reported above relates to sample tested.



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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP20
Depth Taken.	0,7-2,5m
Weight of Samples.	24,1
Date Received.	20/03/2023

Description of Sample	Medium Brown Clayey Sandy Silt - Alluvium
------------------------------	---

Sieve Analysis (mm)	100,00	100,00
	75,00	100,00
	37,50	100,00
	26,50	100,00
	19,00	100,00
	13,20	99,40
	4,75	98,20
	2,00	96,80
	0,43	86,60
	0,25	67,40
	0,15	58,00
	0,075	50,80

Hydrometer Analysis (mm)	0,060	25,55
	0,050	24,78
	0,004	19,46
	0,002	19,46

Classification	Jennings	British
CLAY	24,78	25,55
SILT	26,02	25,25
SAND	46,00	46,00
GRAVEL	3,20	3,20

Atterberg Limit	LL%	21,80
	P.I.	7,80
	LS%	3,30
	GM	0,66

Classification	AASHTO	A-4	TRH14
	UNIFIED	SC	N/A

Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

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 Radiation Control – Authority No.- 2962/16/1430

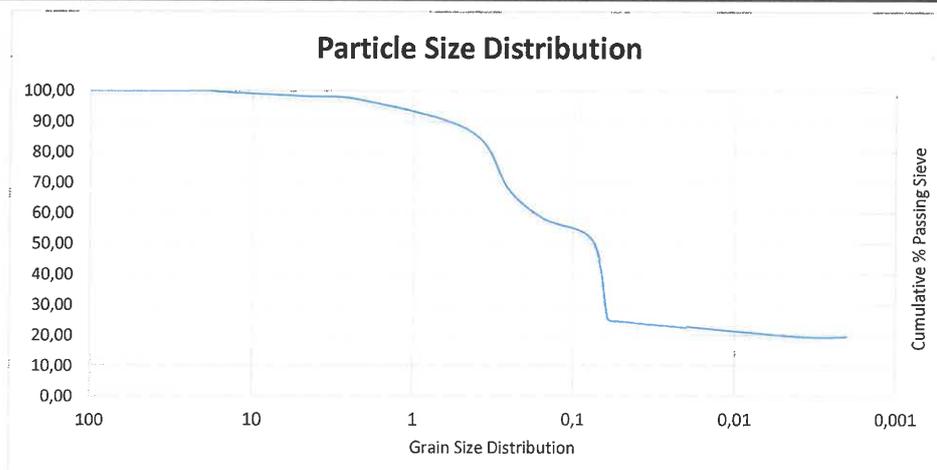


Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP20
Depth Taken.	0,7-2,5m
Weight of Samples.	24,1
Date Received.	20/03/2023
Description of Sample	Medium Brown Clayey Sandy Silt - Alluvium



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	584
Container Weight 160g	Moisture %	11,5

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	9,3	Low	X
EC (µS/cm)	631	Medium	
TDS (ppm)	324	High	
Temp (°C)	21,7	Earthworks Classification	

Notes: Data Reported above relates to sample tested.



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 Radiation Control – Authority No. - 2962/16/1430



Web – www.geo-sol.co.za – Tel – 0715608058 – 0726608445 - Email – projects@geo-sol.co.za

TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		
Sample No.			TP22
Depth Taken.			0-1,2m
Weight of Samples.			26,4
Date Received.			20/03/2023
Description of Sample	Medium Brown Silty Sand - Alluvium		
Sieve Analysis (mm)	100,00		100,00
	75,00		100,00
	37,50		100,00
	26,50		100,00
	19,00		100,00
	13,20		100,00
	4,75		100,00
	2,00		100,00
	0,43		94,60
	0,25		68,40
	0,15		53,60
0,075		45,80	
Hydrometer Analysis (mm)	0,060		23,95
	0,050		23,28
	0,004		17,42
	0,002		16,56
Classification		Jennings	British
CLAY		23,28	23,95
SILT		22,52	21,85
SAND		54,20	54,20
GRAVEL		0,00	0,00
Atterberg Limit	LL%		25,30
	P.I.		11,30
	LS%		7,30
	GM		0,60
Classification	AASHTO	A-6	TRH14
	UNIFIED	SC	N/A

Notes: Data Reported above relates to sample tested.



GEO-SOL EARTH CIVIL TESTING

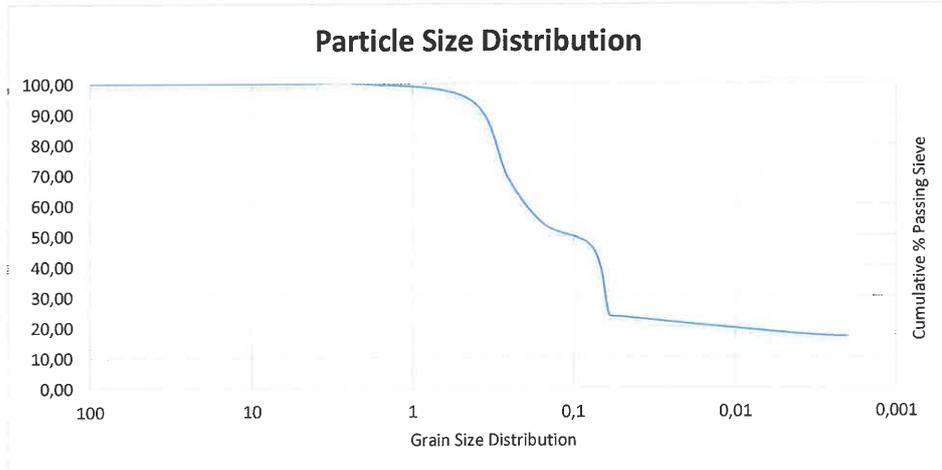
Geotechnical Solutions (PTY) LTD
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TEST REPORT: SANS 3001- GR1 - GR12

Client Name:	Gevorkyan Geophysics	GeoSol Ref:	2306_02
Client Address:	69 Muniredy Road, Northdale	Date Analysed:	29/03/2023
Project Name:	TIKZN	Technical Signatory	Richard Malungani
Attention:	Mr N Govender		

Sample No.	TP22
Depth Taken.	0-1,2m
Weight of Samples.	26,4
Date Received.	20/03/2023
Description of Sample	Medium Brown Silty Sand - Alluvium



Natural Moisture Content

	Container + Sample (Wet)	660
Dry Sample: 500g	Container + Sample (Dry)	587
Container Weight 160g	Moisture %	11,1

PH - EC - TDS - Temp (°C)

Potential Expansivity

pH	7,2	Low	
EC (µS/cm)	88	Medium	x
TDS (ppm)	131	High	
Temp (°C)	21,4	Earthworks Classification	

Notes: Data Reported above relates to sample tested.

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 6

The Terrestrial Biodiversity Compliance Statement



The Terrestrial Biodiversity Compliance Statement for the proposed TIKZN Eco Park

**Pietermaritzburg, KwaZulu-Natal
Province, South Africa**

May 2023

CLIENT



Prepared by:

The Biodiversity Company

Cell: +27 81 319 1225

Fax: +27 86 527 1965

info@thebiodiversitycompany.com

www.thebiodiversitycompany.com



Report Name	The Terrestrial Biodiversity Compliance Statement for the proposed TIKZN Eco Park	
Reference	TIKZN Eco park	
Submitted to		
Report Writer	<p>Leigh-Ann de Wet</p> 	
	<p>Ms Leigh-Ann de Wet is Pr. Nat. Sci. registered (400233/12) and has extensive experience in assessing terrestrial biodiversity. She obtained her MSc in Botany from Rhodes University. She has over 15 years' experience conducting terrestrial biodiversity assessments (including both flora and fauna as well as specialist avifauna) throughout Southern Africa, West and Central Africa and Madagascar. She has experience in all 9 provinces of South Africa with a particular interest in KZN forest flora, and avifauna.</p>	
Report Write / Reviewer	<p>Andrew Husted</p> 	
	<p>Andrew Husted is Pr Sci Nat registered (400213/11) in the following fields of practice: Ecological Science, Environmental Science and Aquatic Science. Andrew is an Aquatic, Wetland and Biodiversity Specialist with more than 13 years' experience in the environmental consulting field.</p>	
Declaration	<p>The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.</p>	

Table of Contents

1	Introduction.....	1
1.1	Background	1
1.2	Project Description	1
1.3	Report Legislative Framework	7
1.4	Assumptions and Limitations	7
2	Methods.....	9
2.1	Desktop Assessments.....	9
2.2	Biodiversity Field Survey.....	9
2.3	Terrestrial Site Ecological Importance	10
3	Results & Discussion	14
3.1	Desktop Assessments.....	14
3.1.1	Ecologically Important Landscape Features	14
3.2	Biodiversity Field Survey.....	14
3.2.1	Screening Tool Comparison.....	18
4	Impact Management and Mitigation Plan.....	19
5	Conclusion and Impact Statement	27
5.1	Impact Statement	27
5.2	Specialist Recommendations	27
6	References	28
7	Appendix Items.....	30
7.1	Appendix B: Specialist Declarations	30
7.2	Appendix C: Specialist CVs	32

List of Tables

Table 1-1	Terrestrial Biodiversity Compliance Statement information requirements as per the relevant protocol, including the location of the information within this report	7
Table 2-1	Summary of Conservation Importance (CI) criteria.....	11
Table 2-2	Summary of Functional Integrity (FI) criteria.....	11
Table 2-3	Matrix used to derive Biodiversity Importance (BI) from Functional Integrity (FI) and Conservation Importance (CI)	12
Table 2-4	Summary of Receptor Resilience (RR) criteria	12
Table 2-5	Matrix used to derive Site Ecological Importance from Receptor Resilience (RR) and Biodiversity Importance (BI)	12
Table 2-6	Guideline for interpreting Site Ecological Importance in the context of proposed activities	13
Table 3-1	Summary of the spatial relevance of the project area to local ecologically important landscape features	14
Table 3-2	Sensitivity summary of the habitat types delineated within the Project area of Influence	15
Table 3-3	Summary of the screening tool vs. specialist assigned sensitivities	18
Table 4-1	Project specific mitigation measures including requirements for timeframes, roles and responsibilities.....	20

List of Figures

Figure 1-1	Map illustrating the regional locality of the project area	5
Figure 1-2	Map illustrating the project area with proposed site layout	6
Figure 4-2	Map illustrating the location of the survey field tracks.....	10
Figure 3-1	Terrestrial Biodiversity Theme Sensitivity for the Project Area (National Environmental Screening Tool, 2022)	18

1 Introduction

1.1 Background

The Biodiversity Company was appointed to undertake a terrestrial biodiversity (fauna and flora) baseline assessment for the proposed TIKZN Eco Park located in Pietermaritzburg, KwaZulu-Natal Province. The project involves three options for the development of a currently unused site in the city.

To determine the baseline ecological state of the area and to present a detailed description of the receiving environment, both a desktop assessment as well as a field survey were conducted during May 2023. Furthermore, the desktop assessment and field survey both involved the detection, identification and description of any locally relevant sensitive receptors and habitats, and the manner in which these sensitive features may be affected by the proposed development was also investigated.

This assessment was conducted in accordance with the amendments to the Environmental Impact Assessment Regulations, 2014 (No. 326, 7 April 2017) of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998). The approach has taken cognisance of the recently published Government Notice 320 in terms of NEMA dated 20 March 2020 as well as the Government Notice 1150 in terms of NEMA dated 30 October 2020: "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation". The National Web based Environmental Screening Tool has characterised the terrestrial biodiversity theme for the area as 'Very High' sensitivity (National Environmental Screening Tool, 2022).

The purpose of conducting the specialist study is to provide relevant input into the Environmental Authorisation application process, with a focus on the proposed activities and their impacts associated with the project. This report, after taking into consideration the findings and recommendations provided by the specialist herein, should inform and guide the Registered Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making as to the ecological viability of the proposed project.

1.2 Project Description

The project comprises three separate plans for the area, these are shown in Figure 1-1, Figure 1-2 and Figure 1-3.

A map of the project area in relation to the local region is presented in Figure 1-4, and a map of the project area with the proposed site layout is presented in Figure 1-5.

The project area is referred to as the Project Area of Influence (PAOI) which is defined as the boundary of the site.

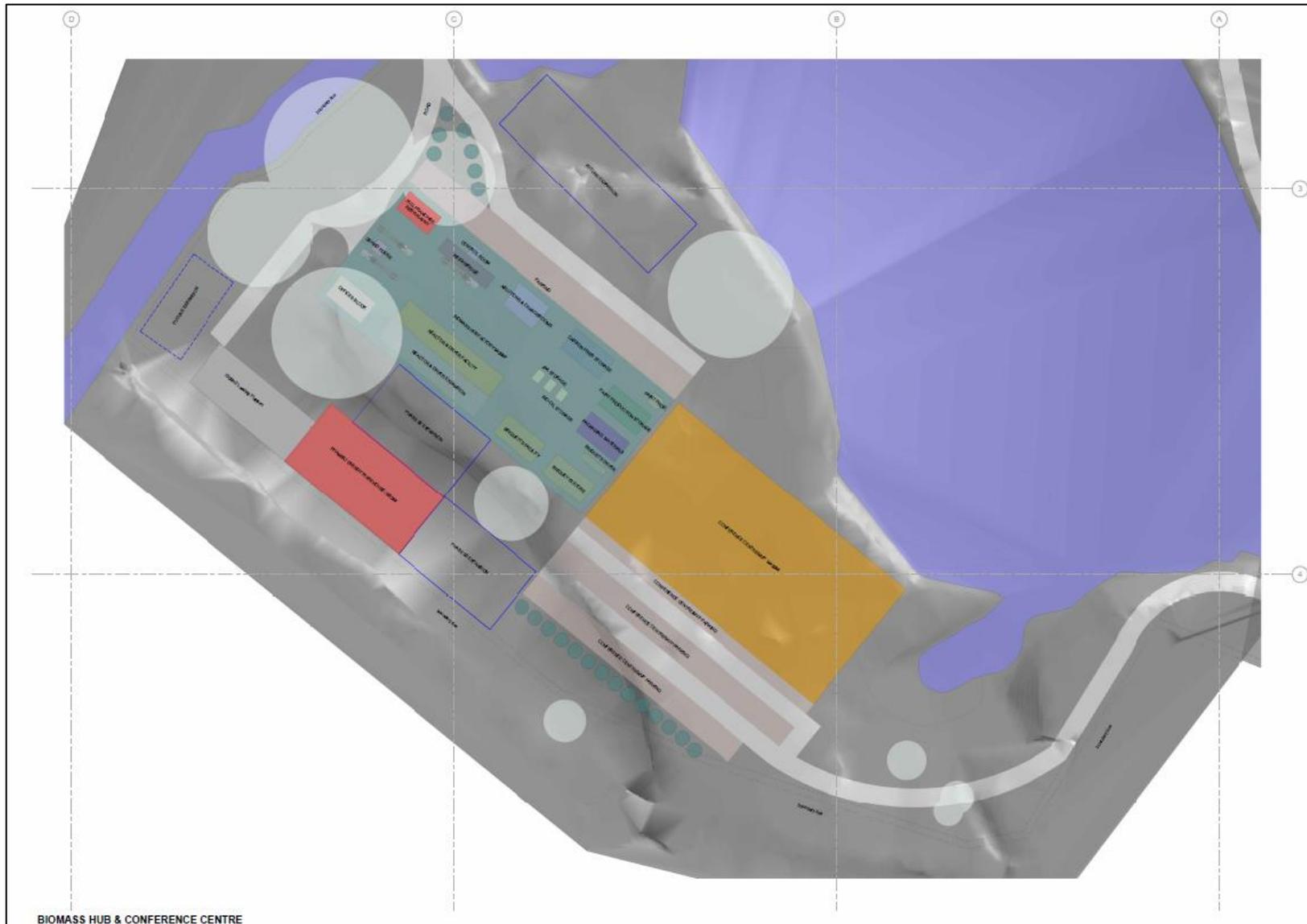


Figure 1-1 Illustration of one of the three options for the development of the site: Biomass hub and conference centre.

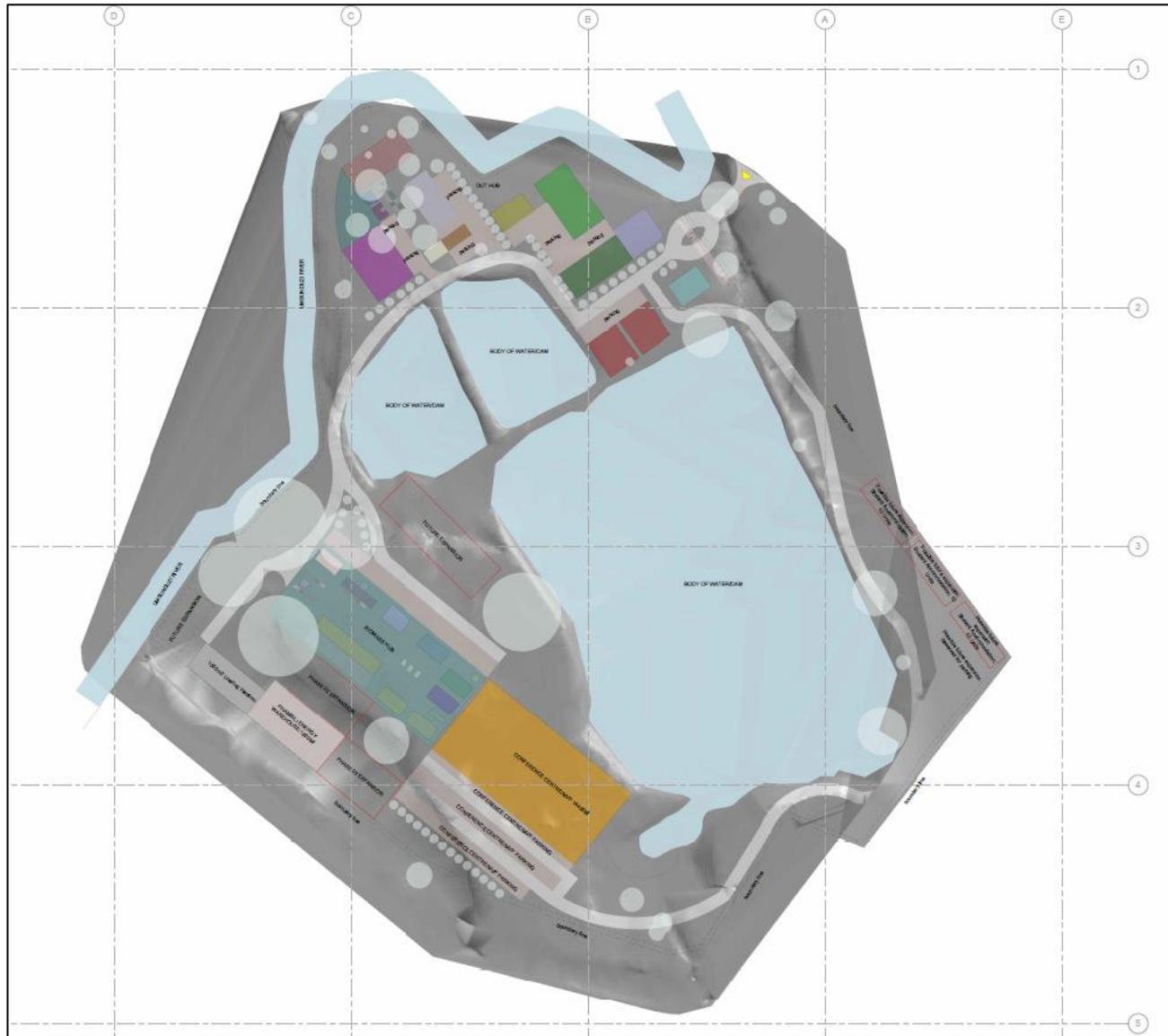


Figure 1-3 *Illustration of one of the three options for the development of the site: Alternative Site Plan.*

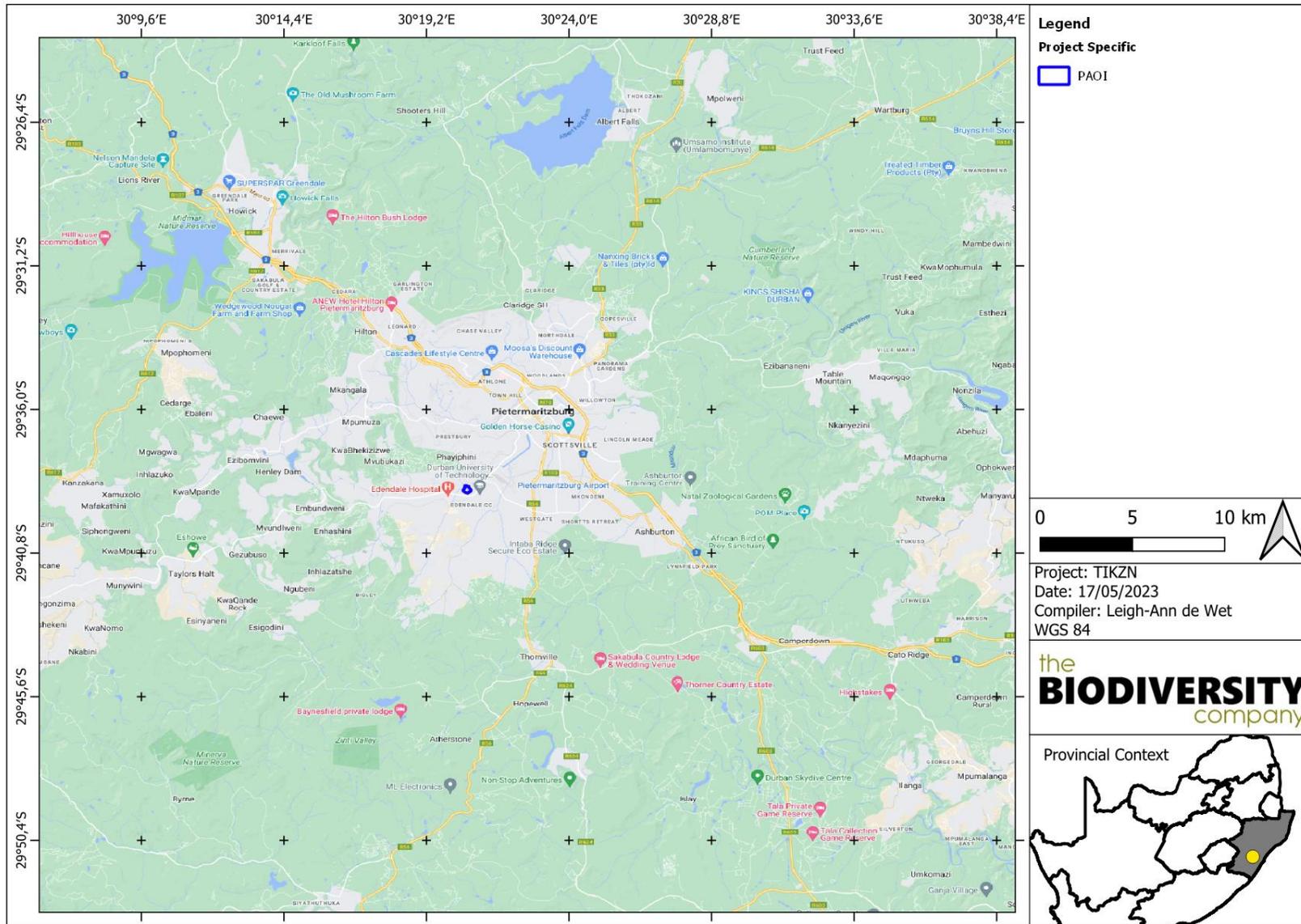


Figure 1-4 Map illustrating the locality of the project area



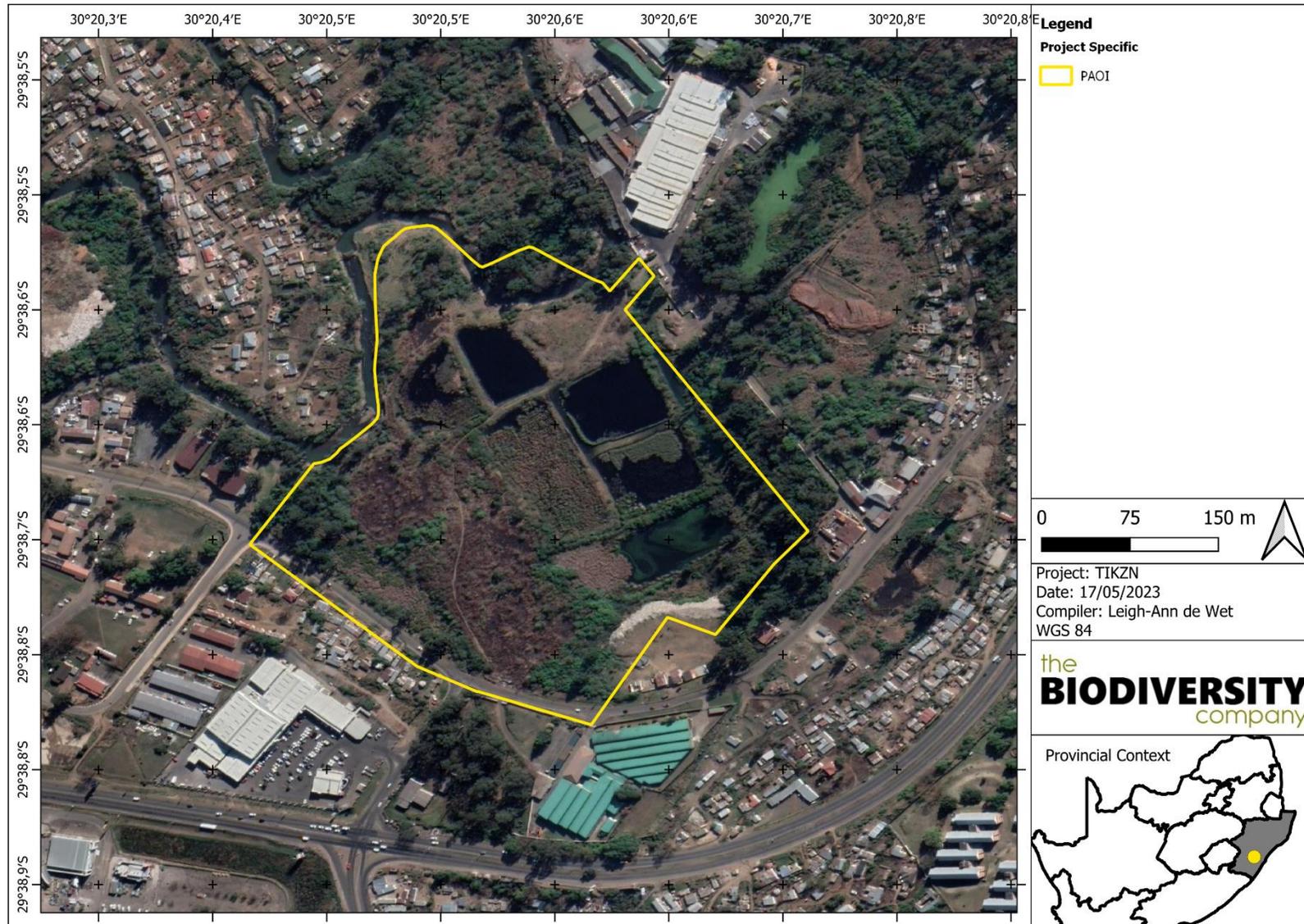


Figure 1-5 Map illustrating the project area

1.3 Report Legislative Framework

In line with the protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity, as per Government Notice 320 published in terms of NEMA, dated 20 March 2020: “Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation” – section 3, subsection 1:

- An applicant intending to undertake an activity identified in the scope of the protocol, on a site identified on the screening tool as being of 'Very High' sensitivity for terrestrial biodiversity, must submit a Terrestrial Biodiversity Specialist Assessment; however
- Where the information gathered from the site sensitivity verification differs from the designation of 'Very High' terrestrial biodiversity sensitivity on the screening tool and it is found to be of a 'Low' sensitivity, then a Terrestrial Biodiversity Compliance Statement must be submitted.

The information obtained from a site sensitivity verification, which involved both a desktop assessment as well as a field survey, confirmed that the proposed footprint area is of a 'Low' sensitivity. Therefore, this report constitutes a Terrestrial Biodiversity Compliance Statement.

As per sections 2 and 3 of the protocol discussed above, a Terrestrial Biodiversity Compliance Statement must contain the information as presented in Table 1-1 below.

Table 1-1 *Terrestrial Biodiversity Compliance Statement information requirements as per the relevant protocol, including the location of the information within this report*

Information to be Included (as per GN 320, 20 March 2020)	Report Section
Methodology used to undertake the site assessment and survey, and prepare the compliance statement, including relevant equipment and modelling used	2
Description of the assumptions and any uncertainties or gaps in knowledge or data	1.4
A baseline profile description of biodiversity and ecosystems of the site	3.1.1
Site sensitivity verification: Desktop Analysis using satellite imagery and available information	3.2.1
A statement on the duration, date and season of the site inspection	2.2
Site sensitivity verification: Onsite inspection, include a description of current land use and vegetation found on-site	3.2
Site sensitivity verification: Photographs/evidence of environmental sensitivity	3.2
Screening tool confirmation/dispute: The assessment must verify the “low” sensitivity of the site, in terms of plant, animal, and terrestrial biodiversity themes	3.2.1
Proposed impact management outcomes or monitoring requirements for inclusion in the EMPr	4
Indicate whether or not the proposed development will have any impact on the terrestrial environment, animals and/or plants	5
A signed statement of independence by the specialist	7.1
Specialist details, including a CV	7.2

A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

1.4 Assumptions and Limitations

The following assumptions and limitations are applicable for this assessment:

- It is assumed that all information received from the client and landowner is accurate;

- All datasets accessed and utilised for this assessment are considered to be representative of the most recent and suitable data for the intended purposes;
- The assessment area (project area) was based on the footprint areas as provided by the client, and any alterations to the area and/or missing GIS information pertaining to the assessment area would have affected the area surveyed and hence the results of this assessment;
- The project description was based on information provided by the client, and any alterations to the area and/or missing data pertaining to the development would have affected the area surveyed and hence the results of this assessment;
- The area was surveyed during a single site visit and therefore this assessment does not consider temporal trends (note that the data collected is considered sufficient to derive a meaningful baseline);
- The single site visit was conducted during the dry season, and this means that certain flora and fauna would not have been present or observable due to seasonal constraints however most species have likely been recorded;
- Whilst every effort was made to cover as much of the project area as possible, representative sampling is completed, and by its nature it is possible that some plant and animal species that are present within the project area were not recorded during the field investigations; and
- The GPS used in the assessment has an accuracy of 5 m and consequently any spatial features may be offset by up to 5 m.

2 Methods

2.1 Desktop Assessments

The desktop assessment was principally undertaken using a Geographic Information System (GIS) to access the latest available spatial datasets to determine if any are applicable to the site. These datasets and their respective dates of publishing are provided below.

Existing ecologically relevant data layers were incorporated into GIS software to establish how the proposed project might interact with any ecologically important entities. Emphasis was placed around the following spatial datasets:

- KZN Conservation Plan (Ezemvelo KZN Wildlife, 2016);
- 2018 National Biodiversity Assessment (NBA, 2018) (Skowno *et al.*, 2019);
- Vegetation Map of South Africa, Lesotho and Swaziland (SANBI, 2018);
- South Africa Protected and Conservation Areas Databases, 2022 (DFFE, 2022 & DFFE, 2022a);
- National Protected Areas Expansion Strategy, 2016 (DEA, 2016);
- Important Bird and Biodiversity Areas, 2015 (Marnewick *et al.*, 2015);
- South African Inventory of Inland Aquatic Ecosystems (SAIIAE), NBA 2018 Rivers and Wetlands (Awuah, 2018 & Van Deventer *et al.*, 2019);
- National Freshwater Priority Areas, Rivers and Wetlands, 2011 (Nel, 2011); and
- Strategic Water Source Areas, 2021 (Lötter & Le Maitre, 2021).

2.2 Biodiversity Field Survey

A single season field survey was undertaken on the 12th of May 2023 for 6 hours, which constitutes a dry season survey, to determine the presence of any local SCC and to achieve the delineation of local habitat types and their associated sensitivities. Effort was made to cover all the different habitat types within the project area, within the limits of time and access. This site visit is considered sufficient for the project.

The points and tracks of the site visit are indicated in Figure 2-1.

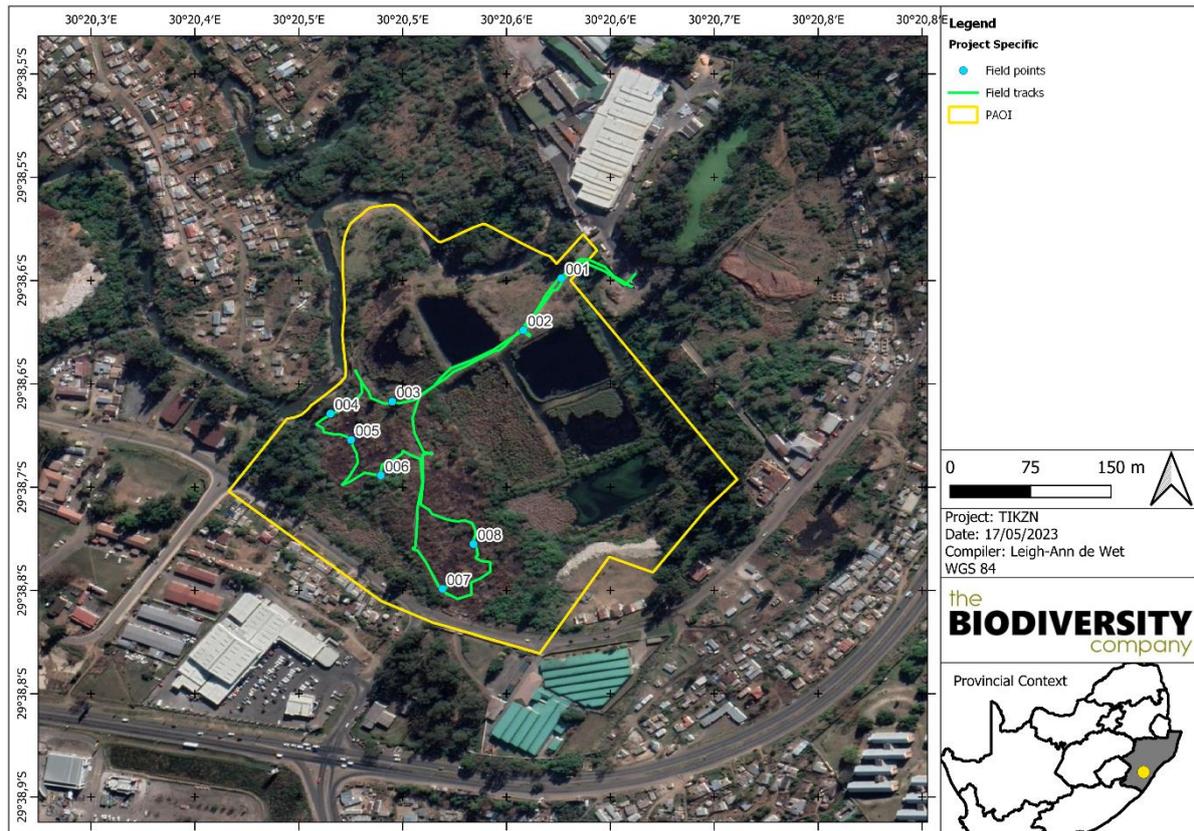


Figure 2-1 Map illustrating the location of the survey field tracks

2.3 Terrestrial Site Ecological Importance

The different habitat types within the project area were delineated and identified based on observations made during the field survey, and information from available satellite imagery. These habitat types were assigned Ecological Importance (EI) categories based on their ecological integrity, conservation value, the presence of SCC and their ecosystem processes.

Site Ecological Importance (SEI) is a function of the Biodiversity Importance (BI) of the receptor (e.g., SCC, the vegetation/fauna community or habitat type present in the project area) and Receptor Resilience (RR) (its resilience to impacts).

BI is a function of Conservation Importance (CI) and the Functional Integrity (FI) of the receptor. The criteria for the CI and FI ratings are provided in Table 2-1 and Table 2-2 respectively.

Table 2-1 Summary of Conservation Importance (CI) criteria

Conservation Importance	Fulfilling Criteria
Very High	Confirmed or highly likely occurrence of Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Extremely Rare or CR species that have a global extent of occurrence (EOO) of < 10 km ² . Any area of natural habitat of a CR ecosystem type or large area (> 0.1% of the total ecosystem type extent) of natural habitat of an EN ecosystem type. Globally significant populations of congregatory species (> 10% of global population).
High	Confirmed or highly likely occurrence of CR, EN, VU species that have a global EOO of > 10 km ² . IUCN threatened species (CR, EN, VU) must be listed under any criterion other than A. If listed as threatened only under Criterion A, include if there are less than 10 locations or < 10 000 mature individuals remaining. Small area (> 0.01% but < 0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type or large area (> 0.1%) of natural habitat of VU ecosystem type. Presence of Rare species. Globally significant populations of congregatory species (> 1% but < 10% of global population).
Medium	Confirmed or highly likely occurrence of populations of Near Threatened (NT) species, threatened species (CR, EN, VU) listed under Criterion A only and which have more than 10 locations or more than 10 000 mature individuals. Any area of natural habitat of threatened ecosystem type with status of VU. Presence of range-restricted species. > 50% of receptor contains natural habitat with potential to support SCC.
Low	No confirmed or highly likely populations of SCC. No confirmed or highly likely populations of range-restricted species. < 50% of receptor contains natural habitat with limited potential to support SCC.
Very Low	No confirmed and highly unlikely populations of SCC. No confirmed and highly unlikely populations of range-restricted species. No natural habitat remaining.

Table 2-2 Summary of Functional Integrity (FI) criteria

Functional Integrity	Fulfilling Criteria
Very High	Very large (> 100 ha) intact area for any conservation status of ecosystem type or > 5 ha for CR ecosystem types. High habitat connectivity serving as functional ecological corridors, limited road network between intact habitat patches. No or minimal current negative ecological impacts, with no signs of major past disturbance.
High	Large (> 20 ha but < 100 ha) intact area for any conservation status of ecosystem type or > 10 ha for EN ecosystem types. Good habitat connectivity, with potentially functional ecological corridors and a regularly used road network between intact habitat patches. Only minor current negative ecological impacts, with no signs of major past disturbance and good rehabilitation potential.
Medium	Medium (> 5 ha but < 20 ha) semi-intact area for any conservation status of ecosystem type or > 20 ha for VU ecosystem types. Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches. Mostly minor current negative ecological impacts, with some major impacts and a few signs of minor past disturbance. Moderate rehabilitation potential.
Low	Small (> 1 ha but < 5 ha) area. Almost no habitat connectivity but migrations still possible across some modified or degraded natural habitat and a very busy used road network surrounds the area. Low rehabilitation potential. Several minor and major current negative ecological impacts.
Very Low	Very small (< 1 ha) area. No habitat connectivity except for flying species or flora with wind-dispersed seeds. Several major current negative ecological impacts.

BI can be derived from a simple matrix of CI and FI as provided in

Table 2-3.

Table 2-3 Matrix used to derive Biodiversity Importance (BI) from Functional Integrity (FI) and Conservation Importance (CI)

Biodiversity Importance		Conservation Importance				
		Very high	High	Medium	Low	Very low
Functional Integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

The fulfilling criteria to evaluate RR are based on the estimated recovery time required to restore an appreciable portion of functionality to the receptor, as summarised in Table 2-4.

Table 2-4 Summary of Receptor Resilience (RR) criteria

Resilience	Fulfilling Criteria
Very High	Habitat that can recover rapidly (~ less than 5 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
High	Habitat that can recover relatively quickly (~ 5–10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
Medium	Will recover slowly (~ more than 10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
Low	Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~ less than 50% of the original species composition and functionality of the receptor functionality, or species that have a low likelihood of: (i) remaining at a site even when a disturbance or impact is occurring, or (ii) returning to a site once the disturbance or impact has been removed.
Very Low	Habitat that is unable to recover from major impacts, or species that are unlikely to: (i) remain at a site even when a disturbance or impact is occurring, or (ii) return to a site once the disturbance or impact has been removed.

After the determination of BI and RR, the SEI can be ascertained using the matrix as provided in

Table 2-5.

Table 2-5 Matrix used to derive Site Ecological Importance from Receptor Resilience (RR) and Biodiversity Importance (BI)

Site Ecological Importance		Biodiversity Importance				
		Very high	High	Medium	Low	Very low
Receptor Resilience	Very Low	Very high	Very high	High	Medium	Low
	Low	Very high	Very high	High	Medium	Very low
	Medium	Very high	High	Medium	Low	Very low
	High	High	Medium	Low	Very low	Very low
	Very High	Medium	Low	Very low	Very low	Very low

Interpretation of the SEI in the context of the proposed project is provided in Table 2-6.

Table 2-6 *Guideline for interpreting Site Ecological Importance in the context of proposed activities*

Site Ecological Importance	Interpretation in relation to proposed development activities
Very High	Avoidance mitigation – no destructive development activities should be considered. Offset mitigation not acceptable/not possible (i.e., last remaining populations of species, last remaining good condition patches of ecosystems/unique species assemblages). Destructive impacts for species/ecosystems where persistence target remains.
High	Avoidance mitigation wherever possible. Minimisation mitigation – changes to project infrastructure design to limit the amount of habitat impacted, limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities.
Very Low	Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

The SEI evaluated for each taxon can be combined into a single multi-taxon evaluation of SEI for the assessment area. Either a combination of the maximum SEI for each receptor should be applied, or the SEI may be evaluated only once per receptor but for all necessary taxa simultaneously. For the latter, justification of the SEI for each receptor is based on the criteria that conforms to the highest CI and FI, and the lowest RR across all taxa.

3 Results & Discussion

3.1 Desktop Assessments

3.1.1 Ecologically Important Landscape Features

Table 3-1 below has been produced as a result of the spatial data collected and analysed (as provided by various sources such as the national and provincial environmental authorities and SANBI). It presents a summative breakdown of the ecological boundaries considered and the associated relevance that each has to the region or project area. Where a feature is regarded as relevant it is considered an ecologically important landscape feature and discussed further as part of the sub-sections that follow.

Table 3-1 *Summary of the spatial relevance of the project area to local ecologically important landscape features*

Desktop Information Considered	Relevance	Reasoning
Provincial Conservation Plan	No	The project area is not located within a CBA or ESA
NBA 2018: Ecosystem Threat Status	Yes	Project area overlaps with a 'Vulnerable' ecosystem
NBA 2018: Ecosystem Protection Level	Yes	Project area overlaps with a 'Not Protected' ecosystem
Protected and Conservation Areas (SAPAD & SACAD)	No	The closest reserve is over 7 km away.
National Protected Areas Expansion Strategy (NPAES)	No	The project area does not fall within a 'Priority Focus Area'
Important Bird and Biodiversity Areas (IBA)	No	The project area is located over 8 km from the closest IBA
Strategic Water Source Areas	Yes	The project area is partially located within the Southern Drakensberg SWSA
National Freshwater Ecosystem Priority Areas	No	No FEPA systems occur within 500 m of the project area
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	Yes	A CR wetland and an EN river occur within the project area

3.2 Biodiversity Field Survey

The following sections discuss the results from the field survey that was conducted for the proposed project, which was undertaken on the 12th of May 2023. Each sample point is described in Table 3-2.

Table 3-2 Sensitivity summary of the habitat types delineated within the Project area of Influence

Site details	Description	SEI	Photographs
<p>Site reference: 001</p> <p>Date: 12/05/2023</p> <p>GSP coordinates: 29°38'34.7"S 30°20'36.7"E</p>	<p>Well-used pathway in <i>Sporobolus pyramidalis</i> dominated grassy area comprising >60% alien invasive shrub and tree species including <i>Senna didymobotrya</i> and <i>Solanum mauritianum</i>. Indigenous species limited. Considered modified.</p>	Low	
<p>Site reference: 002</p> <p>Date: 12/05/2023</p> <p>GSP coordinates: 29°38'36.5"S 30°20'35.4"E</p>	<p>Well-used pathway in <i>Sporobolus pyramidalis</i> dominated grassy area comprising >60% alien invasive shrub and tree species including <i>Senna didymobotrya</i> and <i>Solanum mauritianum</i>. Indigenous species limited. Considered Modified.</p>	Low	
<p>Site reference: 003</p> <p>Date: 12/05/2023</p> <p>GSP coordinates: 29°38'39.0"S 30°20'30.8"E</p>	<p>Severely degraded area in <i>Sporobolus pyramidalis</i> dominated grassy area comprising >70% alien invasive shrub and tree species including <i>Senna didymobotrya</i> and <i>Solanum mauritianum</i>. Indigenous species limited. Considered Severely Degraded.</p>	Low	

<p>Site GPS reference: 004</p> <p>Date: 12/05/2023</p> <p>GSP coordinates:</p> <p>29°38'39.4"S</p> <p>30°20'28.7"E</p>	<p>Area dominated by invasive shrub and tree species including, but not limited to <i>Senna didymobotrya</i>, <i>Solanum mauritianum</i> and <i>Melia azedarach</i>. Limited indigenous grassy layer, considered Modified.</p>	<p>Low</p>		
<p>Site GPS reference: 005</p> <p>Date: 12/05/2023</p> <p>GSP coordinates:</p> <p>29°38'40.4"S</p> <p>30°20'29.4"E</p>	<p>Severely degraded thornveld with dominant indigenous tree <i>Vachellia sieberiana</i>, dominant species (>60%) alien shrubs and trees including <i>Senna didymobotrya</i>, <i>Solanum mauritianum</i>, <i>Melia azedarach</i> and <i>Acacia mearnsii</i>. Some indigenous grass species, somineted by <i>Sporobolus pyramidalis</i>. Considered Severely Degraded.</p>	<p>Low</p>		
<p>Site GPS reference: 006</p> <p>Date: 12/05/2023</p> <p>GSP coordinates:</p> <p>29°38'41.6"S</p> <p>30°20'30.4"E</p>	<p>Shrubby area dominated by <i>Acacia mearnsii</i>, <i>Melia azedarach</i> and <i>Tecoma stans</i>. Large amounts of dumped building rubble. Considered Modified.</p>	<p>Low</p>		

<p>Site reference: 007</p> <p>GPS</p> <p>Date: 12/05/2023</p> <p>GSP coordinates:</p> <p>29°38'45.5"S</p> <p>30°20'32.6"E</p>	<p>Well-used pathway in <i>Sporobolus pyramidalis</i> dominated grassy area comprising >60% alien invasive shrub and tree species including <i>Senna didymobotrya</i> and <i>Solanum mauritianum</i>. Indigenous species limited. Considered Modified.</p>	<p>Low</p>		
<p>Site reference: 008</p> <p>GPS</p> <p>Date: 12/05/2023</p> <p>GSP coordinates:</p> <p>29°38'44.0"S</p> <p>30°20'33.7"E</p>	<p>Severely degraded area in <i>Sporobolus pyramidalis</i> dominated grassy area comprising >70% alien invasive shrub and tree species including <i>Senna didymobotrya</i>, <i>Tecoma stans</i> and <i>Solanum mauritianum</i>. Indigenous species limited. Considered Severely Degraded.</p>	<p>Low</p>		

3.2.1 Screening Tool Comparison

The allocated sensitivities for each of the relevant themes are either disputed or validated for the overall Project Area in Table 3-3 below. A summative explanation for each result is provided as relevant. The specialist-assigned sensitivity ratings are based largely on the SEI process followed in the previous section, and consideration is given to any observed or likely presence of SCC or protected species. The screening tool terrestrial theme sensitivity can be seen in Figure 3-1 below.

Table 3-3 Summary of the screening tool vs. specialist assigned sensitivities

Screening Tool Theme	Screening Tool	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Animal Theme	High	Low	Disputed – Habitat is disturbed and secondary or modified in nature with high human presence (including hunting dogs). No SCC were recorded, nor expected.
Plant Theme	Medium	Low	Disputed – Habitat is disturbed and secondary or modified in nature. No SCC were recorded, nor expected.
Terrestrial Theme	Very High	Low	Disputed – Habitat is severely degraded or modified in nature.

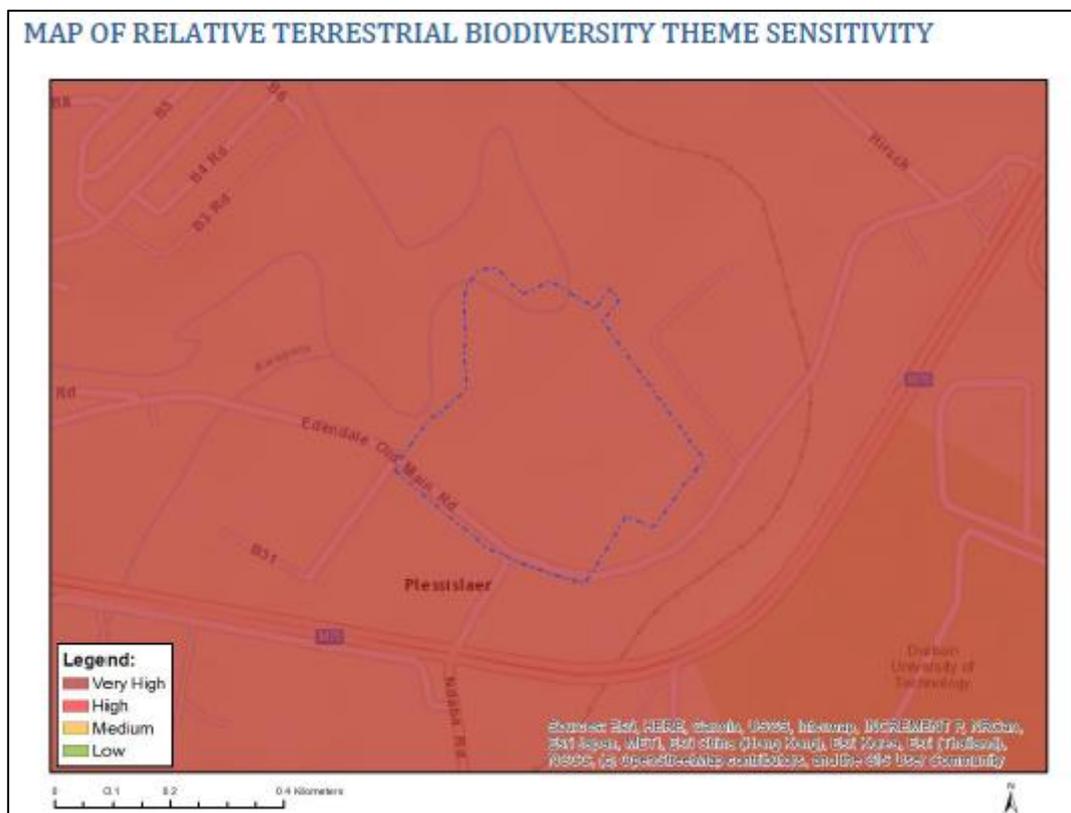


Figure 3-1 Terrestrial Biodiversity Theme Sensitivity for the Project Area (National Environmental Screening Tool, 2022)

4 Impact Management and Mitigation Plan

The aim of the management outcomes is to present mitigation actions in such a way that they can be incorporated into the Environmental Management Programme (EMPr), and possible biodiversity management programme, for the project, which should in turn allow for a more successful implementation and auditing of the mitigations and monitoring guidelines. Table 4-1 presents the recommended mitigation measures and the respective time frames, targets, and performance indicators relative to the terrestrial assessment.

The focus of mitigation measures is to reduce the significance of the likely impacts associated with the development, and thereby:

- Prevent the further loss and fragmentation of vegetation communities within the CBA and Nature Reserve areas in the vicinity of the project area;
- Reduce the negative fragmentation effects of the development and enable the safe movement of fauna species;
- Prevent the direct and indirect loss and disturbance of flora and fauna species and communities; and
- Adequately follow the guidelines for interpreting the Site Ecological Importance ratings assigned to the project area (see Table 2-6).

Table 4-1 Project specific mitigation measures including requirements for timeframes, roles and responsibilities

Management outcome: Vegetation and Habitats				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Laydown and construction preparation activities (such as cement mixing, temporary toilets, etc.) must be limited to already transformed areas and should take up the smallest footprint possible.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
It is recommended that areas to be developed/disturbed be specifically demarcated so that during the construction/activity phase, only the demarcated areas be impacted upon.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should not be fragmented or disturbed further.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
All vehicles and personnel must make use of existing roads and walking paths, especially construction/operational vehicles.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
The clearing of vegetation must be minimised where possible. All activities must be restricted to within the authorised areas. It is recommended that areas to be developed be specifically and responsibly demarcated so that during the construction phase only the demarcated areas be impacted upon.	Life of operation	Project manager, Environmental Officer	Areas of indigenous vegetation	Ongoing
Any observed SCC flora or protected plants must be clearly demarcated prior to the commencement of site clearing. If construction activities are likely to affect any SCC or protected plants these individuals must be relocated as part of a plant rescue and protection plan, and a permit must be obtained before doing so.	Planning Phase	Environmental Officer	Protected plants and SCC	During phase
Existing access routes, especially roads, must be made use of.	Construction/Operational Phase	Environmental Officer & Design Engineer	Roads and paths used	Ongoing
Any materials may not be stored for extended periods of time and must be removed from the project area once the construction phase has been concluded. No permanent construction phase structures should be permitted. Construction buildings should preferably be prefabricated or constructed of re-usable/recyclable materials. No storage of vehicles or equipment will be allowed outside of the designated laydown areas.	Construction and Operational Phase	Environmental Officer, Design Engineer, and Contractor	Laydown areas	Ongoing

<p>Areas that are denuded during construction need to be re-vegetated with indigenous vegetation according to a habitat rehabilitation plan, to prevent erosion during flood and wind events and to promote the regeneration of functional habitat. This will also reduce the likelihood of encroachment by invasive alien plant species. All grazing mammals must be kept out of the areas that have recently been re-planted.</p>	Operational phase	Environmental Officer & Contractor	Assess the state of rehabilitation and encroachment of alien vegetation	Quarterly for up to two years after the closure
<p>A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site.</p> <ul style="list-style-type: none"> • Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use. • No servicing of equipment on site unless necessary. • All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers. • Appropriately contain any generator diesel storage tanks, machinery spills (e.g., accidental spills of hydrocarbons oils, diesel etc.) in such a way as to prevent them from leaking and entering the environment. • Construction activities and vehicles could cause spillages of lubricants, fuels and waste material negatively affecting the functioning of the ecosystem. • All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas outside of the project area. 	Life of operation	Environmental Officer & Contractor	Spill events, Vehicles dripping.	Ongoing
<p>It must be made an offence for any staff to take/ bring any plant species into/out of any portion of the project area with the exception of rehabilitation purposes. No plant species whether indigenous or exotic should be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.</p>	Life of operation	Project manager, Environmental Officer	Any instances	Ongoing
<p>A fire management plan needs to be compiled and implemented to restrict the impact fire would have on the surrounding areas.</p>	Life of operation	Environmental Officer & Contractor	Fire Management	During Phase
<p>All construction waste must be removed from site at the closure of the construction phase.</p>	Construction phase	Environmental Officer & Contractor	Construction waste	During Phase
Management outcome: Fauna				
Impact Management Actions	Implementation		Monitoring	



	Phase	Responsible Party	Aspect	Frequency
A qualified environmental control officer must be on site when activities begin. A site walk through is recommended by a suitably qualified ecologist prior to any activities taking place and any SSC or protected species should be noted. In situations where these species are observed and must be removed, the proponent may only do so after the required permission/permits have been obtained in accordance with national and provincial legislation. In the abovementioned situation the development and implementation of a search, rescue and recovery program is suggested for the protection of these species. Should animals not move out of the area on their own relevant specialists must be contacted to advise on how the species can be relocated.	Construction Phase	Environmental Officer, Contractor	Presence of any floral or faunal SCC	During phase
Clearing and disturbance activities must be conducted in a progressive linear manner, always outwards and away from the centre of the project area and over several days, so as to provide an easy escape route for all small mammals and herpetofauna.	Construction Phase	Environmental Officer & Contractor	Progressive land clearing operations and the movement of fauna	Ongoing
The areas to be disturbed must be specifically and responsibly demarcated to prevent the movement of staff or any individual into the surrounding environments, signs must be put up to enforce this.	Construction/Operational Phase	Project manager, Environmental Officer	Infringement into these areas	Ongoing
The duration of the activities should be minimised to as short a term as possible, to reduce the period of disturbance on fauna.	Construction	Project manager, Environmental Officer & Design Engineer	Construction/Closure Phase	Ongoing
Noise must be kept to an absolute minimum during the evenings and at night to minimize all possible disturbances to reptile species and nocturnal mammals.	Construction/Operational Phase	Environmental Officer	Noise levels	Ongoing
No trapping, killing, or poisoning of any wildlife is to be allowed and Signs must be put up to enforce this. Monitoring must take place in this regard.	Life of operation	Environmental Officer	Evidence of trapping etc	Ongoing
Outside lighting should be designed and limited to minimize impacts on fauna. All outside lighting should be directed away from any sensitive areas. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (green/red) lights should be used wherever possible.	Construction/Operational Phase	Project manager, Environmental Officer & Design Engineer	Light pollution and period of light	Ongoing

<p>All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. Speed limits must be enforced to ensure that road killings and erosion is limited.</p>	Life of operation	Health and Safety Officer	Compliance to the training	Ongoing
<p>Schedule activities and operations during least sensitive periods, to avoid migration, nesting, and breeding seasons.</p>	Life of operation	Project manager, Environmental Officer & Design Engineer	Activities should take place during the day	Ongoing
<p>Any holes/deep excavations must be dug in a progressive manner and shouldn't be left open overnight. Should any holes remain open overnight they must be properly covered temporarily to ensure that no small fauna species fall in. Holes must be subsequently inspected for fauna prior to backfilling.</p>	Planning and Construction	Environmental Officer & Contractor, Engineer	Presence of trapped animals and open holes	Ongoing
<p>Fencing mitigations:</p> <ul style="list-style-type: none"> • Top 2 strands must be smooth wire • Routinely re-tension loose wires • Minimum 30cm between wires <p>Place markers on fences.</p>	Planning, construction, and operation	Environmental Officer & Contractor, Engineer	Fence construction. Limiting risk to large bird species and mammals	Ongoing
<p>If fencing is required: wildlife-permeable fencing with holes large enough for mongoose and other smaller mammals should be installed, the holes must not be placed in the fence where it is next to a major road as this will increase road killings in the area.</p>	Planning and construction	Environmental Officer & Contractor, Engineer	Fauna movement corridor	Ongoing
<p>Use environmentally friendly cleaning and dust suppressant products.</p>	Construction and operation	Environmental Officer & Contractor, Engineer	Presence of chemicals in and around the project area	Ongoing
<p>Once the development layout has been confirmed, the footprint area must be fenced off appropriately in segments pre-construction to allow animals to move or be moved out of these areas before breaking ground activities occur. Construction activities must take place systemically and the perimeter fence should not be completed if required (i.e., leaving sections unfenced to allow fauna to escape) until systematic clearing is completed. Drilling etc. should start one side of the site and progress towards the section of the site where fences are incomplete (away from the center of the PAOI).</p>	Planning/Construction Phase	Environmental Officer & Design Engineer	Areas not to be developed and construction direction	Ongoing
<p>The wetland areas must be maintained as suitable habitat for waterbirds recorded from the site. Under no circumstances should these be polluted or drained.</p>	Planning/Construction Phase	Environmental Officer & Design Engineer	Areas not to be developed and construction direction	Ongoing

Management outcome: Alien species				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
An Invasive Alien Plant Management Plan must be compiled and implemented. This should regularly be updated to reflect the annual changed in IAP composition.	Life of operation	Project manager, Environmental Officer & Contractor	Manage and assess presence and encroachment of alien vegetation	Twice a year
The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas. Footprints of the roads must be kept to prescribed widths.	Construction/Operational Phase	Project manager, Environmental Officer & Contractor	Footprint Area	Life of operation
A pest control plan must be put in place and implemented; it is imperative that poisons not be used to control pests.	Life of operation	Environmental Officer & Health and Safety Officer	Evidence or presence of pests	Life of operation
Management outcome: Dust				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Dust-reducing mitigation measures must be put in place and must be strictly adhered to. This includes the wetting of exposed soft soil surfaces.	Construction phase	Contractor	Dustfall	Dust monitoring program.
No non-environmentally friendly suppressants may be used as this could result in the pollution of water sources.				
Management outcome: Waste management				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Waste management must be a priority and all waste must be collected and stored effectively and responsibly according to a site-specific waste management plan. Dangerous waste such as metal wires and glass must only be stored in fully sealed and secure containers, before being moved off site as soon as possible.	Life of operation	Environmental Officer & Contractor	Waste Removal	Weekly
Litter, spills, fuels, chemical and human waste in and around the project area must be minimised and controlled according to the waste management plan.	Construction/Closure Phase	Environmental Officer & Health and Safety Officer	Presence of Waste	Daily



Cement mixing may not be performed on the ground. It is recommended that only closed side drum or pan type concrete mixers be utilised. Any spills must be immediately contained and isolated from the natural environment, before being removed from site.	Construction Phase	Environmental Officer & Contractor	Cement mixing and spills	Every occurrence
A minimum of one toilet must be provided per 10 persons. Portable toilets must be pumped dry to ensure the system does not degrade over time and spill into the surrounding area.	Life of operation	Environmental Officer & Health and Safety Officer	Number of toilets per staff member. Waste levels	Daily
The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected shall be disposed of at a licensed disposal facility within every 10 days at least.	Life of operation	Environmental Officer & Health and Safety Officer	Availability of bins and the collection of the waste	Ongoing
Where a registered disposal facility is not available close to the project area, the Contractor shall provide a method statement with regards to waste management. Under no circumstances may domestic waste be burned on site or buried on open pits.	Life of operation	Environmental Officer, Contractor & Health and Safety Officer	Collection/handling of the waste	Ongoing
Refuse bins will be responsibly emptied and secured. Temporary storage of domestic waste shall be in covered and secured waste skips. Maximum domestic waste storage period will be 10 days.	Life of operation	Environmental Officer, Contractor & Health and Safety Officer	Management of bins and collection of waste	Ongoing, every 10 days

Management outcome: Environmental awareness training

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
<p>All personnel and contractors are to undergo Environmental Awareness Training. A signed register of attendance must be kept for proof.</p> <p>Discussions are required on sensitive environmental receptors within the project area to inform contractors and site staff of the presence of protected species, their identification, conservation status and importance, biology, habitat requirements and management requirements in line with the Environmental Authorisation and within the EMPr.</p> <p>Contractors and employees must all undergo the induction and must be made aware of any sensitive areas to be avoided.</p>	Pre-construction phase	Health and Safety Officer, Environmental Officer	Compliance to the training	Ongoing

Management outcome: Erosion

Impact Management Actions	Implementation	Monitoring
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	Phase	Responsible Party	Aspect	Frequency
Speed limits must be put in place to reduce erosion. Soil surfaces must be wetted as necessary to reduce the dust generated by the project activities. Speed bumps and signs must be erected to enforce slow speeds.	Life of operation	Project manager, Environmental Officer	Water Runoff from road surfaces	Ongoing
Only existing access routes and walking paths may be made use of.	Life of operation	Project manager, Environmental Officer	Routes used within the area	Ongoing
Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events etc.	Life of operation	Project manager, Environmental Officer	Re-establishment of indigenous vegetation	Progressively
A stormwater management plan must be compiled and implemented.	Life of operation	Project manager, Environmental Officer	Management plan	Before construction phase: Ongoing

5 Conclusion and Impact Statement

The project area comprises mainly transformed areas with limited areas of indigenous degraded vegetation. It supports limited indigenous fauna and flora species, with waterbird species a notable faunal occurrence. This project area is of unsubstantial size (<15 ha); however, it should be noted that the project area falls within a Vulnerable Ecosystem, and could provide a valuable corridor for species of fauna moving across the landscape. Therefore, it is important that the management outcomes presented above be adhered to in order to properly mitigate the negative environmental impacts that will stem from the project activities, including obtaining the relevant permits for removal of any protected flora (though none is expected).

Completion of the terrestrial biodiversity assessment led to a disputing of the 'Very High' classification for the terrestrial biodiversity theme sensitivity as allocated by the National Environmental Screening Tool. The project area is instead assigned an overall sensitivity of 'Low' due to the degraded and modified state of the site and the dominance of Alien Invasive Plant species.

5.1 Impact Statement

It is the opinion of the specialists that the project may be favourably considered, provided that the mitigation measures presented in this report be implemented, along with the recommendations below. The location and size of the ecosystem means that it is unlikely that any functional habitat or SCCs will be lost as a result of the impacts arising from the proposed activities.

5.2 Specialist Recommendations

The project area occurs within a Vulnerable Ecosystem. The site is largely disturbed and modified with limited areas of natural habitat remaining that are degraded in nature. Therefore, it is important to consider that undeveloped portions of land can still contribute to land management objectives and protection targets to some degree. It is recommended that care be taken during construction to adhere to mitigation measures. All three layout options may be considered provided all wetland and river areas and associated buffers are adhered to (as per the wetland report, TBC 2023), and these buffer areas managed for conservation including the control of Alien Invasive Plant species.

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7 Appendix Items

7.1 Appendix B: Specialist Declarations

DECLARATION

I, Leigh-Ann de Wet, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.



Leigh-Ann de Wet

Environmental Consultant

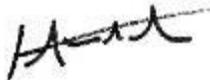
The Biodiversity Company

December 2022

DECLARATION

I, Andrew Husted, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.



Andrew Husted

Terrestrial Ecologist

The Biodiversity Company

December 2022

7.2 Appendix C: Specialist CVs

Leigh-Ann de Wet

M.Sc Botany (*Pr Sci Nat*)

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Identity Number: 8209010127081

Date of birth: 1 September 1982



Profile Summary

Working experience throughout South Africa, Southern Africa West and Central Africa and also Madagascar.

Specialist experience in exploration, mining, engineering, hydropower, private sector and renewable energy.

Experience with project management for national and international biodiversity projects.

Experience with IFC Performance Standards, Critical Habitat and High Conservation Value Assessments. Experience in numerous vegetation and habitat types throughout Africa,

Specialist expertise includes botany, forest ecology, avifauna and terrestrial fauna. Methodology development, conservation management and terrestrial monitoring.

Areas of Interest

Forest ecology and ecosystem functionality.

Ecology and plant identification.

Field methodology.

Publication of scientific journals and articles.

Key Experience

- Familiar with World Bank, Equator Principles and the International Finance Corporation requirements.
- Familiar with High Conservation Value assessments as per ProForest guidelines.
- Conservation Management Plans.
- Flora assessments.
- Avifauna assessments.
- Terrestrial fauna assessments.
- Monitoring.
- Ecosystem services
- Rehabilitation Plans.
- Alien Invasive Plant Management Plans.
- Permitting.

Country Experience

Mozambique,
 Malawi,
 Zambia,
 Madagascar,
 Liberia,
 Guinea'
 Democratic Republic of the Congo,
 South Africa

Nationality

South African

Languages

English – Proficient

Afrikaans – Conversational

Zulu - Basic

Qualifications

- MSc (Rhodes University) – Botany.
- BSc Honours (Rhodes University) – Botany
- BSc Natural Science (Botany and Entomology)
- Pr Sci Nat (400233/12)
- Certificate of Competence: UFS Introduction to wetland delineation.
- Certificate of Competence: UFS Introduction to wetland law
- Certificate of competence: Africa Land Use Training Grass Identification (long and short course)
- Certificate of Competence: ASI Snake Awareness, first aid for snake bite and venomous snake handling.

SELECTED PROJECT EXPERIENCE

Project Name: The Environmental Impact Assessment for the Karpowership Project including ships, and associated terrestrial infrastructure in Richards Bay, Coega and Saldanha Bay, South Africa.

Personal position / role on project: Specialist Terrestrial Ecologist and Avifauna specialist.

Location: South Africa (including KZN, Eastern and Western Cape) (2021).

Main project features: To determine the current status of the avifauna and terrestrial biodiversity.

Project Name: A biodiversity baseline and impact assessment for the proposed Siguri Gold Mine Project, in Kankan Province, Guinea.

Personal position / role on project: Botanist

Location: Guinea

Main project features: To conduct a dual season ecological baseline assessment for the expected impact footprint area. The study was required to meet national and IFC requirements, including a Critical Habitat assessment.

Project Name: The Environmental Impact Assessment for the proposed Sibaya Node 6 development, Umdloti, South Africa.

Personal position / role on project: Terrestrial Ecologist

Location: South Africa

Main project features: To conduct a flora and fauna specialist assessment of the proposed mixed use development location and determine the impacts associated with the proposed development in relation to terrestrial fauna and flora.

Project Name: Terrestrial Biodiversity Monitoring (including rehabilitation, alien vegetation and indigenous ecology) for the Sibaya Node 6 development, Umdloti, South Africa.

Personal position / role on project: Terrestrial Ecologist

Location: South Africa

Main project features: To conduct monthly monitoring for the Sibaya Node 6 development (Salta) for 6 months including completing a detailed Vegetation Assessment, Rehabilitation Plan, Plant Rescue Plan, Conservation Management Plan and Biodiversity Action Plan.

Project Name: The Environmental Impact Assessment for the proposed Roodeplaatwind energy facility, Eastern Cape, South Africa.

Personal position / role on project: Terrestrial Ecologist

Location: South Africa

Main project features: To conduct a flora and fauna specialist assessment of the proposed wind farm location and determine the impacts associated with the proposed development in relation to terrestrial fauna and flora. This included An Ecological Assessment, Rehabilitation Plan, Plant Rescue and Protection Plan, Open Space Management Plan and Alien Vegetation Management Plan.

Project Name: The Environmental Impact Assessment for the proposed Roodeplaatwind energy facility, Eastern Cape, South Africa.

Personal position / role on project: Terrestrial Ecologist

Location: South Africa

Main project features: To conduct a flora and fauna specialist assessment of the proposed wind farm location and determine the impacts associated with the proposed development in relation to terrestrial fauna and flora.

Project Name: Conservation Value Assessment for the City of Johannesburg (Little Falls Nature Reserve, Melville Koppies Nature Reserve, Ruimsig Butterfly Reserve and Rietfontein Nature Reserve)

Personal position / role on project: Terrestrial Ecologist

Location: Gauteng, South Africa

Main project features: Determination of the conservation potential and connectivity of four nature reserves within the City of Johannesburg including both fauna and flora.

Project Name: Feronia Palm Oil Projects, Including Boteka, Lokutu and Yaligimba, Democratic Republic of the Congo.

Personal position / role on project: Terrestrial Ecologist and HCV Specialist

Location: Democratic Republic of the Congo

Main project features: Determination and mapping of High Conservation Value areas within three oil palm plantations in the DRC to meet international best practice. Components including flora and fauna assessments as well as the integration of social aspects into the HCV assessment.

OVERVIEW

An overview of the specialist technical expertise includes the following:

- Terrestrial Ecological baseline assessments and categorization of the current condition of the environment.
- Ecosystem services for biodiversity, and the ecological and social interactions.
- Integration of specialist reports into IFC standard or HCV reporting.
- Design and adaptation of field methodology for assessment.
- Terrestrial Biodiversity offset strategy designs.
- Terrestrial rehabilitation plans.
- Monitoring plans for terrestrial systems.
- Faunal surveys which include mammals, birds, amphibians and reptiles.
- The design, compilation and implementation of Biodiversity and Land Management Plans and strategies.

EMPLOYMENT EXPERIENCE

The Biodiversity Company (March 2022 – Present)

Terrestrial Ecologist.

LD Biodiversity (August 2014 – March 2022)

Director and Terrestrial Ecologist

Digby Wells Environmental (July 2012 – September 2014)

Terrestrial Ecologist

Coastal and Environmental Services (March 2009 – June 2012)

Terrestrial Ecologist

PREVIOUS EMPLOYMENT: Rhodes University Department of Botany

Research Assistant

ACADEMIC QUALIFICATIONS

Rhodes University, Grahamstown, South Africa (2007): MAGISTER SCIENTIAE (MSc) - Botany:

Title: Pollinator mediated selection in Pelargonium reniforme Curtis (Geraniaceae): Patterns and Process.

Rand Afrikaans University (RAU), Johannesburg, South Africa (2004): BACCALAUREUS SCIENTIAE CUM HONORIBUS (Hons) – Botany

Rand Afrikaans University (RAU), Johannesburg, South Africa (2001 - 2004): BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Entomology and Botany.

PUBLICATIONS

Taylor, S, Ripley, B, Martin, T, de Wet, L, Woodward, I and Osborne, C (2014.) Physiological advantages of C4 grasses in the field: a comparative experiment demonstrating the importance of drought. *Global Change Biology* – in Press.

Ripley BS, de Wet, L and Hill MP (2008). Herbivory-induced reduction in photosynthetic productivity of water hyacinth, *Eichhornia crassipes* (Martius) Solms-Laubach (Pontederiaceae), is not directly related to reduction in photosynthetic leaf area. *African Entomology* 16(1): 140-142.

de Wet LR, Barker NP and Peter CI (2008). The long and the short of gene flow and reproductive isolation: Inter-Simple Sequence Repeat (ISSR) markers support the recognition of two floral forms in *Pelargonium reniforme* (Geraniaceae). *Biochemical Systematics and Ecology* 36: 684-690.

de Wet L, NP Barker and CI Peter (2006). Beetles and Bobartia: an interesting herbivore-plant relationship. *Veld & flora*. September: 150 – 151.

de Wet LR and Botha CEJ (2007). Resistance or tolerance: An examination of aphid (*Sitobion yakini*) phloem feeding on Betta and Betta-Dn wheat (*Triticum aestivum* L.). *South African Journal of Botany* 73(1): 35-39.

de Wet L (2005). Is *Pelargonium reniforme* in danger? The effects of harvesting on *Pelargonium reniforme*. *Veld & Flora*. December: 182-184.

Andrew Husted

M.Sc Aquatic Health (*Pr Sci Nat*)

Cell: +27 81 319 1225

Email: andrew@thebiodiversitycompany.com

Identity Number: 7904195054081

Date of birth: 19 April 1979



Profile Summary

Working experience throughout South Africa, West and Central Africa and also Armenia & Serbia.

Specialist experience in exploration, mining, engineering, hydropower, private sector and renewable energy.

Experience with project management for national and international multi-disciplinary projects.

Specialist guidance, support and facilitation for the compliance with legislative processes, for in-country requirements, and international lenders.

Specialist expertise include Instream Flow and Ecological Water Requirements, Freshwater Ecology, Terrestrial Ecology and also Ecosystem Services.

Areas of Interest

Sustainability and Conservation.

Instream Flow and Ecological Water Requirements.

Publication of scientific journals and articles.

Key Experience

- Familiar with World Bank, Equator Principles and the International Finance Corporation requirements
- Environmental, Social and Health Impact Assessments (ESHIA)
- Environmental Management Programmes (EMP)
- Ecological Water Requirement determination experience
- Wetland delineations and ecological assessments
- Rehabilitation Plans and Monitoring
- Fish population structure assessments
- The use of macroinvertebrates to determine water quality
- Aquatic Ecological Assessments
- Aquaculture

Country Experience

Botswana, Cameroon
Democratic Republic of Congo
Ghana, Ivory Coast, Lesotho
Liberia, Mali, Mozambique
Nigeria, Republic of Armenia,
Senegal, Serbia, Sierra Leone, South Africa
Tanzania

Nationality

South African

Languages

English – Proficient

Afrikaans – Conversational

German - Basic

Qualifications

- MSc (University of Johannesburg) – Aquatic Health.
- BSc Honours (Rand Afrikaans University) – Aquatic Health
- BSc Natural Science
- Pr Sci Nat (400213/11)
- Certificate of Competence: Mondri Wetland Assessments
- Certificate of Competence: Wetland WET-Management
- SASS 5 (Expired) – Department of Water Affairs and Forestry for the River Health Programme
- EcoStatus application for rivers and streams

EMPLOYMENT EXPERIENCE

The Biodiversity Company (January 2015 – Present)

Director / Ecologist.

Digby Wells Environmental (August 2008 – December 2014)

Freshwater & Terrestrial Ecologist

PREVIOUS EMPLOYMENT: Econ@UJ (University of Johannesburg)

Freshwater Ecologist

ACADEMIC QUALIFICATIONS

University of Johannesburg, Johannesburg, South Africa (2009): MAGISTER SCIENTIAE (MSc) - Aquatic Health:

Title: *Aspects of the biology of the Bushveld Smallscale Yellowfish (Labeobarbus polylepis): Feeding biology and metal bioaccumulation in five populations.*

Rand Afrikaans University (RAU), Johannesburg, South Africa (2004): BACCALAUREUS SCIENTIAE CUM HONORIBUS (Hons) – Zoology

Rand Afrikaans University (RAU), Johannesburg, South Africa (2001 - 2004): BACCALAUREUS SCIENTIAE IN NATURAL AND ENVIRONMENTAL SCIENCES. Majors: Zoology and Botany.

PUBLICATIONS

Desai M., Husted A., Fry C., Downs C.T., & O'Brien G.C. 2019. Spatial shifts and habitat partitioning of ichthyofauna within the middle–lower region of the Pungwe Basin, Mozambique. *Journal of Freshwater Ecology*, 34(1), 685–702. doi: 10.1080/02705060.2019.1673221

Tate R.B. and Husted, A. 2015. Aquatic Biomonitoring in the upper reaches of the Boesmanspruit, Carolina, Mpumalanga, South Africa. *African Journal of Aquatic Science*.

Tate R.B. and Husted A. 2013. Bioaccumulation of metals in *Tilapia zillii* (Gervai, 1848) from an impoundment on the Badeni River, Cote D'Ivoire. *African Journal of Aquatic Science*.

O'Brien G.C., Bulfin J.B., Husted A. and Smit N.J. 2012. Comparative behavioural assessment of an established and new Tigerfish (*Hydrocynus vittatus*) population in two manmade lakes in the Limpopo catchment, Southern Africa. *African Journal of Aquatic Science*.

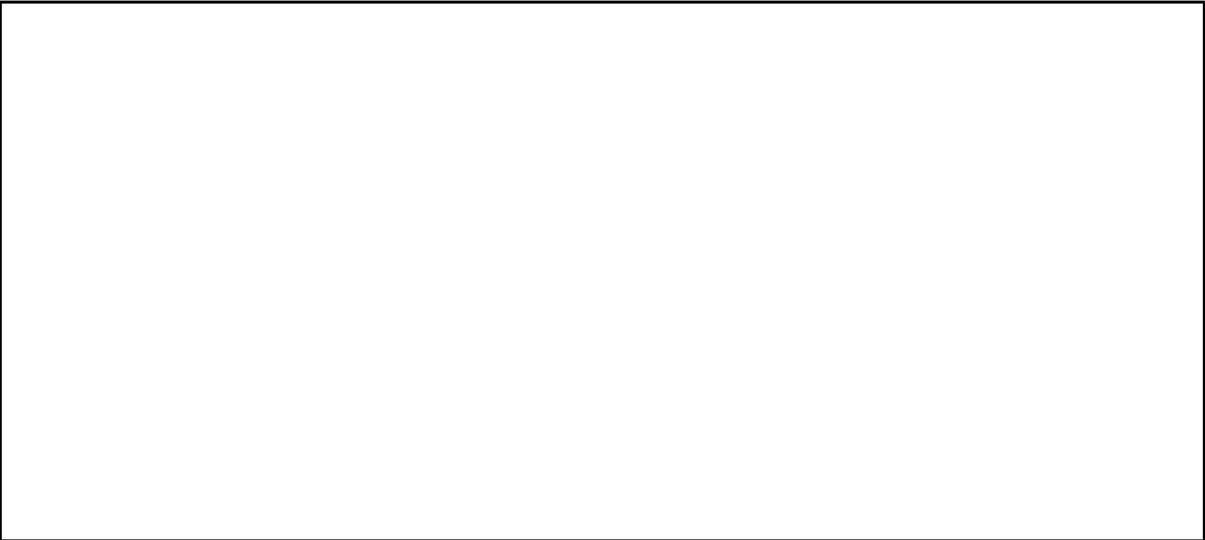
Tomschi H., Husted A., O'Brien G.C., Cloete Y., Van Dyk C., Pieterse G.M., Wepener V., Nel A. and Reisinger U. 2009. Environmental study to establish the baseline biological and physical conditions of the Letsibogo Dam near Selebi Phikwe, Botswana. EC Multiple Framework Contract Beneficiaries.8 ACP BT 13 – Mining Sector (EDMS). Specific Contract N° 2008/166788. Beneficiary Country: Botswana. By: HPC HARRESS PICKEL CONSULT AG

Husted A. 2009. Aspects of the biology of the Bushveld Smallscale Yellowfish (*Labeobarbus polylepis*): Feeding biology and metal bioaccumulation in five populations. The University of Johannesburg (Thesis).

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 7

Employment Contract



(Insert Your Company Logo)

(This shall serve as the cover page on employment contracts for local labour)

EMPLOYMENT AGREEMENT

BETWEEN

[CONTRACTOR NAME].....

AND

[WORKER NAME].....

1. PARTIES

The Parties to this Agreement are -

1.1. Contractor: _____
herein represented by: _____
duly authorised thereto

And

1.2. Mr / Me: _____
[worker's name]

2. DEFINITIONS AND INTERPRETATION

2.1. In this Agreement and any Annexure thereto, unless inconsistent with or otherwise indicated by the context-

“Agreement” means the contents of this Agreement.

“Company” means the company that employs the worker

“Worker” is a person that performs a specific or necessary task or who completes tasks in a certain way

“EPWP” The Expanded Public Works Programme is a government programme aimed at the alleviation of poverty and unemployment. The programme ensures the full engagement on Labour Intensive Methods of Construction (LIC) to contractors for skills development. The EPWP focuses at reducing unemployment by increasing economic growth by means of improving skills levels through education and training and improving the enabling environment for the industry to flourish.

3. PURPOSE

The purpose of this agreement is to:-

Ensure that the agreement is binding to both the Worker and the Employer.

4. TERMS AND CONDITIONS

- The worker will have no entitlement to the benefits of a full time employee, namely;

- The worker should not have the expectation that this contract will be renewed or extended.
- The worker will be subject to all laws, rules, policies, codes and procedures applicable to the;

- The worker must meet the standards and requirements of the contractor
- The worker must render his/her services during normal working hours of minimum of forty to fifty five hours in any week; which comprise of an eight-hour working day in a five-day week.

5. REMUNERATION

The worker will receive compensation to the amount of R_____00 which must be paid by the 25th or on the last day of each month.

6. ROLES AND RESPONSIBILITIES

6.1 Employer / Worker

- Work for _____ in terms of the period as specified in the employment agreement contract.
- Be available for and participate in all learning and work experience required by the company.
- Comply with workplace policies and procedures.
- Complete any attendance or any written assessment tools supplied by the contractor to record relevant workplace experience.
- Demonstrate willingness to grow and learn through work experience.

Provide the following documentation to the employer,

- Certified identity document not longer than 3 months
- ID size photos
- Sign employment contract

6.2 Employer

- Employ the worker for a period specified in the agreement.
- Provide the worker with appropriate work based experience in the work environment.
- Facilitate payments of wages / stipends.
- Keep accurate records of workers.
- Where a worker/ learner is disabled, the employer will have to provide in the additional needs e.g. special materials, learning aids and in some cases physical or professional support (such aids remain the property of the employer).
- Keep up to date records of learning and discuss progress with the intern on a regular basis.
- Apply fair disciplinary, grievance and dispute resolution procedures to the worker.
- Prepare an orientation/ induction course to introduce worker/ learner to the workplace and specific workplace requirements.
- Ensure the daily attendance register is signed by the worker.

7. DURATION.

This agreement commences on:

and

expires on:

8. BREACH.

If either party commits any breach of the terms of this contract (and fails to rectify it within 30 days of receipt of a written notice calling it to do so, then) the other party shall be entitled to terminate the contract or to claim specific performance without prejudice to any of its other legal rights, including its rights to claim damages.

9. CONDITIONS OF EMPLOYMENT

9.1. Meal Breaks

9.1.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

9.1.2 An employer and worker may agree on longer meal breaks.

9.1.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

9.1.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

9.2. Special Conditions for Security Guards (Only applicable to security Guards)

9.2.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

9.2.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

9.3. Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

9.4. Work on Sundays and Public Holidays

9.4.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

9.4.2 Work on Sundays is paid at the ordinary rate of pay.

9.4.3 A task-rated worker who works on a public holiday must be paid;

(a) the worker's daily task rate, if the worker works for less than four hours;

(b) double the worker's daily task rate, if the worker works for more than four hours.

9.4.4 A time-rated worker who works on a public holiday must be paid

(a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

(b) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

9.5 Sick leave

- 9.5.1 Only workers who work more than 24 hours per month have the right to claim sick-pay in terms of this clause.
- 9.5.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.
- 9.5.3 A worker may accumulate a maximum of twelve days' sick leave in a year.
- 9.5.4 Accumulated sick-leave may not be transferred from one contract to another contract.
- 9.5.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
- 9.5.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
- 9.5.7 An employer must pay a worker sick pay on the worker's usual payday.
- 9.5.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is
- (a) absent from work for more than two consecutive days; or
 - (b) absent from work on more than two occasions in any eight-week period.
- 9.5.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.
- 9.5.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

9.6. Maternity Leave

- 9.6.1 A worker may take up to four consecutive months' unpaid maternity leave.
- 9.6.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.
- 9.6.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- 9.6.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- 9.6.5 A worker may begin maternity leave as follows;
- (a) four weeks before the expected date of birth; or
 - (b) on an earlier date
 - (i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - (ii) if agreed to between employer and worker; or
 - (c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.
- 10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

9.7. Family responsibility leave

9.7.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances;

- (a) when the employee's child is born;
- (b) when the employee's child is sick;
- (c) in the event of a death of
 - (i) the employee's spouse or life partner;
 - (ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

9.8. Keeping Records

9.8.1 Every employer must keep a written record on site for the duration of the project and three (3) year after completion records should consists of at least the following;

- (a) the worker's name and position;
- (b) copy of an acceptable worker identification
- (c) in the case of a task-rated worker the number of tasks completed by the worker;
- (d) in the case of a time-rated worker, the time worked by the worker;
- (e) payments made to each worker in a form of Proof of Payment, Payroll registers and the acknowledgement of payment receipt signed by the worker.

9.8.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

9.9. Payment

9.9.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

9.9.2 A worker may not be paid less than the Ministerial Determination wage rate.

9.9.3 A task-rated worker will only be paid for tasks that have been completed.

9.9.4 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

9.9.5 A time-rated worker will be paid at the end of each month.

9.9.6 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

9.9.7 Payment in cash or by cheque must take place

- (a) at the workplace or at a place agreed to by the worker;
- (b) during the worker's working hours or within fifteen minutes of the start or finish of work;
- (c) in a sealed envelope which becomes the property of the worker.

9.9.8 An employer must give a worker the following information in writing

- (a) the period for which payment is made;
- (b) the numbers of tasks completed or hours worked;
- (c) the worker's earnings;
- (d) any money deducted from the payment;
- (e) the actual amount paid to the worker.

9.9.9 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

9.9.10 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

9.10. Inclement weather

If no work has begun on site, and if an employee has reported for work, the employee will be paid for four hours. Should work be stopped after the first four hours, the employee will be paid for the hours worked. Where the employer has given employees notice on the previous working day that no work will be available due to inclement weather, then no payment will be made.

9.11. Deductions

9.11.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

9.11.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

9.11.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement of Law; court order or arbitration

9.11.4 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Unemployment Insurance Fund Contributions Act, 2002 (Act No. 4 of 2002)

9.11.5 An employer may not require or allow a worker to

- (a) repay any payment except an overpayment previously made by the employer by mistake;
- (b) state that the worker received a greater amount of money than the employer actually paid to the worker; or
- (c) pay the employer or any other person for having been employed.

9.12. Health and Safety

9.12.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

9.12.2 A worker must;

- (a) work in a way that does not endanger his/her health and safety or that of any other person;
- (b) obey any health and safety instruction;
- (c) use any personal protective equipment or clothing issued by the employer;
- (d) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

9.13. Compensation for Injuries and Diseases

- 9.13.1 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993 as amended by COIDA Act 61, 1997.
- 9.13.2 A worker must report any work-related injury or occupational disease to their employer or manager.
- 9.13.3 The employer must report the accident or disease to the Compensation Commissioner.
- 9.13.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

9.14. Termination

- 9.14.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.
- 9.14.2 A worker will not receive severance pay on termination.
- 9.14.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
- 9.14.4 A worker **who is absent for more than three consecutive days** without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available.
- 9.14.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

Notice procedure is as follows;

- One week if employed for four weeks or less
- Two weeks if employed for more than four weeks but not more than a year
- Four weeks of employed for one (1) year or more

9.15. Certificate of Service

- 9.15.1 On termination of employment, a worker is entitled to a certificate stating;
- (a) the worker's full name;
 - (b) the name and address of the employer;
 - (c) the Project on which the worker worked; the work performed by the worker;
 - (d) any training received by the worker;
 - (e) the period for which the worker worked on the Project; and
 - (f) any other information agreed on by the employer and worker.

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 8

Attendance Register

The Attendance Register for on-site Workers

Reporting month: _____

Cell No: _____

Surname: _____

First Name: _____

Project Name: **Eco Park: Fencing and Site Clearance for Plessislaer Site**

Project Code: **TBC**

Tender No **3410/2026/01**

IDENTITY NUMBER:

Day	Date	Time In	Signature	Time Out	Signature	Report On Any Formal Training Provided In The Reporting Month
WEEK 1						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 2						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 3						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 4						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 5						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
Total Days worked						

Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 9

Site Location

Location	
Municipality	Umsunduzi Local Municipality
Ward	22
Government Facility	Trade & Investment KwaZulu Natal
Latitude	29°38'38.54"S
Longitude	30°20'36.97"E
Physical Address/Location	

MAP/COORDINATES FOR LOCATION





**Trade &
Investment**
Kwazulu - Natal
YOUR KNOWLEDGE PARTNER IN BUSINESS



Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 10

Architect Drawings

TEMPORARY DUMPING ZONES



LOCALITY MAP
EXISTING RUBBLE ON SITE



vegetation to be pruned/trimmed & rubble to be cleared & relocated on site to temporary dump area:44 968m²

temporary dumping area to be attended to by main contractor

vegetation to be pruned/trimmed & rubble to be cleared & relocated on site to temporary dump area:44 968m²

vegetation to be pruned/trimmed outside of boundary wall on street edge. Contractor to be sure not to damage any existing services: 7128,3m²

vegetation to be pruned/trimmed outside of boundary wall on street edge. Contractor to be sure not to damage any existing services: 7128,3m²

vegetation to be pruned/trimmed & rubble to be cleared & relocated on site to temporary dump area:44 968m²



ECO PARK MASTER PLAN - BOUNDARY WALL

1 : 1000

- NOTES:**
- Contractor to ensure that no existing services are to be damaged.
 - Contractor to ensure that no dumping is done within the water bodies/protected natural vegetation on site other than indicated on the drawing, a demarcated dumping zone(s) will be indicated on site.
 - Contractor to be sure to remove alien vegetation within the indicated scope of works in strict accordance with the environmentalist report.
 - Contractor to be sure to protect endangered vegetation and natural habitat in and surrounding the wetlands in strict accordance with environmentalist report.
 - Contractor to ensure that absolutely no squatting is permitted on site throughout the duration of the contract.
 - Contractor to ensure that no trees are to be removed/ cut down prior to the approval of the Environmental Impact Assessment. Existing trees are to be pruned/trimmed within the indicated area.
 - Contractor to introduce measures on site to ensure that the biodiversity of the wetlands, river and water bodies on site go uninterrupted and undamaged throughout the duration of the contract.
 - Contractor to be advised that the site is a natural habitat for various lifeforms. The contractor is to ensure that these inhabitants go unharmed during the contractor's possession of the site.



No.	Date	Amendment	Issued to

GENERAL NOTES

- All drawings to read in conjunction with Engineers Drawings
- Contractor to report any discrepancies or contradiction to the architect immediately.
- No drawings are to be scaled.
- All brickwork is to be set out using a profile marked at 85 mm c/c & 128 mm c/c for main bricks
- The contractor must have a full set of dwg's on site during construction.
- All dimensions as indicated on plan are to be set out on a level horizontal plane.
- The contractor is to build in SABS approved DPC's whether or not these are shown on drawings, to all external walls at each floor, beam or parapet level and to all windows, doors, grilles or other openings in external

SANS 10400 NOTES:

- All work to comply with SANS 10400 standards and specifications
- Structural design to Engineer's specification and complies with parts H, J, K, L, M or N of SANS 10400
- All dimensions of rooms and spaces to comply with SANS 10400-C
- All sanitary facilities comply with SANS 10400-F
- All roof gutters and down pipes to comply with SANS 10400-R
- All glazing to comply with part N of SANS 10400
- Safety glass to be used within 300mm of FFL to comply with SANS 10400-N regulations
- All drainage subject to an agreement certificate and to comply with SANS 10400-P
- All disposal of storm water to comply with SANS 10400-R
- Facilities for disabled persons are provided and are in accordance to SANS 10400-S

Client number: 2023/10/12
page type:

DEPARTMENT SIGNATURES	
FACILITY	
FACILITY CEO	
FACILITY MANAGER	
DISTRICT MANAGER	
PROJECT LEADER	
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Signature	
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UKUZA CONSULTING

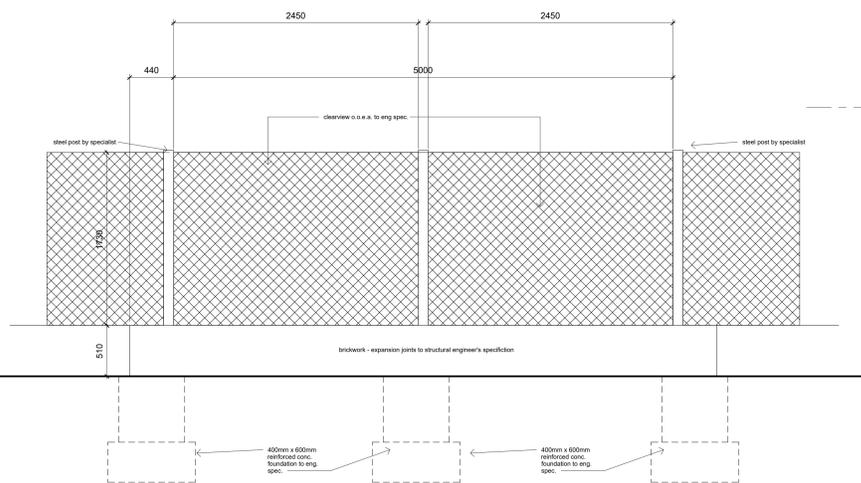
Discipline: Architecture
Project: Design and Implementation (Professional Services only) for the Eco-Park containing a Biomass Factory, Leather Training, and Incubation Facilities.

Site Plan - Site Clearance Tender Drawing

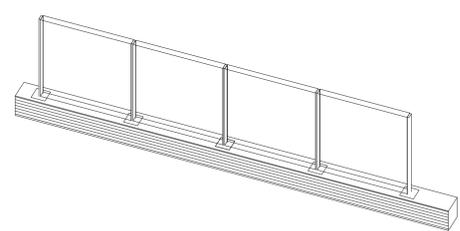
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Drawing Number ID	00000 = Client No		
	UKU = Department		
	A = Consultant Discipline		
	0000 = Drawing No		
	0 = Revision No		

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- SANS 10400 NOTES:**
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 - All glazing to comply with part N of SANS 10400
 - Safety glass to be used within 300mm of FFL to comply with SANS 10400-N regulations
 - All drainage subject to an agreement certificate and to comply with SANS 10400-D
 - All disposal of storm water to comply with SANS 10400-R
 - Facilities for disabled persons are provided and are in accordance to SANS 10400-S



Typical Boundary Wall Detail
1:25



Boundary Wall Concept - Option 01



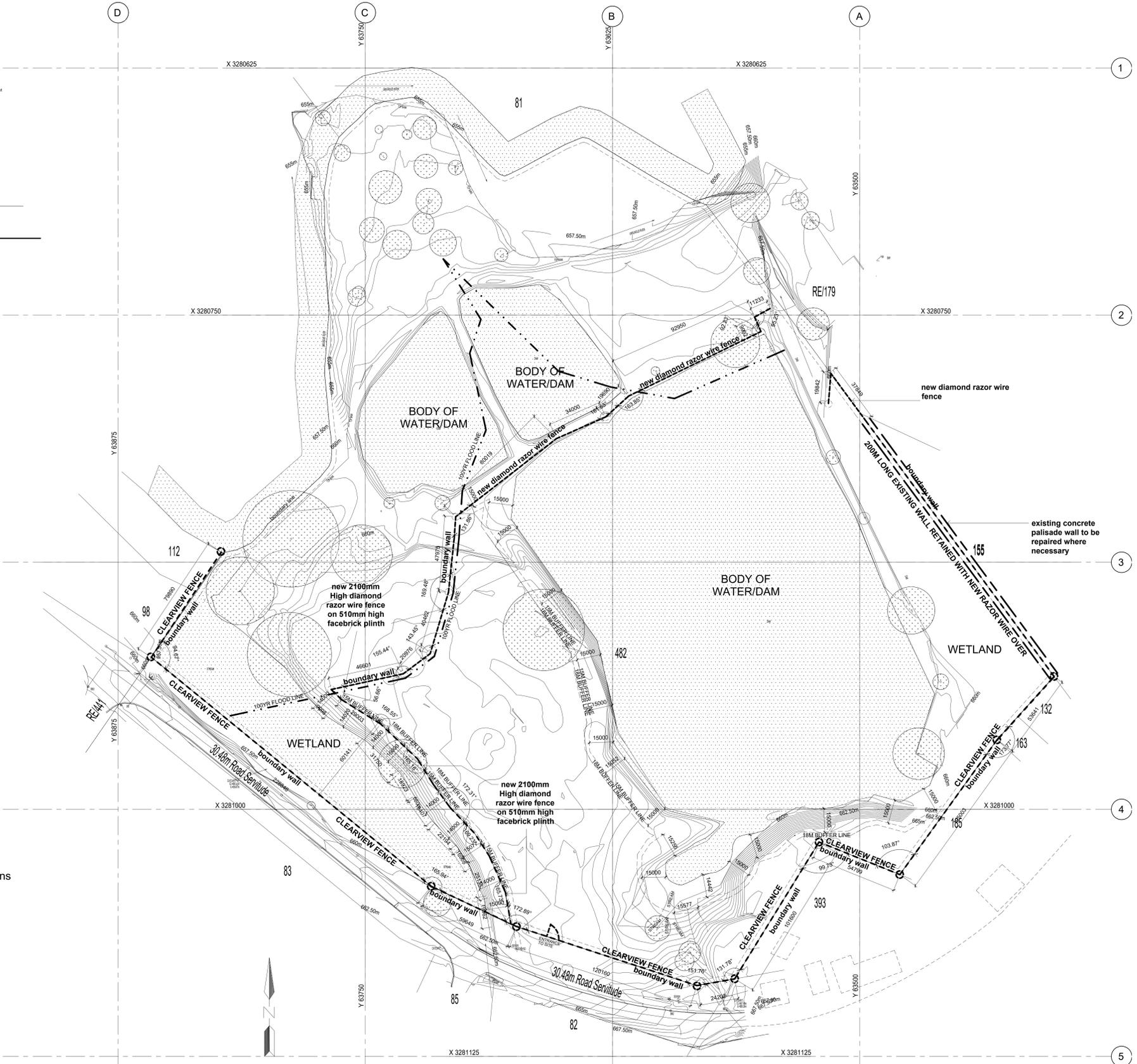
Boundary wall option - diamond razor fence
Diamond Wire Mesh Fence

70 x 150mm Galvanized diamond razor wire mesh fence 1800mm high with seven horizontal strand wire of 2.9mm diameter fixed to 2400mm high posts, y-standards, droppers, etc. with posts as 2475mm centres with 600mm bottom ends cast into concrete base - **654m in length**. Contractor to provide shop drawings & specification sheet for inspection & approval. Dimensions to be confirmed on site prior to manufacture.



Boundary wall option - clearview fence invisible wall O.O.E.A.

Anti-Bandit/ Anti-Climb/ Anti-Cut invisible fence of galvanized steel fencing by specialist.
Medium galvanized mesh panels with widths not exceeding 2493mm wide and height of 1800mm bolted to 76 x 76 x 2mm x 2400mm high galvanized steel square posts, steel posts to be embedded 600mm into concrete infill brick columns all in strict accordance with manufacturers instructions. 76 x 12mm horizontal aperture. No baseplate required, fence is to be installed above 510mm high brick walls - 830m in length. Contractor to provide shop drawings & specification sheet for inspection & approval. Dimensions to be confirmed on site prior to manufacture.



ECO PARK MASTER PLAN - BOUNDARY WALL SITE PLAN
1:1000

Client number
2023/10/12

DEPARTMENT SIGNATURES	
FACILITY	
FACILITY CEO	
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PROJECT LEADER	
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Signature	Date
	2025/10/30

Owner

Consultant

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Discipline: Architecture

Project: Design and Implementation (Professional Services only) for the Eco-Park containing a Biomass Factory, Leather Training, and Incubation Facilities.

Drawing title: Site Plan - Boundary Wall Site Plan

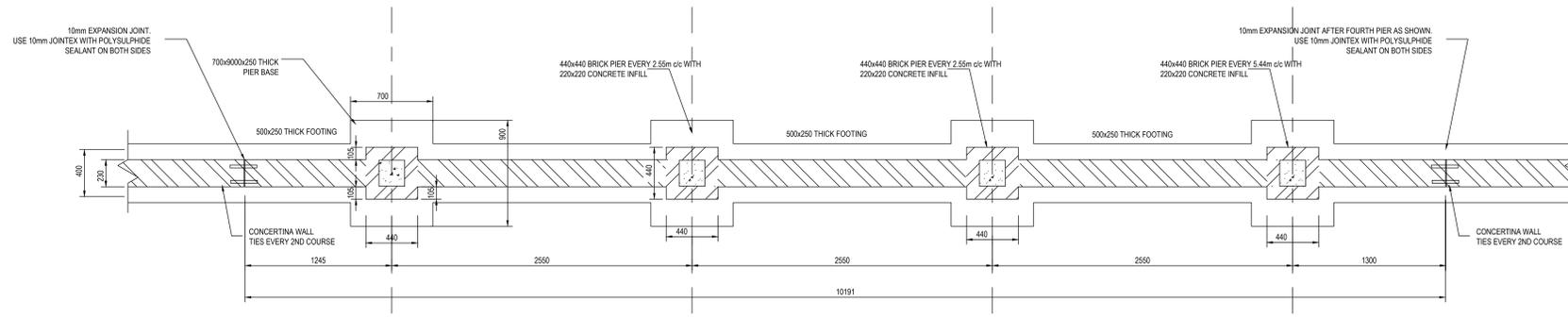
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Scale	As indicated		2025/10/30
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Project Stage			
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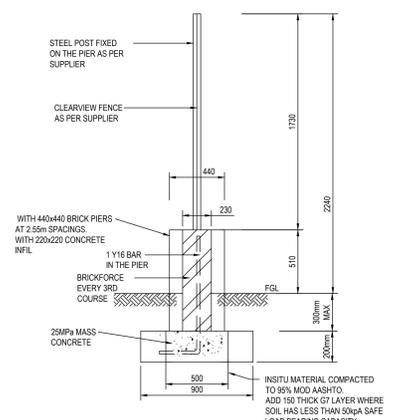
Eco Park: Fencing and Site Clearance for Plessislaer Site

ANNEXURE 11

Civil & Structural Engineer Drawings



1:20 PLAN BRICK WALL AND COLUMN STIFFENER DETAIL



1:20 TYPICAL SECTION OF THE BOUNDARY WALL

No.	Date	Amendment	Issued to

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- All disposal of storm water to comply with SANS 10400-R
- Facilities for disabled persons are provided and are in accordance to SANS 10400-S

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Project: Design and Implementation (Professional Services only) for the Eco-Park containing a Biomass Factory, Leather Training, and Incubation Facilities.

Drawing title: Site Plan - Boundary Wall

Drawn	DM	Date	
Scale	As indicated	Date	2023/10/18 08:50:37
Drawing number	TIKZN-UKU-C-1001	Client number	3410/2022/02
Drawing Number ID			
00000	= Client No		
UKU	= Department		
C	= Consultant Discipline		
0000	= Drawing No		
0	= Revision No		