CALL FOR BIDS

BID NO: ECDC **ECDC/INFRA/32/012024**

BID SUBJECT: **REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS – (MTHATHA CLUSTER G)**

Consisting Of:

The Tender (Returnable) - This Document
The Bills of Quantities - This Document
Annexures – This Document

BIDDER NAME: .....

CSD No.: .....

CRS No.: .....

CLOSING DATE:	**04 MARCH 2024**
CLOSING TIME:	**12h00**

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SECTION A: ABBREVIATIONS AND ACRONYMS	
CIDB	Construction Industry Development Board
DTI	Department of Trade and Industry
ECDC	Eastern Cape Development Corporation
EME	Exempt Micro Enterprise
IRBA	Independent Regulatory Board of Auditors
PCCA	Prevention and Combating of Corrupt Activities Act 12 of 2004
PFMA	Public Finance Management Act (Act 1 of 1999)
PPPFA	Preferential Procurement Policy Framework Act (Act 5 of 2000)
QSE	Qualifying Small Enterprise
SABS	South African Bureau of Standards
SANAS	South African National Accreditation System
SARS	South African Revenue Service
SASAE	South African Standard on Assurance Engagements
SCM	Supply Chain Management
SMME	Small, Medium and Micro Enterprises
ToR	Terms of Reference
CSD	National Treasury Central Supplier Database for South African Government
B: DEFINITIONS	
Acceptable tender	Means any tender which, in all respects, complies with the specifications and conditions of tender as set out in the tender document.
Accreditation Body	Means the South African National Accreditation System or any other entity appointed by the Minister from time to time whose function it is to: Accrediting verification agencies Developing, maintaining and enforcing of Verification Standards
Affordable	Means (in terms of a PPP-Agreement) that the financial commitments to be incurred can be met by funds: Designated within ECDC's existing budget for the function to which the agreement relates; and Destined for ECDC in accordance with the relevant Treasury's future budgetary projections.
All applicable taxes	Includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.
Bid	Means a written offer or proposal to supply goods and/or provide services, submitted in response to the ECDC's invitation to quote or submit proposals which includes advertised competitive bids, written price quotations or proposals.
Bid Specification	A specification that lays down the characteristics of goods to be procured or their related processes and production methods, or the characteristics of services to be procured or their related operating methods, including the applicable administrative provisions, and a detailed requirement relating to conformity assessment procedures that an entity prescribes and shall

	Include TOR for specialised services.
Black People	means 'African', 'Indian' and 'Coloured' people who are citizens of the Republic of South Africa by birth; or are citizens of the Republic of South Africa by naturalisation before the commencement date of the Constitution of South Africa Act (1993); or became citizens of the Republic of South Africa after the commencement of the of the Constitution of South Africa Act (1993), but who for the Apartheid policy that has been in place to that date, would have been entitled to acquire citizenship by naturalisation prior to that date.
Specific goal	2.1. 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 in SBD 6.1 as may be supported by proof/ documentation stated in the conditions of this tender: 2.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of— (a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or (b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system, then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.
Close Family Member	Shall mean: - member of the same household, parent (including adoptive parent), parent-in-law, son (including adoptive son), son-in-law, daughter (including adoptive daughter), daughter-in-law, step-parent, step-son, step-daughter, brother, sister, grandparent, grandchild, uncle, aunt, nephew, niece, the spouse or unmarried partner with relation to any of the person's above.
Code of Ethics	refer to the ECDC Code of Ethics for Management and Staff as may be amended from time to time.
Comparative Price	Means the price after the factors of a non-firm price and all the unconditional discounts that can be utilised have been taken into consideration.
Consortium or Joint Venture	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.
Contract	Means the agreement that results from the acceptance of a bid by ECDC.
Designated Sector	Means a sector, sub-sector or industry that has been designated by the DTI in line with national development and industrial policies for local production, where on local produced goods or locally manufactured goods meet the stipulated minimum threshold for local production and content.
Duly Sign	means a document that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility (close corporation, partnership or individual).
Exempt Micro Enterprise (EME)	means an enterprise with a specified total annual revenue as per Department of Trade and Industry Codes of Good Practice on Broad Based Black Economic Empowerment
Family Member	Means a husband or wife, any partner in a customary union according to indigenous law or any partner in a relationship where the parties live together in a manner resembling a marital partnership or a customary union; and any person related to either one or both persons referred above within the second degree through a marriage, a customary union or a relationship or the third degree of consanguinity.

Firm Price	Means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract.
Fronting	Means a deliberate circumvention or attempted circumvention of the B-BBEE Act and the Codes. Fronting commonly involves reliance on data or claims of compliance based on misrepresentation of facts, whether made by the party claiming compliance or by any other person.
Functionality	Means the measurement according to predetermined norms, as set out in the tender documents, of a service or commodity that is designed to be practical or useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of the tenderer.
Imported Content	Means that portion of the tender price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the bidder or its subcontractors) and which costs are inclusive of the costs abroad (this includes labour or intellectual property costs), plus freight and other direct importation costs, such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African port of entry.
In the service of the state	means: an employee of any municipality who has a performance contract with the municipality and is employed on a permanent, temporary or short term basis. an employee or public servant of any national or provincial government as defined in terms of Public Services Act. a member who – is a councillor of any municipal council as defined in the Local Government Municipal Structures Act (Act No 117 of 1998); is a politician serving in any provincial legislature; or is a politician serving in the National Assembly or the National Council of Provinces; a member of the board of directors of any municipal entity; an employee and a member of a government owned entity as defined in the Public Finance
Local content	Means a portion of the tender price which is not included in the imported content, provided that local manufacture does take place.
Non-firm prices	Means all prices other than “firm” prices
Person	Includes a juristic person.
Price Quotation	An estimate describing the product, stating its price, time of shipment, and specifies the terms of the sale and terms of the payment.
Property	Includes all movable and immovable property and intellectual property belonging to ECDC.
Public Private partnership	Means a commercial transaction between ECDC and a private party in terms of which: the private party either performs a function o.b.o. ECDC for a specified or indefinite period, or acquires the use of state property for its own commercial purposes for a specified or indefinite period; the private party receives a benefit for performing the function or by utilizing state property, either by way of: compensation from a revenue fund charges or fees collected by the private party from users or customers of a service provider to them; or a combination of such compensation and such charges or fees

Qualifying Small Entity	means an enterprise with a specified total annual revenue as per Department of Trade and Industry Codes of Good Practice on Broad Based Black Economic Empowerment

Rand value	means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.
Related enterprise	Means an entity controlled by a measured entity whether directly or indirectly controlled by the natural persons who have direct or indirect control over that measured entity or the immediate family of those natural persons.
Service Level Agreement	Shall have the same meaning assigned as “Contract”
Shareholder	Means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.
State	Means: any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the PFMA any municipality or municipal entity
Stipulated minimum threshold	Means that portion of local production and content as determined by the DTI
Sub-Contract	Means the primary contractor’s assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract.
Tender	The same meaning is assigned as ‘Bid” above.
Threshold	Shall mean the financial limits on the value of goods or services to be procured as set and prescribed in this policy which shall determine the manner in which these goods and services will be procured
Total revenue	Means the total income of an entity from its operations as determined under South African Generally Accepted Accounting Practice.
Trust	Means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person.
Trustee	Means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.
Value for Money	Means that the item (public-private partnership agreement) results in a net benefit to ECDC defined in terms of cost, price, quality, quantity, or risk transfer, or a combination thereof.

Part T1: Tendering procedures

T.1.1
TENDER NOTICE AND INVITATION TO BID

1. Invitation to Bid

Eastern Cape Development Corporation (ECDC) wishes to engage with a suitable contractor with a CIDB Grading of 6 GB or Higher for the Refurbishment and Construction of Warehouse on ERF 2696, Vulindlela Heights, Mthatha, Eastern Cape.

The site is in Mthatha, Eastern Cape, South Africa

GPS co-ordinates of the site are 31°36'22.99"S and 28°46'48.72"E.

A Detailed scope of services is described in Scope of Work Section Below.

2. Eligibility to Bid

a) Bidders should meet the Mandatory Requirements in in order be evaluated T2.1 **(Mandatory List of Tender Returnables)**

b) **It is estimated that bidders should have a CIDB grading of 6GB or Higher.**

c) Only those tenderers who are registered with the CIDB prior to submissions of bid with a contractor grading equal 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 the above-mentioned grading classes of construction work, are eligible to have their tenders evaluated.**

3. Payment of Bid Document

No payment is due to obtain tender documents.

4. Collection /Availability of Documents

Documents will be available for downloading from the ECDC website at **www.ecdc.co.za** .

5. Queries on Bid Document

Queries relating to the issue of these documents may be addressed to Ms N. Norexe
E- Mail at **tenders@ecdc.co.za cc nnorexe@ecdc.co.za**

6. Estimated Timeline

Activity		Date	Time
1.	**Placing of Advert**	Daily Dispatch, E-Tender Portal, CIDB, Load on ECDC Website for 30 Days – **09 February 2024**	N/A
2.	**Compulsory Briefing Meeting**	A hybrid compulsory briefing meeting will be held at the ECDC Head Office in East London and **MS Teams (Virtual)** on the **20th of February 2024 starting at 11h00.** **The link to the online briefing is as follows:** https://teams.microsoft.com/l/meetup-join/19%3ameeting_NjM3OTIzZTEtZTA5ZC00Nzg0LTllYzItYjg3NjAzNzBjMjdi%40thread.v2/0?context=%7b%22Tid%22%3a%22e53bc524-1397-41ec-b3a3-fdd1dad0fb60%22%2c%22Oid%22%3a%2280ad2918-f05b-471c-9606-c8dabde000dd%22%7d	
3.	**Last day of questions**	**7 days before closing date**	**16H00**
4.	**Final date of submission of bids**	**04 March 2024**	**12h00**
5.	**Bid Validity**	**90 days**	

6.1. Briefing Session and Site Location

A hybrid compulsory briefing meeting will be held at the ECDC Head Office in East London and MS Teams (Virtual) on the 20th of February 2024 starting at 11h00.

For any enquiries relating to this Bid please email the procurement department at tenders@ecdc.co.za, attention N. Norexe

Communication with the Bidders and any clarity on Queries Bid will be posted on the website at www.ecdc.co.za and will also be communicated to the bidders via email where the Bidder has indicated to ECDC that they are interested in submitting a bid.

Bidders must visit the site to ensure that their proper assessment of the site is done and that the Bill of Quantities is Priced Correctly.

Bidders must acquaint themselves of the current site conditions, works complexity and associated safety risks.

ECDC will only consider bidders that have attended the briefing meeting.

Geographical Site Layout

14 Timber Street, Vulindlela Heights (ERF 2696):

Latitude - 31°36'22.99"S

Longitude - 28°46'48.72"E

Telephonic, emailed, telexed, facsimile, and late tenders will not be accepted.

Tenders may only be submitted on the tender documentation that is issued.

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

T1.2 Tender Data

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Construction Procurement (January 2019) as published in Government Gazette No 42622, Board Notice 423 of 2019 on the 8th of August 2019 (See www.cidb.org.za).

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

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

Clause number	Tender Data
A.1.1	The employer is **Eastern Cape Development Cooperation (ECDC)**

A.1.2	The Tender Documents issued by the Employer comprise the following documents: **THE TENDER** **Part T1: Tendering procedures** T1.1 - Tender notice and invitation to tender T1.2 - Tender data **Part T2 : Returnable documents** T2.1 - List of returnable documents T2.2 - Returnable schedules **THE CONTRACT** **Part C1: Agreements and Contract data** C1.1 - Form of offer and acceptance C1.2 - Contract data C1.3 - Performance Bond C1.4 - Adjudicator's contract **Part C2: Pricing data** C2.1 - Pricing instructions C2.2 - Bill of Quantities **Part C3: Scope of work** C3 - Scope of work **Part C4: Site information** C4 - Site information **Part C5: Annex C – Local content declaration** C5 - ANNEX C – Local content declaration – summary schedule
A.1.4	**During Tender stage all communication shall be through the Procurement Department for attention:** **Name: Ms. N. Norexe,** Address: ECDC Head Office at ECDC House Ocean Terrace Park Moore Street Quigney, East London Tel: 043 704 5600 E-mail: tenders@ecdc.co.za cc nnorexe@ecdc.co.za

A.2.1	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 CIDB Regulations are eligible to have their tenders evaluated **Joint ventures are eligible to submit tenders provided that:** 1. every member of the joint venture is registered with the CIDB; 2. the lead partner has a contractor grading designation in the **GB (General Building)** class of construction work; 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 GB class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.
A.2.1	**Not Applicable for this Bid** The following tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to have their tenders evaluated: a) contractors who have a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a ….. or …….*. class of construction work; and b) contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above and who satisfy the following criteria: .....**
A.2.2	**Not Applicable for this Bid** The employer will compensate the tender as follows
A.2.7	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Paragraph Below is Not Applicable. Bidder to refer to Tender Notice** Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the attendance list.
A.2.12	**Not Applicable for this Bid** Main tender offers are not required to be submitted together with alternative tenders.
A.2.12	No alternative tender offers will be considered.

A.2.12	**Not Applicable for this Bid** If a tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Agent. Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal. Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements. The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs in confirming the acceptability of the detailed design.
A.2.13.3	**One original duly signed (by authorised representative) and completed bid document (hardcopy) MUST be submitted inclusive of the terms and conditions of this bid document with any attachments/annexures /returnable required for this Bid.** A PDF soft copy of the duly signed and completed original bid (e.g., PDF format in Flash drive/disc) should be submitted with the Original duly signed and completed hardcopy bid document however non-submission of a soft copy will not result in the Bid being disqualified. ECDC will not be responsible if your bid is not submitted on time. All bid documents are to be **completed in permanent ink**. **No alterations of the Bid Document will be allowed.** **No correction fluid will be allowed. Corrections should be initialled.**

A.2.13.5 A.2.15.1	Valid originally firmly bound signed complete tender document (by authorized representative) must be placed in the Bid Box on or before the final date and time of submission. The employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are: a) **Location of tender box:** Bid Reference Number: **ECDC/INFRA/32/012024** Project Name: **REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G** Delivered at Physical Address: **ECDC Head Office at ECDC House, Ocean Terrace Park, Moore Street, Quigney, East London,** Bids/Tender offers must be submitted on or before the final date and time of submission of bids as indicated in the Tender Notice and invitation to Tender **It is the Bidders responsibility to ensure that all the documents are received on time.** **The bid box is open on weekdays between 08h00 and 16h30**
A.2.13.6 A.3.5	**Not Applicable for this Bid** A two-envelope procedure is required.
A.2.13.9	Telephonic, email, telegraphic, telex, email, or facsimile tender offers **will not** be accepted.
A.2.15	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.
A.2.16	The tender offer validity period is 90 days.
A.2.18	The tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the Labour Intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements. **Tenders to submit the associated names being part of the returnable documents failure to submit**
A.2.19	Access shall be provided for the following inspections, tests and analysis: The site is available for viewing the location of the works.
A.2.20	The tenderer is required to submit with his tender a letter of intent from an approved insurer undertaking to provide the Performance Bond to the format included in Contract Data/Contract of this procurement document

A.2.22	**Not Applicable for this Bid** Return all retained tender documents within 28 days after the expiry of the validity period
A.2.23	The tenderer is required to submit with his tender: **1) Tax Compliance** Bidders must ensure compliance with their tax obligations. In Bids where Consortia/Joint venture/Sub-Contractors are involved; each party must submit a separate proof of Tax Compliance Status. The bidders' Tax status will be verified on the CSD prior to the bid award and where the preferred bidders is not compliant, **7 working days** will be granted for remedy, failing which the bidder will be disqualified.
A.3.1.1	The Employer will respond to requests for clarification received up to 7 working days before the tender closing time.
A.3.4	**Opening of the Bids** Tenders will be opened immediately after the closing time for tenders at 12h00 hrs There will be **NO PUBLIC OPENING** of the Bids received; however, the list of bids received may be published on the ECDC website and will be sent to the Bidders that have submitted bids via email. There will be no discussions with any Bidder/Interested Party that Submitted Proposals/ Bids until evaluation have been complete. Any subsequent discussions shall be at the discretion of ECDC.
A.3.11.1	The financial offer will be reduced to a comparative basis.
A.3.11.2	**Not Applicable for this Bid** The procedure for the evaluation of responsive tenders is Method 1

A.3.11.3 **Evaluation Criteria**

This bid is subject to the Preferential Procurement Policy Framework Act and the Preferential Procurement Regulations 2022 as applicable to provincial government business enterprises as listed under schedule 3(D) of the Public Finance Management Act and the ECDC Procurement Policy as amended from time to time.

The procedure for evaluation of tenders is as follows:

Stage 1	**Mandatory Tender Returnables** Service Providers are to meet all the Mandatory Requirements in order to be evaluated further. Failure to submit the Mandatory Requirements as required will result in the bid being disqualified. **Local Content** Stage 1 also involves a valuation of local production and content (goods) only. At this stage Bidders must meet the minimum threshold for local production and content as determined by the DTI for local content before they will be evaluated in terms of preferential procurement points. Bidders to complete the Declaration for Local Production and Content for Designated Sectors and Local Content Declaration: **Summary Schedule (Annex C)**
Stage 2	**Functionality:** Involves an evaluation of Functionality only – At this stage Bidders must score a minimum score of **70%** for functionality (services) in order to be evaluated for stage 2 (Preferential procurement points).
Stage 3	**Preferential Procurement points:** **Price**: Points will be calculated for price on the relevant prices in accordance with the preference point system, 80/20.

A.3.11.3 The evaluation criteria and maximum score in respect of each of the criteria are as follows: (Details on Functionality Evaluation are on T2.1)

Functionality Criteria	**Maximum number of points**
Completed Similar Projects	30
Experience and Qualifications of the Key Personnel	30
Submission of proposed methodology and construction program	10
Maximum possible score for functionality (M_s)	**70**

Functionality shall be scored by not less than three evaluators in accordance with the Functionality Criteria Evaluation below:

The minimum percentage to be achieved for functionality is **70%**

A.3.13	Tender offers will only be accepted if: a) the tenderer is Tax Compliant ✓ tenderers must ensure compliance with their tax obligations. ✓ in Bids where Consortia/Joint venture/Sub-Contractors are involved; each party must submit a separate proof of Tax Compliance Status. ✓ the tenderer Tax status will be verified on the CSD prior to the bid award and where the preferred bidders is not compliant, **7 working days** will be granted for remedy, failing which the bidder will be disqualified. b) the tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation; c) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement; d) the tenderer has not: 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 able, in the opinion of the employer, to perform the contract free of conflicts. f) the employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2003, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely. g) the tenderer 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. h) the tenderer has the legal capacity to enter into the contract; i) the tenderer 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; j) the tenderer complies with the legal requirements, if any, stated in the tender data.
A.3.17	The number of paper copies of the signed contract to be provided by the employer is one (1).

Part T2 : Returnable documents

T2.1 - List of returnable documents

T2.2 - Returnable schedules

T2.1 - List of returnable documents

1. Evaluation Criteria

This bid is subject to the CIDB and Preferential Procurement Policy Framework Act and the Preferential Procurement Regulations 2017 as applicable to provincial government business enterprises as listed under schedule 3(d) of the Public Finance Management Act and the ECDC Procurement Policy as amended from time to time.

The procedure for evaluation of tenders is as follows:

Stage 1	**Mandatory Tender Returnables** Service Providers are to meet all the Mandatory Requirements in order to be evaluated further. Failure to submit the Mandatory Requirements as required will result in the bid being disqualified. **Local Content** Stage 1 also involves an evaluation of local production and content (goods) only. At this stage Bidders must meet the minimum threshold for local production and content as determined by the DTI for local content before they will be evaluated in terms of preferential procurement points. Service provider to complete the Declaration for Local Production and Content for Designated Sectors and Local Content Declaration: **Summary Schedule (Annex C)**
Stage 2	**Functionality:** Involves an evaluation of Functionality only – At this stage Bidders must score a minimum score **of 70%** for functionality (services) in order to be evaluated for stage 3 (Preferential procurement points).
Stage 3	**Preferential Procurement points:** **Price**: Points will be calculated for price on the relevant prices in accordance with the preference point system, 80/20.

1.1. MANDATORY LIST OF TENDER RETURNABLES

Service Providers are to meet all the Mandatory Tender Requirements in order to be evaluated further for Stage 1. Failure to submit the Mandatory Requirements as required will result in this bid being disqualified.

Description		Disqualification if not submitted with Bid Document or Bidder is found to be Non-Compliant at the Time of Bid Close	Mandatory Requirement for Award
1.	**Bidders must be registered on the National Treasury Central Supplier Database (CSD).** The following information will be verified on the National Treasury Central Supplier Database: • Business Registration including details of directorship and membership, - The bidders' Business Registration Status will be verified on the CSD prior to the bid award and where the preferred bidders status is under deregistration, **7 working days** will be granted for remedy, failing which the bidder will be disqualified. • ID Number, • Government Employee • Tender Defaulting and Restriction Status. Should the Tender be a restricted supplier or a defaulting supplier they will be disqualified. **Onus on the Service Provider** Onus is on the Service Provider to make sure that all these are active and compliant on the CSD at the time of bid closing and tender award. ECDC will verify if the Service Provider has been registered on CSD. Service Provider to submit CSD Number as required in the Cover Page. **It is the responsibility of the Service Provider to ensure that the correct CSD Number is provided**. If Service Provider is not registered on CSD by the time of closing of the bid they will not be considered for evaluation. **Directors in the Service of State** Where a person within the Bidding Entity is an Employee of the State, Bidder should a. submit a signed letter on a letter head from their Accounting Officer/Accounting Authority (AO/AA of the Government Institution where they are employed) stating that they are not prohibited from conducting business with the State in terms of Section 8 of the Public Administration Management Act, 2012 (Act No.11 of 2014- "The PFMA") b. submit a signed letter on a letter from their AO/AA granting permission to perform other remunerative work outside of their employment where the PAMA does not apply to such	Yes	Yes

	<u>JV's and Consortium</u> Where the Bidder is a JV/Consortium, each firm must be registered on the CSD.		
2.	**Tax Compliance Requirements:** • Bidders must ensure compliance with their tax obligations. • The bidders' Tax status will be verified on the CSD prior to the bid award and where the preferred bidders is not compliant, **7 working days** will be granted for remedy, failing which the bidder will be disqualified. • **In Bids where Consortia/Joint venture/sub-contractors are involved, each party must submit a separate proof of Tax Compliance Status Certificate/SARS Pin Number/CSD Number.**	No	Yes
3.	**CIDB Requirements:** 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 GB (General Building) class of construction work, are eligible to have their tenders evaluated. **Joint ventures are eligible to submit tenders provided that:** 1. every member of the joint venture is registered with the CIDB; 2. the lead partner has a contractor grading designation in the **GB (General Building)** class of construction work; 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 GB class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.	Yes (Evaluation Stage)	Yes **6 GB or higher**
4.	**Annexure C** – Supplier Information **(Completed and Signed by the Delegated Authority) Attach Delegation of Authority**	Yes	Yes
5.	**Annexure L.–** C.1.1 Form of Offer and Acceptance Offer; **(Completed and Signed by the Delegated Authority) Attach Delegation of Authority**	Yes	Yes

6.	**Annexure I: Preference Point Claim in terms of the Preferential Procurement Regulations 2022**	No	Yes
7.	**ANNEXURE K (which includes annex C):** Declaration of Local Content (SBD 6.2) **(Completed and Signed by the Delegated Authority) Attach Delegation of Authority**	Yes	Yes
8.	**Annexure G:** BIDDER'S DISCLOSURE (SBD4) **(Completed and Signed by the Delegated Authority) Attach Delegation of Authority**	Yes	Yes
9.	**ANNEXURE J: STATEMENT OF CONSENT TO DATA PROCESSING**	Yes	Yes
11.	**Annex C – Local Content Declaration (Summary Schedule)** (Completed and Signed by the Delegated Authority) Attach Delegation of Authority	Yes	Yes
12.	**Declaration with regards to Company /Firm Location** **Attach** a proof of address to claim points for the Eastern Cape base locality as the specific goal as advised in the tender / quotation qualifies the company/firm for the PPR of 2022 preference points claim. **Failure to submit the declaration and proof of address for each JV /Consortium member may result in awarding of 0 (zero) points preference points under Eastern Cape Locality.** This information will be verified from the FICA documents (Physical Address, Utility Bill, Telephone, Tax Clearance, lease agreement submitted by the bidder. **Failure to submit the declaration and proof of address may result in awarding of 0 (zero) points preference points under**	No	No
	Annexure I – (SBD 6.1.): Preferential Points Claim (Signed and Completed**).** **CSD report will be used to confirm other specific goals listed in Table 1 of the SBD 6.1 document.** **Failure to submit the preference points claim and proof of address may result in awarding of 0 (zero) points preference points under Eastern Cape locality.**		

13.	**Duly signed Letter of Authority MUST be submitted authorising the individual to sign** on behalf of the bidder if: **a)** If there are more than one Owner/ Director / Shareholder / Member / Trustee etc. **OR** **b)** If there is only one Director / Shareholder / Member / Trustee / Owner etc. and they are not the one completing the bid document. **Note:** The Letter of Authority MUST be signed by all directors of the Bidder (or a signed Board Resolution authorising the signatory will be accepted).	Yes	Yes
14.	**Priced Bills of Quantities completed in ink**.	Yes	Yes
The following will be applicable to Joint Ventures/Consortium			
Consortium/Joint Venture Agreement to enter in a Consortium / Joint Venture signed by all Consortium Members who are Duly Authorized.		Yes	Yes
Resolution of the Board of Directors to enter into a Consortium or Joint Venture from each member firm of the Consortium/Joint Venture for this Bid.		Yes	Yes
Letter of Authority of Signatory(individual) authorizing the Signatory to sign on behalf of the Consortium/JV. The Letter of Authority should be from each member firm and must be signed by all directors of each member firm (or Board Resolution will be accepted).		Yes	Yes
Declaration with regards to Company /Firm Location **Attach** a proof of address to claim points for the Eastern Cape base locality as the specific goal as advised in the tender / quotation qualifies the company/firm for the PPR of 2022 preference points claim. **Failure to submit the declaration and proof of address for each JV /Consortium member may result in awarding of 0 (zero) points preference points under Eastern Cape Locality.**			
Annexure I – (SBD 6.1.): Preferential Points Claim (Signed and Completed**).** **CSD report will be used to confirm other specific goals listed in Table 1 of the SBD 6.1 document.** **Failure to submit the preference points claim and proof of address may result in awarding of 0 (zero) points preference points under**			

KINDLY NOTE THAT, FAILURE TO SUBMIT THE REQUIRED MANDATORY DOCUMENTATION WITH THE BID WILL RESULT IN YOUR BID BEING DISQUALIFIED WITHOUT FURTHER CONSIDERATION.

Bidders shall take note of the following conditions:

1. The successful bidder will be required to submit a Letter of Good Standing from the Compensation Commission within 14 days after award and before the contract can be signed.
2. Performance Guarantee to be submitted within 14 days after award.
3. The Bid Validity period is 90 days.
4. An approved and project specific Health and Safety file within 14 days upon appointment.
5. An Approved Construction Methodology to proceed to work in phases.
6. No correction fluid to be used and all errors to be initialled.

Queries relating to the issue of these documents may be addressed in writing to:

Ms N. Norexe

tenders@ecdc.co.za or nnorexe@ecdc.co.za

1.2. STAGE 1: EVALUATION Of LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS AND LOCAL CONTENT DECLARATION

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the ECDC Supply Chain Management Policy, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition l) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. . General Conditions

1.1. ECDC Supply Chain Management policy makes provision for the promotion of local production and content.

1.2. ECDC Supply Management Policy prescribes that in the case of designated sectors, tenders must be advertised with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a three stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage functionality with a minimum threshold of 60% and third stage of price and specific goals.

1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

1.5. The local content (LC) as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = 1 - \left(\frac{x}{y} \right) \times 100$$

Where

x imported content

y bid price excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SATS 1268:2011 is accessible on http:/www.thedti/industrialdevelopment/ip.jsp at no cost

1.6. A bid will be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration : Summary Schedule) are not submitted as part of the bid documentation;

y is the bid price in Rand excluding value added tax (VAT) Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SA TS 1286:2011 is accessible on http://www.thdti.gov.za/industial development/ip.jsp at no cost.

2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid: Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in table 1 below.

   Bidder that fails to meet the minimum stipulated threshold for local production and content will be unacceptable and will not proceed to stage 2.

3.3 Table 1 provides the stipulated minimum threshold for local content and production for steel products and components for construction (as described in 3.2)

Table 1a: Minimum local content for Steel Value-added Products

Steel Construction Materials	Components	Local Content Threshold
Fabricated Structural Steel	Latticed steelwork, reinforcement steel, columns, beams, plate girders, rafters, bracing, cladding supports, stair stringers & treads, ladders, steel flooring, floor grating, handrailing and balustrading, scaffolding, ducting, gutters, launders, downpipes and trusses	100%
Joining/Connecting Components	Gussets, cleats, stiffeners, splices, cranks, kinks, doglegs, spacers, tabs, brackets	100%
Frames	Doors and Windows	100%
Roof and Cladding	Bare steel cladding, galvanised steel cladding, colour coated cladding	100%
Fasteners	Bolts, nuts, rivets and nails	100%
Wire Products	All fencing products: all barbed wire and mesh fencing, fabric/mesh reinforcing, gabions, wire rope/strand and chains, welding electrodes, nails/tacks, springs and screws	100%
Ducting and Structural Pipework	Non-conveyance tubing fabricated from steel sheeting and plate with structural supports	100%
Gutters, downpipes & launders	Fabricated materials made from sheeting associated with roof drainage systems	100%

Table 1b: Minimum local content for Primary Steel Products

Steel Construction Materials	Local Content Threshold
Plates (>4.5mm thick and supplied in flat pieces)	100%
Sheets (<4.5mm thick and supplied in coils)	100%
Galvanised and Colour Coated Coils	100%
Wire Rod and Drawn Wire	100%
Sections (Channels; Angles, I-Beams and H-Beams)	100%
Reinforcing bars	100%

……

SIGNATURE(S) OF BIDDERS(S)

DATE: ……

ADDRESS: ……

……

……

WITNESSES:

1. ……

2. ……

1.2. STAGE 2 - FUNCTIONALITY

Involves an evaluation of Functionality only – At this stage Bidders must score a minimum score of **70%** for functionality (services) in order to be evaluated for stage 3 (Preferential procurement points).

Bidder to note the following for Functionality Evaluation:

a) Adequate proof supporting the points claimed must be provided. (e.g. *documents, agreements, qualifications, previous experience, certifications, etc*.)

b) Failure to submit relevant information with supporting document and adequate proof may result in ECDC not being able to allocate points for the Evaluation Criteria outlined below.

Table 1: Functionality Evaluation Criteria – Stage 2

EXPERIENCE (Read with Schedule T.2.2.2(a) requirements)	Allocated Points
Reference letter for building/refurbishments/maintenance projects completed as stipulated below:	
(Bidder to submit a reference letter for each project completed.)	
5 or more reference letters	30
4 reference letters	20
3 reference letters	15
2 reference letters	10
Less than 2 reference letters	0
Document to be submitted for points allocation **The Bidder must demonstrate that they have the relevant experience in general building works submitting completed T.2.2.2 (a) reference forms or reference letters of completed general building works (Read with Schedule T.2.2.2(a) requirements)** Reference letters should indicate the following. • Signature of the client • Client's Letter head or Client Stamp • Company name, contact person, contact details (telephone number and email address) • Value of the project • Works carried out • Works have been completed on time /within the stipulated contract period • Good or better quality of workmanship • Assessment of the quality of work performed	

EXPERTISE (CV's and relevant qualification in the Built Environment of the Key Personnel to be included in Returnables) **Construction Manager (National Diploma or higher in The Built Environment Qualifications to be supplied with CV)**	
More than 10 years experience on general building contracts	15
Between 6 - 10 years' experience on general building contracts	10
Between 3 - 5 years' experience on general building contracts	5
Less than 3 years' experience on general building contracts	0
Construction Supervisor (National Certificate or higher in The Built Environment Qualifications to be supplied with CV)	
More than 10 years experience on general building contracts	10
Between 6 - 10-years' experience on general building contracts	5
Between 3 – 5 years' experience on general building contracts	3
Less than 3 years' experience on general building contracts	0
Health and Safety Officer (Professionally registered CHSO with the SACPCMP)	
10 years or more experience as a Health and Safety Officer in the construction industry	5
5 years but less than 10 years' experience as a Health and Safety Officer in the construction industry	3
3 years but less than 5 years as a Health and Safety Officer in the construction industry	2
Less than 3 years' experience as a Health and Safety Officer in the construction industry	0
PROJECT IMPLEMENTATION PLAN	
Project implementation plan that clearly details the execution on commercial projects	10
Project implementation plan with no detailed execution on commercial projects	0
TOTAL MAXIMUM ACHIEVEABLE POINTS	**70**
MINIMUM POINTS REQUIRED	**49**

a) Only bids that have achieved the minimum qualifying score for functionality will be evaluated further in terms of preferential procurement points (stage 3).

b) All bids that fail to achieve the minimum score will be disqualified.

c) The minimum qualifying score (in a percentage) for functionality shall be calculated as follows:

$$Ps = \frac{So}{Ms} x100$$ Where:

Ps = percentage scored for functionality by bid under consideration

So = Total score for bid under consideration

Ms = Maximum possible score

The percentages of each panel member shall be added and divided by the number of panel members to establish the average percentage obtained by each bidder for functionality.

1.3. Stage 3 – Preference Procurement Point - Evaluation Criteria

Preference points for this bid shall be awarded for price and the specific goal. The maximum points for this bid are allocated as follows:

CRITERIA	POINTS
Price	80
Specific goal	20
TOTAL POINTS	100

a) Points awarded for price based will be based on the 80/20 Preference point systems

b) The points scored by the tenderer/bidder for Price will be added to the points scored for ECDC specific goal to obtain the bidder's total points scored out of 100 points.

c) In the event that two or more bids have scored equal total points, the successful bid will be the one scoring the highest number of preference points for ECDC specific goal

d) However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for specific goal, the successful bid must be the one scoring the highest score for functionality.

e) Should two or more bidders/tenderers be equal in all respects, the award shall be decided by the drawing of lots.

f) The bidder obtaining the highest number of total points will be awarded the contract.

g) Points scored will be rounded off to the nearest 2 decimal places.

h) Price

(i) The lowest acceptable bid will score 80 points for price.

(ii) The following formula will be used to calculate the points out of 80 for price in respect of the bid/tender.

(iii) Preference points for price shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;

DETAILS	80/20 PREFERENCE POINT SYSTEM
Rand value (competitive bids or quotations) all applicable taxes included.	• Equal and above R30 000 to R50 million, inclusive of all applicable taxes. Below R30 000 if and when considered to be appropriate
Formulae	$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right)$
	Ps = Points scored for comparative price of bid / offer under consideration Pt = Comparative price of bid / offer under consideration Pmin = Comparative price of lowest acceptable bid / offer

Annexure A

Standard Conditions of Tender

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Construction Procurement (January 2019) as published in Government Gazette No 42622, Board Notice 423 of 2019 on the 8th of August 2019 (See www.cidb.org.za).

A.1 General

A.1.1 Actions

A.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 A.2 and A.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

A.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. Tenderers 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 at the start of any deliberations relating to 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.

A.1.1.3 The employer shall not seek, and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

A.1.2 Tender Documents

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

A.1.3 Interpretation

A.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.

A.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.

A.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) in compatibility 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 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.

A.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 readily read, copied, and recorded. Communications 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.

A.1.5 Cancellation and Re-Invitation of Tenders

A.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.

A.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

A.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

A.1.6 Procurement procedures

A.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to A.3.13, be concluded with the tenderer who in terms of A.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.

A.1.6.2 Competitive negotiation procedure

A.1.6.2.1 Where the tender data require 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 A.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of A.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

A.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 A.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.

A.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.

A.1.6.2.4 The contract shall be awarded in accordance with the provisions of A.3.11 and A.3.13 after tenderers have been requested to submit their best and final offer.

A.2 Tenderer's obligations

A.2.1 Eligibility

A.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.

A.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.

A.2.2 Cost of tendering

A.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.

A.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.

A.2.3 Check documents

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

A.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.

A.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.

A.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.

A.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.

A.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.

A.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.

A.2.10 Pricing the tender offer

A.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 fourteen (14) days before the closing time stated in the tender data.

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

A.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.

A.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.

A.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.

A.2.12 Alternative tender offers

A.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.

A.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.

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

A.2.13 Submitting a tender offer

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

A.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.

A.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.

A.2.13.4 Sign (Signature by authorized personnel) 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.

A.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.

A.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.

A.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.

A.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.

A.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.

A.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.

A.2.15 Closing time

A.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.

A.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.

A.2.16 Tender offer validity

A.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.

A.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.

A.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 stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).

A.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".

A.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.*

A.2.18 Provide other material

A.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 employer's request, the employer may regard the tender offer as non-responsive.

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

A.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.

A.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.

A.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.

A.2.22 Return of other tender documents

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

A.2.23 Certificates

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

A.3 The employer's undertakings

A.3.1 Respond to requests from the tenderer

A.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.

A.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.

A.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) working 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.

A.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.

A.3.4 Opening of tender submissions N/A

A.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.

A.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 prices, number of points ECDC specific goal and time for completion for the main tender offer only.

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

request.

A.3.5 Two-envelope system

A.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 tenderers' 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.

A.3.5.2 Evaluate 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 specific goals. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

A.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.

A.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.

A.3.8 Test for responsiveness

A.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.

A.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.

A.3.9 Arithmetical errors, omissions and discrepancies

A.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.

A.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 A.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-item 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.

A.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.

A.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.

A.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.

A.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.
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.

A.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.

A.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.

A.3.13 Acceptance of tender offer

Accept the 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.

A.3.14 Prepare contract documents

A.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 other revisions agreed between the employer and the successful tenderer.

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

A.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.

A.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.

A.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.

A.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.

ANNEXURE B

ADDITIONAL CONDITIONS OF TENDER OF ECDC

Where the CIDB standard condition of tender does not address the following, clauses on the ECDC standard conditions of tender, the ECDC Standard condition of tender will be additional.

1.1 Alteration or withdrawal of Proposals

Bidders may withdraw their proposal by written notification on or before the date Specified for the evaluation of Bids.

1.2 Alternative Bid

Alternative Bids will not be accepted

1.3 Costs for preparation of Proposals/presentations

The costs incurred by Bidders in respect of the attendance of any briefing or presentation meetings if necessary or costs incurred in preparing any proposal will be borne by the Bidder and the ECDC shall in no way be liable to reimburse such costs incurred.

1.4 Ownership of Proposals and presentations

The ECDC shall on receipt of any proposal relating to this request and submitted in accordance with the procedure set out herein, shall become the owner thereof and the ECDC shall not be obliged to return any proposal.

1.5 Tax Clearance Certificate requirement

It is a condition of all bids inclusive of foreign bidders / individuals) that the South African taxes of the successful bidder must be in order.

The bidders' Tax status will be verified on the CSD prior to the bid award and where the preferred bidders is not compliant, **7 working days** will be granted for remedy, failing which the bidder will be disqualified.

In Bids where Consortia/Joint venture/Sub-Contractors are involved, each party will be verified separately for proof of Tax Compliance Status.

In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate. Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za

1.6 Confidentiality

The entire process of calling for Bids was initiated by the ECDC in terms of its procurement policy and is confidential. All deliberations in respect of the acceptability or otherwise of the proposals shall be conducted in closed sessions and members of the Evaluation and Procurement Committee and prospective service providers are bound to treat all discussions as highly confidential.

The service provider shall not divulge directly or indirectly to any other person than a person employed by ECDC, make copies or extracts of any of the information obtained during this assignment, while they may have access to ECDC's trade secrets, confidential information which may include, specifications, plans, drawings, pattern, samples, written instructions, notes, memoranda, technical information, know-how or process or method or any other records of whatsoever nature without the written consent of ECDC and shall surrender all these items to ECDC on termination of the assignment or on demand of ECDC.

The service provider shall not be entitled to make use of the information whether for its own benefit or that of others, to make available or derive any profit from any of the information or knowledge specifically related to the business or affairs of ECDC.

Any document shall remain the property of ECDC and shall be returned (all copies) to ECDC on completion of the contract if so required by ECDC.

1.7 Inventions Patent and Copy-Rights

The service provider cedes, assigns and transfers to ECDC all rights, title and interest in and to any and all copyright in all works and inventions which relates to the business of ECDC (which includes, but is not limited to, methodologies and products) which arises within the course and scope of this services will be assigned to ECDC.

The Service Provider shall Provide ECDC the sole and exclusive right to alter and adapt the work.

The service provider shall indemnify ECDC against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by ECDC.

1.8 Ethics

Any attempt by an interested Bidder to obtain confidential information, or enter into unlawful agreements with competitors or influence the various ECDC Procurement Committee's or the ECDC during the process of examining, evaluating and comparing Bids/Proposals or Proposals will lead to the rejection of its bid/quotation/proposal in its entirety.

The Bidder must declare any business or other interests it has with the ECDC or any employee of the ECDC, as per the declaration of interest form annexed hereto marked in Section D; failing which the Bidder shall be automatically disqualified from further participation in the Bid or call for proposals. The disqualification will be applicable at any stage of the bidding and / or engagement process.

1.9 Competition

Bidders and their respective officers, employees and agents are prohibited from engaging in any collusive action with respect to the bidding process which serves to limit competition amongst bidders.

In general, the attention of bidders is drawn to Section 4(1) (b) (iii) of the Competition Act 1998 (Act No. 89 of 1998) (the Competition Act) that prohibits collusive biding.

An agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder/s is / are or a contractor(s) was / were involved in collusive bidding.

If bidders have reason to believe that competition issues may arise from any submission of a response to this bid invitation they may make, they are encouraged to discuss their position with the competition authorities before submitting response.

Any correspondence or process of any kind between bidders and the competition authorities must be documented in the responses to this invitation to bid.

In this regard bidders are required to complete the Certificate of Independence Bid Determination, failing which the Bidder shall be automatically disqualified from further participation in the Bid or call for proposals. The disqualification will be applicable at any stage of the bidding and / or engagement process.

If a bidder (s) or contractor (s), based on reasonable grounds or evidence obtained by ECDC, has /have engaged in the restrictive practice referred to above, ECDC may refer the matter to the Competition Commission for investigation and possible imposition of an administrative penalty as contemplated in Section 59 of the Competition Act 89 of 1998.

If a bidder(s) or contractor(s) has / have been found guilty by the Competition Commission of the restrictive practice referred to above, ECDC may in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such an item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) for conducting business with the public sector for a period of not exceeding 10 (ten) years and / or claim damages form the bidder(s) / contractor(s) concerned.

1.10 Cancellation of Bid Process

The ECDC shall be entitled, within its sole and entire discretion, to cancel this Bid/Call for Proposals and/or Quotations at any time and shall notify the interested service providers accordingly. The ECDC shall in no way be liable for any damages whatsoever, including, without limitation, damages for loss of profit, in any way connected with the cancellation of this bid. The publication of the bid does not commit the ECDC to appoint any of the qualifying Bidders.

1.11 Interviews

In terms of the bid evaluation process short listed bidders may be interviewed. This will entail the bidder being invited to a venue as determined by the bid committee. All transport and accommodation costs incurred by the bidder will be for the bidders account and will not be reimbursed in any way. Failure to attend a scheduled interview will lead to immediate disqualification from the bid process. The ECDC reserves the right to appoint a bidder without conducting interviews.

1.12 Contract award

The successful bidder will be notified of the bid award in writing by the Procurement Department.

The acceptance of any proposal shall only be confirmed with the conclusion of a final written signed service level agreement or any other appropriate agreement between the ECDC and the successful Bidder, in terms of which the rights and duties of the parties are recorded, which agreement shall regulate the relationship between the ECDC and the Successful Bidder.

As a guideline regarding the content of the service level agreement, the bidder is referred to the JBCC PBA (6.2 edition).

Until such time that an appropriate agreement has been concluded in writing between the ECDC and the successful Bidder, no rights shall be conferred nor shall any legitimate expectations be conferred to the successful Bidder to carry out the works or services provided for in this Bid.

The ECDC, the Accounting Officer and the Bid Committee (as the case may be) does not bind itself to accept either the lowest (price),highest (points) or any other bid and reserves the right to accept the bid which it deems to be in the best interest of the Institution even if it implies a waiver by the ECDC, the Accounting Officer, or the Bid Committee, (as the case may be) of certain requirements which the ECDC, the Accounting Officer, the Bid Committee, (as the case may be) considers to be of minor importance and not complied with by the bidder.

The ECDC will not entertain any request of feedback before the final awarding of the contract.

1.13 Supplier Due Diligence

ECDC reserves the right to conduct supplier due diligence prior to final award or at any time during the contract period. This may include site visits and requests for additional information.

1.14 Disclaimer

This Bid document has been prepared for the purpose of providing information to interested Bidders. The provision of any additional information about the organization to Bidders, are disclosed and will be made available to enable the prospective Bidders to submit comprehensive proposals.

Interested Bidders are accordingly required to conduct their own due diligence in respect of the ECDC and its business operations and the nature and scope of the services required.

The ECDC accepts no responsibility for the fairness, accuracy or completeness of any information or opinions, for any errors, omissions or misstatements, negligent otherwise, made by any person in this Bid document or at any Compulsory briefing session.

The ECDC accepts no liability for any loss incurred by any person(s) due to events or action taken as a consequence of the preparation and dissemination of this bid request.

Except in cases of criminal negligence or wilful misconduct, and in the case of infringement the bidder shall not be liable to ECDC, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the bidder to pay penalties and/or damages to ECDC; and

The aggregate liability of the bidder to ECDC, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

1.15 Contact and Communication

A nominated official of the bidder(s) can make enquiries in writing, to the specified person on the table below. Bidder(s) must reduce all telephonic enquiries to writing and send to the above email address.

The delegated office of ECDC, Procurement Department, may communicate with Bidder(s) where clarity is sought in the bid proposal.

Any communication to an official or a person acting in an advisory capacity for ECDC in respect of the bid between the closing date and the award of the bid by the Bidder(s) is discouraged.

All communication between the Bidder(s) and ECDC must be done in writing.

Details	Bidding Procedure
Department	Procurement Department
Contact person	Ms N. Norexe
Telephone number	043 704 5600
E-mail address	tenders@ecdc.co.za

ETHICS & FRAUD HOTLINE REPORTING CHANNELS

HOTLINE DETAILS

Advance Call
Ethics & Fraud Hotline

HOTLINE DETAILS	
Hotline Name:	ECDC Ethics & Fraud Hotline
Contact Number:	0800 116 665
WhatsApp Number:	0860 004 004
Dedicated Email Address:	ecdc@behonest.co.za aidc@behost.co.za
SMS Number:	48691
Free Post	BNT165, Advance Call Pty (Ltd), Brooklyn Square, 0075
Website Link	www.behonest.co.za
Chat	www.behonest.co.za

Whilst all due care has been taken in connection with the preparation of this bid, ECDC makes no representations or warranties that the content of the bid or any information communicated to or provided to Bidder(s) during the bidding

process is, or will be, accurate, current or complete. ECDC, and its employees and advisors will not be liable with respect to any information communicated which may not be accurate, current or complete.

If Bidder(s) finds or reasonably believes it has found any discrepancy, ambiguity, error or inconsistency in this bid or any other information provided by ECDC (other than minor clerical matters), the Bidder(s) must promptly notify ECDC in writing of such discrepancy, ambiguity, error or inconsistency in order to give ECDC an opportunity to consider what corrective action is necessary (if any).

Any actual discrepancy, ambiguity, error or inconsistency in the bid or any other information provided by ECDC will, if possible, be corrected and provided to all Bidder(s) without attribution to the Bidder(s) who provided the written notice.

All persons (including Bidder(s)) obtaining or receiving the bid and any other information in connection with the Bid or the Tendering process must keep the contents of the Bid and other such information confidential, and not disclose or use the information except as required for the purpose of developing a proposal in response to this BidAll persons (including Bidder(s)) obtaining or receiving the bid and any other information in connection with the Bid or the Tendering process must keep the contents of the Bid and other such information confidential, and not disclose or use the information except as required for the purpose of developing a proposal in response to this Bid

T2.2. - Returnable schedules

T2.2.1 – Declarations:

T2.2.2 – Functionality Evaluation Schedules

ANNEXURE C: SUPPLIER INFORMATION/COMPANY ENTERPRISE QUESTIONNAIRE

Note: Mandatory Requirement. Failure to complete and Sign this document will result in the bid being non responsive.

Important Note: 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.

Legal Name of Bidder: (Same as CSD)	
Trading Name of Bidder: (Same as CSD)	
Registration Number (Same as CSD)	
Physical Address	
Postal Address	
Contact Person (of the JV if a the Bidder is a JV)	
Title/Position in the Firm	
Mobile Number (of the JV if a the Bidder is a JV)	
Bidder Telephone Number (of the JV if a the Bidder is a JV)	

Facsimile Number	
Email Address of Contact Person (of the JV if a the Bidder is a JV)	
Email Address of Bidder(of the JV if a the Bidder is a JV)	
VAT Registration Number (Same as CSD)	
Central Supplier Database Number	**MAAA**
CIDB Registration Number	

Are the Accredited Representative in South Africa for the Goods/Services/Works Offered?	□ Yes □ No (If Yes enclose Proof)	**Are you a foreign based supplier for the Goods/Services/Works Offered?**	□ Yes □ No (If Yes, answer the questionnaire Below)

QUESTIONAIRE TO BIDDING FOREIGN SUPPLIERS

Is the Entity a resident of the Republic of South Africa (RSA)	□ Yes	□ No
Does the Entity have a branch in the RSA?	□ Yes	□ No
Does the Entity have a permanent establishment in the RSA?	□ Yes	□ No
Does the Entity 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 register for a Tax Compliance Status system pin code from the South African Revenue (SARS) and if not register

VERY IMPORTANT

Where a person within the Bidding Entity is an Employee of the State, Bidder should

a. submit a signed letter on a letter head from their Accounting Officer/Accounting Authority (AO/AA of the Government Institution where they are employed) stating that they are not prohibited from conducting business with the State in terms of Section 8 of the Public Administration Management Act, 2012 (Act No.11 of 2014- "The PFMA")
b. submit a signed letter on a letter from their AO/AA granting permission to perform other remunerative work outside of their employment where the PAMA does not apply to such an employee

ECDC reserves the right to verify such information from their AO/AA

SERVICE PROVIDER ACKNOWLEDGEMENT OF REQUEST AND TERMS AND CONDITIONS:

I..... (NAME) HEREBY ACCEPT THE TERMS OF THIS REQUEST FOR BID AND ACKNOWLEDGE THAT I AM APPROPRIATELY DELEGATED TO RESPOND ON BEHALF OF (ATTACH DELEGATION OF AUTHORITY)

.....

(NAME OF BIDDER).

Print Name _____ Date _____

Designation _____ Signature _____

Annexure D: Location		
1	Where is the Bidder's main office?	
	Other offices:	

Annexure G: BIDDER'S DISCLOSURE (SBD4)

Note: Mandatory Requirement. Failure to complete and Sign this document will result in the bid being non responsive.

1. PURPOSE OF THE FORM

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

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

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest[1] in the enterprise,

employed by the state? **YES/NO**

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

Full Name	Identity Number	Name of State institution

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

2.2.1 If so, furnish particulars:

……

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

……

2.3 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 consortium[2] will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

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

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

[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.

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

SIGNATURE OF BIDDER OF DELEGATED AUTHORITY		**DATE**	

ANNEXURE H: STATEMENT OF CONSENT TO DATA PROCESSING

In terms of the provisions of the Protection of Personal Information Act, 2013 (Act No. 4 of 2013)

1. I, _____(full names of the **client/applicant**),

   Identitynumber_____**("the applicant")**

   do hereby grant my consent to the Eastern Cape Development Corporation ("the ECDC") and its appointed processor to process my personal data for the purpose of any or all of the undermentioned actions, being the legitimate reasons for processing and/or using my personal data.

2. I accept that my personal information will only be utilized for the purposes it was collected, that the information will only be retained for as long as is necessary and required by law, and that I have the right to view such information at any time, as well as requested correction or deletion of my personal information held by the ECDC.
3. I am aware that I may withdraw my consent at any time by using the relevant Data Subject Consent Withdrawal Form.
4. I herewith consent to the ECDC official / staff member / employee or agent collecting and having access to my personal information.
5. I expressly consent to the ECDC official / staff member / employee or agent to collect and process this information for the purpose of **considering my application for funding / leasing / employment alternatively for considering our bid document**.
6. I expressly consent to the ECDC or its official / staff member / employee or agent having access to my personal information contained in my application for lease, employment, funding, my bid document or any other administrative document required by the ECDC for processing.
7. I expressly consent to the ECDC or its official / staff member / employee or agent using my personal information to communicate with me in person / via telephone / email / video call / fax / WhatsApp / any form of social media.
8. I expressly consent that the ECDC or its official / staff member / employee or agent may discuss any of my personal information with any of its officials / staff members / employees or agents that may at any stage of my application be involved in considering same and forward any such information to any ECDC relevant committee or forum.
9. I expressly consent to the ECDC or its official / staff member / employee or agent **handing over any outstanding accounts to debt collection third parties (applicable to properties/development finance and business support unit).**
10. I expressly consent to the ECDC or its official / staff member / employee or agent handing over my personal information for purposes of verification of my credit profile or record, references or any purpose required in terms of the law.

SIGNATURE of the DELEGATED AUTHORITY		**DATE**	

Annexure I: Preference Point Claim in terms of the Preferential Procurement Regulations 2022

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
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 **Principle applicable for this tender /quotation is:**

a) The value of this bid is estimated not to exceed R50 000 000 (all applicable taxes included) and therefore the applicable preference point system for this tender is the 80/20 preference point system.

1.3 Points for this tender shall be awarded for:

(a) Price; and

(b) Specific Goals.

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

	POINTS
PRICE	80
SPECIFIC GOALS	
51% and above black owned enterprise	10
Eastern Cape Based Supplier	05
51 % and above woman owned enterprises.	03
51 % and above youth owned enterprises	02
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

"tender" means a written offer in the form determined by an organ of state in response to an invitation to

(a) provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

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

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

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

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

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

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

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

3.2.1. POINTS AWARDED FOR PRICE

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

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

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 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 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

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

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

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

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

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

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

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
SPECIFIC GOALS				
51% and above black owned enterprises		10		
Eastern Cape Based Supplier		05		
51 % and above woman owned enterprises.		03		
51 % and above youth owned enterprises		02		

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: …….

…….

……

……

ANNEXURE K: SBD 6.2 – Declaration Certificate For Local Production And Content for Designated Sector

Note: Mandatory Requirement. Failure to complete and Sign this document will result in the bid being non responsive.

1.2. STAGE 1: EVALUATION Of LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS AND LOCAL CONTENT DECLARATION

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the ECDC Supply Chain Management Policy, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition l) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

3. . General Conditions

3.1. ECDC Supply Chain Management policy makes provision for the promotion of local production and content.

3.2. ECDC Supply Management Policy prescribes that in the case of designated sectors, tenders must be advertised with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

3.3. Where necessary, for tenders referred to in paragraph 1.2 above, a three stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage functionality with a minimum threshold of 60% and third stage of price and specific goals.

3.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

3.5. The local content (LC) as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = 1 - \left(\frac{x}{y} \right) \times 100$$

Where

z imported content

aa bid price excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SATS 1268:2011 is accessible on http:/www.thedti/industrialdevelopment/ip.jsp at no cost.

3.6. A bid will be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration : Summary Schedule) are not submitted as part of the bid documentation;

y is the bid price in Rand excluding value added tax (VAT) Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SA TS 1286:2011 is accessible on http://www.thdti.gov.za/industial development/ip.jsp at no cost.

4. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid: Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in table 1 below.

Bidder that fails to meet the minimum stipulated threshold for local production and content will be unacceptable and will not proceed to stage 2.

The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011 for this bid is/are as follows

Table 1

Designated Sector /Sub-sector/ Industries	Minimum threshold for local content
Fabricated Structural Steel	100%
Roof sheeting	100%
Gutters and Downpipes	100%
Wire Products	100%
Cement	100%
Reinforcing Bars	100%
Electrical Cables Products	90%
Valves and Actuators	70%
HDPE, PVC, PP and GRP pipes	100%

For more details on the designated sectors for local production and their minimum threshold and any amendment from time to time, please visit the following website http: //www.thedt.gov.za/industrial development/ip.jsp

2. **Does** any portion of the services, works or goods offered have any imported content?
(**Tick Applicable Box)**

YES		**NO**	

2.1. If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid.

The relevant rates of exchange information is accessible on **www.reservebank.co.za.**

Indicate the rate(s) of exchange against the appropriate currency in the table below:

Currency	**Rates of exchange**
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

3. Where, after the award of a Bid, challenges are experienced in the meeting the stipulated minimum threshold for local content, the DTI must be informed accordingly in order for the DTI to verify and consultation with the AO/AA provide directive in this regard.

……
SIGNATURE(S) OF BIDDERS(S)

DATE: ……

ADDRESS: ……

……

……

WITNESSES:

1……

2……

LOCAL CONTENT DECLARATION BY THE CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID No. .....

ISSUED BY: (Procurement Authority / Name of Institution):

.....

NB

The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on http://www.thdti.gov.za/industial development/ip.jsp

Bidders should first complete Declaration D After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C.

Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph C below.

Declaration D and E should be kept by the Bidder for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ……..... (full names), do hereby declare, in my

capacity as …… ……..

of .....(name of bidder entity), the following:

The facts contained herein are within my own personal knowledge.

I have satisfied myself that

- the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011 and

The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 and information contained in Declaration D and E which has been consolidated in Declaration C above :

Bid price, excluding VAT (y)	R
Imported content (x)	R
Stipulated minimum threshold for Local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.

The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E

(d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

NAME: _____

SIGNATURE: _____ **DATE:** _____

WITNESS No. 1 _____ **DATE:** _____

WITNESS No. 2 _____ **DATE:** _____

The below listed declarations are attached in the next three pages that follow;

- **Declaration C SATS 1286.2011**
    - Local Content Declaration – Summary Schedule
- **Declaration D SATS 1286.2011**
    - Imported Content Declaration – Supporting Schedule to declaration C
- **Declaration E SATS 1286.2011**
    - Local Content Declaration _- Supporting Schedule to declaration C

- Bidders should first complete annexure D, after completing annexure D, bidders should complete annexure E and then consolidate the information on annexure C.
- Annexure C should be submitted with the with the bid documentation on the closing date in order to substantiate the declaration made on annexure J.

- The successful bidder is required to continuously update annexures C, D and E with the actual for the duration of the contract.
- Bidders should obtain copies of certificates of trading the subject materials from manufactures/suppliers and attach them in the bid document in order to substantiate annexure J above.

NB: Tenderers to complete and sign annexures C, D and E even if they claim 100% of local content

Templates of Declarations C, D and E follow.

Annexures C, D and E

Annex C

(C1)	**Tender No.**	ECDC/INFRA/32/012024
(C2)	**Tender description:**	Refurbishment and Construction of Warehouse on ERF 2696, 14 Timber Street, Vulindlela Heights - (Mthatha Cluster G)
(C3)	**Designated product(s)**	Steel, Cement, Plastic Pipes, Electrical Cables, Cement, Valves & Actuators, etc
(C4)	**Tender Authority:**	Eastern Cape Development Corporation
(C5)	**Tendering Entity name:**	
(C6)	**Tender Exchange Rate:**	USF ____ EU ____ GBP ____
(C7)	**Specified local content %**	

Note: VAT to be excluded from all calculations

Tender item No's (BoQ reference)(Item/Page No)	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)	Tender Qty	Total tender value	Total exempted imported content	Total Imported content
(C8)	*(C9)*	*(C10)*	*(C11)*	*(C12)*	*(C13)*	*(C14)*	*(C15)*	*(C16)*	*(C17)*	*(C18)*	*(C19)*
	STEEL PRODUCTS										
36/32	8mm Diameter reinforcement						100.00%	0.04Tonnes			
37/32	10mm Diameter reinforcement						100.00%	0.10Tonnes			
38/33	20mm Diameter reinforcement						100.00%	0.28Tonnes			
39/33	16mm Diameter reinforcement						100.00%	1.16Tonnes			
40/33	12mm Diameter reinforcement						100.00%	2.06Tonnes			
41/33	10mm Diameter reinforcement						100.00%	1.00Tonnes			
42/33	Ref 617 fabric reinforcement						100.00%	9m2			
43/33	Ref 617 fabric reinforcement						100.00%	90m2			
7/36	75mm Wide reinforcement built in horizontally.						100.00%	673m			
8/36	150mm Wide reinforcement built in horizontally.						100.00%	849m			
9/36	150mm Wide reinforcement built in horizontally in foundations.						100.00%	1747m			
10/36	110 x 75mm Lintels						100.00%	50m			
11/36	40 x 1,6mm Wall tie 500mm long						100.00%	198No			
12/36	40 x 1,6mm Wall tie 500mm long						100.00%	337No			
13/36	30 x 1,6mm Cramp 500mm						100.00%	120No			
14/37	30 x 1,6mm Roof tie 1,5m long						100.00%	11No			
15/37	30 x 1,6mm Roof tie 1,5m long						100.00%	3No			
2/43	IBR Metal roof sheeting						100.00%	747m2			
3/43	IBR Metal side cladding						100.00%	251m2			
5/43	Ridge flashing 462mm girth						100.00%	48m			
6/43	Barge flashing 462mm girth						100.00%	40m			
7/43	Apex flashing 462mm girth						100.00%	5m			
8/43	External corner flashing 462mm girth						100.00%	7m			
9/43	Counter flashing 154mm girth						100.00%	6m			
10/44	Headwall flashing 308mm girth						100.00%	6m			
11/44	Drip flashing 154mm girth						100.00%	124m			
12/44	Broad flute serrated closers						100.00%	107m			
13/44	Narrow flute serrated closers						100.00%	107m			
16/44	Turbine ridge mounted ventilator						100.00%	4No			
1/50	Stainelss steel hinges						100.00%	28No			
22/53	Stainless steel towel rail						100.00%	1No			
29/53	10mm Diameter steel dowel 100mm long						100.00%	24No			
1/55	180 x 70mm x 21kg/m Parallel flange columns.						100.00%	0.25Tonnes			
2/55	203 x 133mm x 25kg/m I-section rafters.						100.00%	0.25Tonnes			
		CONTINUES ON NEXT PAGE									

Annex C

3/56	Double pitched portal frames 13,67m wide x 6,39m high extreme of 305 x 165mm x 41kg/m I-section rafters and columns (In No 9)						100.00%	9.13Tonnes			
4/56	Lipped channel section purlins.						100.00%	3.58Tonnes			
5/56	Lipped channel section girts.						100.00%	1.39Tonnes			
6/56	50,8 x 3,0mm Circular hollow section stay.						100.00%	0.09Tonnes			
7/56	76,2 x 3,0mm Circular hollow section bracing.						100.00%	0.47Tonnes			
8/56	Angle section false rafter.						100.00%	0.16Tonnes			
9/56	Angle section anti-sag rails.						100.00%	0.73Tonnes			
10/56	Angle section cladding rails.						100.00%	0.05Tonnes			
11/56	High tensile bolts (class 8.8).						100.00%	0.15Tonnes			
12/56	M16mm Diameter x 600mm long holding down bolt with 60 x 60 x 6mm plate welded 10mm from one end of the bolt embedded in top of concrete including washers and two nuts.						100.00%	80No			
1/58	Double gate 1800 x 2023mm high in equal leaves						100.00%	1No			
2/59	Aluminium Purpose made window 1000 x 900mm high						100.00%	1No			
3/59	Aluminium Purpose made window 1200 x 900mm high						100.00%	2No			
4/59	Aluminium Purpose made window 1400 x 900mm high						100.00%	1No			
5/59	Aluminium Purpose made window 2500 x 1325mm high						100.00%	1No			
6/60	Aluminium Purpose made window 600 x 600mm high						100.00%	5No			
7/60	Aluminium Purpose made window 600 x 900mm high						100.00%	1No			
8/60	Chain operated slatted roller shutter for 2500 x 2125mm high						100.00%	1No			
9/60	Chain operated slatted roller shutter for 3600 x 2125mm high						100.00%	2No			
14/74	Reno mattress size 2110 x 1000 x 300mm high consisting of 150-300mm selected loose stones tightly wrapped in 80 x 100 x 2.2mm galvanised mesh, including preparation of ground, etc., including filling voids with cement mortar.						100.00%	4No			
15/74	Reno mattress size 2110 x 1000 x 300mm high consisting of 150-300mm selected loose stones tightly wrapped in 80 x 100 x 2.2mm galvanised mesh, including preparation of ground, etc., including filling voids with cement mortar.						100.00%	2No			
27/76	Reinforcement various diameters						100.00%	0.05Tonnes			
28/76	Type 289 fabric reinforcement						100.00%	26m2			

CONTINUES ON NEXT PAGE

Annex C

45/77	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 0,5m and not exceeding 1,0m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere)						100.00%	1No			
46/78	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 1,0m and not exceeding 1,5m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere)						100.00%	1No			
47/78	550mm Diameter x 176kg type 2A heavy duty cast iron manhole cover and frame.						100.00%	2No			
55/79	150 x 125mm High Aluminium seemless eaves gutter						100.00%	107m			
56/79	150 x 125mm alumiunium stopped end						100.00%	6No			
57/79	Aluminium outlet for rainwater pipe						100.00%	11No			
58/79	75 x 75mm Aluminium rainwater pipes						100.00%	56m			
59/79	75 x 75mm Aluminium bend						100.00%	8No			
60/79	75 x 75mm Aluminium shoe						100.00%	13No			
115/84	225 x 225 x 100mm x 10kg Cast iron stopcock box including brick chamber below 500mm deep internally.						100.00%	2No			
12/96	Ref 617 fabric reinforcement						100.00%	23m2			
13/96	Ref 617 fabric reinforcement						100.00%	13m2			
21/102	Ref 617 fabric reinforcement						100.00%	194m2			
29/103	75mm Wide reinforcement built in horizontally.						100.00%	3702m			
35/104	152 x 152mm Gate post 2400mm high with UV stabilised polymer cap, 'locking Recess Mechanism' to secure panel edges and including 450 x 450 x 900mm deep cement concrete 25MPa/19mm stone) base including all excavation in earth, backfilling and ramming.						100.00%	4No			
36/104	Double swing gate of in equal leaves, size 4600 x 1800mm high						100.00%	1No			
37/104	Double swing gate of in equal leaves, size 5000 x 1800mm high						100.00%	1No			
1/109	Stout barrier fencing 1800mm high including, intermediate posts, straining posts, stays and end posts, straining wires, diamond mesh etc., covered with shade cloth, installed complete.						100.00%	82m			
4/110	Pedestrian gate size 900 x 1500mm high						100.00%	2No			
5/110	Double vehicle gate size 3800 x 1500mm high						100.00%	2No			
	Electrical Installation										
AF.1	P2000 galvanised trunking and covers						100.00%	312m			
AF.3	P2000 - 90degree bend						100.00%	20No			
AF.5	P2000 - T Junction						100.00%	20No			
AF.7	300 x 50mm Galvanised welded wire mesh cable trays						100.00%	100m			
AF.9	300mm Horizontal bends (90Degrees)						100.00%	6No			
AF.11	300mm Tee section						100.00%	6No			
		CONTINUES ON NEXT PAGE									

Annex C

	Mechanical Installtion Fire Protection										
2.1.3	25mm Mild steel pipe						100.00%	120m			
2.1.4	32mm Mild steel pipe						100.00%	80m			
	PLASTIC PRODUCTS										
34/76	50mm uPVC pipe						100.00%	10m			
35/76	110mm uPVC pipe						100.00%	4m			
36/76	110mm uPVC pipe						100.00%	22m			
37/77	110mm uPVC pipe						100.00%	20m			
38/77	50mmuPVC bend						100.00%	5No			
39/77	110mm uPVC bend						100.00%	9No			
40/77	110mm uPVC access bend						100.00%	5No			
41/77	50mm uPVC junction						100.00%	2No			
42/77	110mm uPVC junction						100.00%	3No			
43/77	110mm uPVC access junction						100.00%	5No			
44/77	110mm uPVC dished gulley						100.00%	3No			
52/78	110mm PVC Cleaning eye						100.00%	1No			
84/82	40mm uPVC pipes						100.00%	15m			
85/82	50mm uPVC pipes						100.00%	8m			
86/82	40mm uPVC pipes						100.00%	15m			
87/82	50mm uPVC pipes						100.00%	8m			
88/82	110mm uPVC pipes						100.00%	11m			
89/83	50mm Reducer.						100.00%	2No			
90/83	40mm Bend.						100.00%	6No			
91/83	50mm Bend.						100.00%	3No			
92/83	110mm Bend.						100.00%	4No			
93/83	50mm Junction.						100.00%	1No			
94/83	110mm Pan connector.						100.00%	4No			
95/83	40mm Access bend.						100.00%	8No			
96/83	50mm Access bend.						100.00%	3No			
97/83	110mm Access bend.						100.00%	4No			
98/83	40mm Access junction.						100.00%	4No			
99/83	50mm Access junction.						100.00%	2No			
100/83	50mm Reducing access junction.						100.00%	2No			
101/83	110mm 'GI Two-way' vent valve.						100.00%	2No			
103/83	32mm HDPE piping						100.00%	32m			
104/83	32mm HDPE Bend.						100.00%	4No			
105/84	32mm HDPE 45 Degree bend.						100.00%	2No			
106/84	32mm HDPE Tee.						100.00%	1No			
107/84	32mm HDPE Male adaptor.						100.00%	4No			
108/84	32mm HDPE Female adaptor.						100.00%	4No			
109/84	32mm HDPE Reducing female adaptor.						100.00%	4No			
119/85	Plastic sleeves not exceeding 100mmm diameter and exceeding 250mm and not exceeding 500mm long						100.00%	3No			
120/85	Plastic sleeves exceeding 100mm not exceeding 200mmm diameter and exceeding 250mm and not exceeding 500mm long						100.00%	3No			
	Electrical Installation										
AG.15	20mm Diameter PVC conduit						100.00%	800m			
AG.17	100 x 50mm PVC boxes						100.00%	12No			
AG.19	50mm PVC round box						100.00%	35No			
AH.23	25mm Diameter PVC conduit						100.00%	400m			
AH.24	100 x 100 PVC boxes						100.00%	25No			
AH.25	50mm Round boxes						100.00%	40No			
BB.11	20mm Diameter PVC conduit						100.00%	350m			
BB.13	100 x 50mm PVC boxes						100.00%	4No			
		CONTINUES ON NEXT PAGE									

Annex C

BB.15	50mm PVC round box						100.00%	12No			
BC.19	25mm Diameter PVC conduit						100.00%	650m			
BC.21	100 x 100 PVC boxes						100.00%	35No			
BC.23	50mm Round boxes						100.00%	15No			
	Mechanical Installation Wet Works										
2.1.1	15mm Pipes						100.00%	10m			
2.1.2	22mm Pipes						100.00%	40m			
2.1.3	28mm Pipes						100.00%	30m			
2.2.1	15mm 90 degree bend						100.00%	4No			
2.2.2	22mm 90 degree bend						100.00%	14No			
2.2.3	28mm 90 degree bend						100.00%	2No			
2.3.1	22mm Tees						100.00%	5No			
2.3.2	28mm Tees						100.00%	1No			
2.3.3	22 x 22 x 15mm Tees						100.00%	2No			
2.3.4	28 x 28 x 15mm Tees						100.00%	1No			
2.3.7	28mm to 22mm Reducer						100.00%	2No			
	ELECTRICAL CABLE PRODUCTS										
AD.1	16mm2 Cable						90.00%	30m			
AD.5	16mm2 Bare copper earth						90.00%	30m			
AG.27	2.5mm2 Insulated conductors						90.00%	2000m			
AG.29	4mm2 Insulated conductors						90.00%	1200m			
AI.3	10kW single phase inverter						40.00%	1No			
BC.17	1,5mm2 2 Pair screened PH30 cable.						90.00%	950m			
							100.00%				
	CEMENT PRODUCTS										
1/29	Surface blinding under footings and bases.						100.00%	11m3			
2/29	Surface beds cast in panels on waterproofing.						100.00%	128m3			
3/29	Columns in foundations.						100.00%	4m3			
4/29	Columns.						100.00%	1m3			
5/29	Slabs including beams and inverted beams.						100.00%	14m3			
6/30	Stairs including landings, beams and inverted beams.						100.00%	2m3			
7/30	Isolated beams.						100.00%	2m3			
8/30	Strip footings.						100.00%	26m3			
9/30	Bases.						100.00%	52m3			
10/30	Surface beds cast in panels on waterproofing.						100.00%	1m3			
11/30	Making test blocks						100.00%	38Sets			
14/30	Grout bedding to base plates						100.00%	4No			
15/30	Grout bedding to base plates						100.00%	18No			
1/35	One brick walls.						100.00%	149m2			
2/36	Half brickwalls.						100.00%	30m2			
3/36	Half brick walls in beam filling.						100.00%	1m2			
4/36	One brick walls.						100.00%	112m2			
5/36	One brick walls of two half brick skins bagged and						100.00%	409m2			
6/36	Bagging on brickwalls						100.00%	358m2			
10/36	110 x 75mm Lintels						100.00%	50m			
6/63	Internal cement plaster on walls.						100.00%	630m2			
7/63	Internal cement plaster on narrow widths.						100.00%	41m2			
8/63	Internal cement plaster on walls.						100.00%	10m2			
9/63	Internal cement plaster on narrow widths.						100.00%	4m2			
10/63	Internal cement plaster on projecting and isolated beams.						100.00%	2m2			
11/63	External cement plaster on walls.						100.00%	23m2			
		CONTINUES ON NEXT PAGE									

Annex C

12/63	External cement plaster on narrow widths.						100.00%	6m2			
13/63	External cement plaster on sides and front edge of window and door surrounds 285mm girth.						100.00%	15m			
14/63	External cement plaster on sides and front edge of window and door surrounds 365mm girth.						100.00%	23m			
15/63	External cement plaster on sloping top, front edge and projecting soffit of sills 350mm girth.						100.00%	8m			
16/63	External cement plaster on walls.						100.00%	9m2			
17/63	External cement plaster on narrow widths.						100.00%	3m2			
18/63	External cement plaster On sides and front edge of window and door surrounds 480mm girth.						100.00%	9m2			
1/72	Insitu concrete storwater channel 430 x 250mm thick.						100.00%	69m			
5/73	100D Concrete pipes						100.00%	7m			
6/73	100D Concrete pipes						100.00%	8m			
7/73	Stormwater kerb inlet						100.00%	1No			
17/74	Blinding under footings, bases, apron slabs etc.						100.00%	1m3			
18/75	Surface beds, bottoms, sides, ends, etc.						100.00%	1m3			
19/75	Wing walls.						100.00%	1m3			
45/77	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 0,5m and not exceeding 1,0m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere)						100.00%	1No			
46/77	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 1,0m and not exceeding 1,5m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere)						100.00%	1No			
53/78	Cutting into side of existing inspection chamber for and connecting 160mm pipe including inserting 160mm channel junction and making good concrete benching.						100.00%	1No			
115/84	225 x 225 x 100mm x 10kg Cast iron stopcock box including brick chamber below 500mm deep internally.						100.00%	2No			
8/95	Ramps, paving, surface beds cast in panels						100.00%	5m3			
14/96	50mm Concrete bond pavers						100.00%	366m2			
16/96	60mm Concrete Type S pavers						100.00%	896m2			
19/97	Precast kerb Fig 10						100.00%	11m			
20/97	Precast kerb Fig 4						100.00%	99m			
21/97	Precast kerb Fig 4						100.00%	3m			
22/97	Precast kerb Fig 4						100.00%	2m			
23/97	Precast combination kerb Fig 4 and Fig 14						100.00%	105m			
24/97	Precast combination kerb Fig 4 and Fig 14						100.00%	5m3			
25/97	Precast combination kerb Fig 4 and Fig 14						100.00%	16m			
18/102	Blinding.						100.00%	7m3			
19/102	Strip footings.						100.00%	36m3			

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Annex C

20/102	Test blocks						100.00%	6Sets			
22/102	430 x 60mm Precast concrete coping						100.00%	205m			
24/103	Brickwork in piers						100.00%	1m3			
25/103	330mm Hollow diaphragm walls of two half brick skins.						100.00%	629m2			
26/103	Closing 110mm cavities of hollow walls horizontally with one course of brickwork.						100.00%	194m			
27/103	Closing 110mm cavities of hollow walls vertically with brickwork one brick wide.						100.00%	120m			
30/103	140mm (M6) Walls.						100.00%	30m2			
31/03	Extra over 140mm (M6) hollow walls for internal stiffener piers 140mm wide (one block) projecting 250mm including filling cores solid with 15Mpa mass concrete.						100.00%	10m2			
32/103	Mortar filling to single hollow core of 140mm hollow block.						100.00%	53No			
35/104	152 x 152mm Gate post 2400mm high with UV stabilised polymer cap, 'locking Recess Mechanism' to secure panel edges and including 450 x 450 x 900mm deep cement concrete 25MPa/19mm stone) base including all excavation in earth, backfilling and						100.00%	4No			
38/105	External cement plaster on walls.						100.00%	1079m2			
39/105	External cement plaster on walls.						100.00%	161m2			
40/105	External cement plaster on narrow widths.						100.00%	1m2			
	VALVES AND ACTUATORS										
75/81	15mm Chrome plated Medical elbow action pillartap with raised nose (code 503-21B and R).						70.00%	1No			
76/81	15mm Chrome plated sink mixer. (product code 3396ST)						70.00%	1No			
77/81	15mm Chrome plated sink mixer. (product code 3396ST)						70.00%	4No			
82/82	15 x 15mm Chrome plated angle regulating valve (code 832-10).						70.00%	3No			
83/82	22mm F x F 'Cobra' cast brass Fullway Gate valve Class 8 with non-rising spindle (code 1002-125-20).						70.00%	2No			
114/84	32mm Brass gate valve.						70.00%	2No			
	Mechanical Installation Wet Works										
2.3.5	15mm Stop valve						70.00%	2No			
2.3.6	20mm Stop valve						70.00%	8No			
2.3.8	22mm 400kPA PRV						70.00%	2No			
2.3.9	28mm 400kPA PRV						70.00%	36No			
		CONTINUES ON NEXT PAGE									

Annex C

Signature of Tenderer from Annex B

Date:

(C20) **Total tender value**	**R**	
(C21) **Total Exempt imported content**	**R**	
(C22) Total **Tender value net of exempt imported content**	**R**	
(C23) **Total Imported content**	**R**	
(C24) **Total local content**	**R**	
(C25) **Average local content % of tender**		

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

(D1)	**Tender No.**	ECDC/INFRA/32/012024				
(D2)	**Tender description:**	Refurbishment and Construction of Warehouse on ERF 2696, 14 Timber Street, Vulindlela Heights - (Mthatha Cluster G)				
(D3)	**Designated Products:**	As before (Annex C)				
(D4)	**Tender Authority:**	Eastern Cape Development Corporation		0		
(D5)	**Tendering Entity name:**					
(D6)	**Tender Exchange Rate:**	Pula		EU	GBP	

Note: VAT to be excluded from all calculations

A. Exempted imported content

Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Calculation of imported content: Forign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Summary: Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)

(D19) **Total exempt imported value**

This total must correspond with Annex C - C 21

B. Imported directly by the Tenderer

Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Calculation of imported content: Forign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Summary: Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
	`										

(D32) **Total imported value by tenderer**

C. Imported by a 3rd party and supplied to the Tenderer

Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Calculation of imported content: Forign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Summary: Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
`											

(D45) **Total imported value by 3rd party**

D. Other foreign currency payments

Type of payment	Local supplier making the payment	Overseas beneficiary	Calculation of foreign currency payments: Foreign currency value paid	Tender Rate of Exchange	Summary of payments: Local value of payments
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)

(D52) **Total of foreign currency payments declared by Tenderer and/or 3rd party**

(D53) **Total of imported content & foreign currency payments - *(D32), (D45) & (D52)* above**

This total must correspond with Annex C - C 23

Signature of Tenderer from Annex B

Date:

Annex E

Local Content Declaration - Supporting Schedule to Annex C

(E1)	**Tender No.**	ECDC/INFRA/32/012024
(E2)	**Tender description:**	Refurbishment and Construction of Warehouse on ERF 2696, 14 Timber Street, Vulindlela Heights (Mthatha Cluster G)
(E3)	**Designated products:**	As before (Annex C)
(E4)	**Tender Authority:**	ECDC/INFRA/32/012024
(E5)	**Tendering Entity name:**	

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	*(E7)*	*(E8)*
	STEEL PRODUCTS		
	8mm Diameter reinforcement		
	10mm Diameter reinforcement		
	20mm Diameter reinforcement		
	16mm Diameter reinforcement		
	12mm Diameter reinforcement		
	10mm Diameter reinforcement		
	Ref 617 fabric reinforcement		
	Ref 617 fabric reinforcement		
	75mm Wide reinforcement built in horizontally.		
	150mm Wide reinforcement built in horizontally.		
	150mm Wide reinforcement built in horizontally in foundations.		
	110 x 75mm Lintels		
	40 x 1,6mm Wall tie 500mm long		
	40 x 1,6mm Wall tie 500mm long		
	30 x 1,6mm Cramp 500mm		
	30 x 1,6mm Roof tie 1,5m long		
	30 x 1,6mm Roof tie 1,5m long		
	IBR Metal roof sheeting		
	IBR Metal side cladding		
	Ridge flashing 462mm girth		
	Barge flashing 462mm girth		
	Apex flashing 462mm girth		
	External corner flashing 462mm girth		
	Counter flashing 154mm girth		
	Headwall flashing 308mm girth		
	Drip flashing 154mm girth		
	Broad flute serrated closers		
	Narrow flute serrated closers		
	Turbine ridge mounted ventilator		
	Stainelss steel hinges		
	Stainless steel towel rail		
	10mm Diameter steel dowel 100mm long		
	180 x 70mm x 21kg/m Parallel flange columns.		
	203 x 133mm x 25kg/m I-section rafters.		
	Double pitched portal frames 13,67m wide x 6,39m high extreme of 305 x 165mm x 41kg/m I-section rafters and columns (In No 9)		
	Lipped channel section purlins.		
	Lipped channel section girts.		
	50,8 x 3,0mm Circular hollow section stay.		
	76,2 x 3,0mm Circular hollow section bracing.		
	Angle section false rafter.		
	Angle section anti-sag rails.		
	Angle section cladding rails.		
	High tensile bolts (class 8.8).		
	M16mm Diameter x 600mm long holding down bolt with 60 x 60 x 6mm plate welded 10mm from one end of the bolt embedded in top of concrete including washers and two nuts.		
	Double gate 1800 x 2023mm high in equal leaves		
	Aluminium Purpose made window 1000 x 900mm high		
	Aluminium Purpose made window 1200 x 900mm high		
	Aluminium Purpose made window 1400 x 900mm high		
	Aluminium Purpose made window 2500 x 1325mm high		
	Aluminium Purpose made window 600 x 600mm high		
	Aluminium Purpose made window 600 x 900mm high		
	Chain operated slatted roller shutter for 2500 x 2125mm high		
	Chain operated slatted roller shutter for 3600 x 2125mm high		
	Reno mattress size 2110 x 1000 x 300mm high consisting of 150-300mm selected loose stones tightly wrapped in 80 x 100 x 2.2mm galvanised mesh, including preparation of ground, etc., including filling voids with cement mortar.		
	Reno mattress size 2110 x 1000 x 300mm high consisting of 150-300mm selected loose stones tightly wrapped in 80 x 100 x 2.2mm galvanised mesh, including preparation of ground, etc., including filling voids with cement mortar.		
	Reinforcement various diameters		
	Type 289 fabric reinforcement		
	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 0,5m and not exceeding 1,0m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm		
	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 1,0m and not exceeding 1,5m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm		
	550mm Diameter x 176kg type 2A heavy duty cast iron manhole cover and frame.		
	150 x 125mm High Aluminium seemless eaves gutter		
	150 x 125mm alumiunium stopped end		
	Aluminium outlet for rainwater pipe	Continues on next page	

Annex E

75 x 75mm Aluminium rainwater pipes		
75 x 75mm Aluminium bend		
75 x 75mm Aluminium shoe		
225 x 225 x 100mm x 10kg Cast iron stopcock box including brick chamber below 500mm deep internally.		
Ref 617 fabric reinforcement		
Ref 617 fabric reinforcement		
Ref 617 fabric reinforcement		
75mm Wide reinforcement built in horizontally.		
152 x 152mm Gate post 2400mm high with UV stabilised polymer cap, 'locking Recess Mechanism' to secure panel edges and including 450 x 450 x 900mm deep cement concrete 25MPa/19mm stone) base including all excavation in earth, backfilling and ramming.		
Double swing gate of in equal leaves, size 4600 x 1800mm high		
Double swing gate of in equal leaves, size 5000 x 1800mm high		
Stout barrier fencing 1800mm high including, intermediate posts, straining posts, stays and end posts, straining wires, diamond mesh etc., covered with shade cloth, installed complete.		
Pedestrian gate size 900 x 1500mm high		
Double vehicle gate size 3800 x 1500mm high		
Electrical Installation		
P2000 galvanised trunking and covers		
P2000 - 90degree bend		
P2000 - T Junction		
300 x 50mm Galvanised welded wire mesh cable trays		
300mm Horizontal bends (90Degrees)		
300mm Tee section		
Mechanical Installtion Fire Protection		
25mm Mild steel pipe		
32mm Mild steel pipe		
PLASTIC PRODUCTS		
50mm uPVC pipe		
110mm uPVC pipe		
110mm uPVC pipe		
110mm uPVC pipe		
50mmuPVC bend		
110mm uPVC bend		
110mm uPVC access bend		
50mm uPVC junction		
110mm uPVC junction		
110mm uPVC access junction		
110mm uPVC dished gulley		
110mm PVC Cleaning eye		
40mm uPVC pipes		
50mm uPVC pipes		
40mm uPVC pipes		
50mm uPVC pipes		
110mm uPVC pipes		
50mm Reducer.		
40mm Bend.		
50mm Bend.		
110mm Bend.		
50mm Junction.		
110mm Pan connector.		
40mm Access bend.		
50mm Access bend.		
110mm Access bend.		
40mm Access junction.		
50mm Access junction.		
50mm Reducing access junction.		
110mm 'GI Two-way' vent valve.		
32mm HDPE piping		
32mm HDPE Bend.		
32mm HDPE 45 Degree bend.		
32mm HDPE Tee.		
32mm HDPE Male adaptor.		
32mm HDPE Female adaptor.		
32mm HDPE Reducing female adaptor.		
Plastic sleeves not exceeding 100mmm diameter and exceeding 250mm and not exceeding 500mm long		
Plastic sleeves exceeding 100mm not exceeding 200mmm diameter and exceeding 250mm and not exceeding 500mm long		
Electrical Installation		
20mm Diameter PVC conduit		
100 x 50mm PVC boxes		
50mm PVC round box		
25mm Diameter PVC conduit		
100 x 100 PVC boxes		
50mm Round boxes		
20mm Diameter PVC conduit		
100 x 50mm PVC boxes		
50mm PVC round box		
25mm Diameter PVC conduit		
100 x 100 PVC boxes		
50mm Round boxes		
Mechanical Installation Wet Works		
15mm Pipes		
22mm Pipes		
28mm Pipes		
15mm 90 degree bend		
22mm 90 degree bend		
28mm 90 degree bend		
22mm Tees	Continues on next page	

Annex E

28mm Tees		
22 x 22 x 15mm Tees		
28 x 28 x 15mm Tees		
28mm to 22mm Reducer		
ELECTRICAL CABLE PRODUCTS		
16mm2 Cable		
16mm2 Bare copper earth		
2.5mm2 Insulated conductors		
4mm2 Insulated conductors		
10kW single phase inverter		
1,5mm2 2 Pair screened PH30 cable.		
CEMENT PRODUCTS		
Surface blinding under footings and bases.		
Surface beds cast in panels on waterproofing.		
Columns in foundations.		
Columns.		
Slabs including beams and inverted beams.		
Stairs including landings, beams and inverted beams.		
Isolated beams.		
Strip footings.		
Bases.		
Surface beds cast in panels on waterproofing.		
Making test blocks		
Grout bedding to base plates		
Grout bedding to base plates		
One brick walls.		
Half brickwalls.		
Half brick walls in beam filling.		
One brick walls.		
One brick walls of two half brick skins bagged and sealed.		
Bagging on brickwalls		
110 x 75mm Lintels		
Internal cement plaster on walls.		
Internal cement plaster on narrow widths.		
Internal cement plaster on walls.		
Internal cement plaster on narrow widths.		
Internal cement plaster on projecting and isolated beams.		
External cement plaster on walls.		
External cement plaster on narrow widths.		
External cement plaster on sides and front edge of window and door surrounds 285mm girth.		
External cement plaster on sides and front edge of window and door surrounds 365mm girth.		
External cement plaster on sloping top, front edge and projecting soffit of sills 350mm girth.		
External cement plaster on walls.		
External cement plaster on narrow widths.		
External cement plaster On sides and front edge of window and door surrounds 480mm girth.		
Insitu concrete storwater channel 430 x 250mm thick.		
100D Concrete pipes		
100D Concrete pipes		
Stormwater kerb inlet		
Blinding under footings, bases, apron slabs etc.		
Surface beds, bottoms, sides, ends, etc.		
Wing walls.		
Precast concrete inspection chamber size 1000mm internal diameter x exceeding 0,5m and not exceeding 1,0m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere)		
Precast concrete inspection chamber size 1000mm internal diameter x exceeding 1,0m and not exceeding 1,5m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere)		
Cutting into side of existing inspection chamber for and connecting 160mm pipe including inserting 160mm channel junction and making good concrete benching.		
225 x 225 x 100mm x 10kg Cast iron stopcock box including brick chamber below 500mm deep internally.		
Ramps, paving, surface beds cast in panels		
50mm Concrete bond pavers		
60mm Concrete Type S pavers		
Precast kerb Fig 10		
Precast kerb Fig 4		
Precast kerb Fig 4		
Precast kerb Fig 4		
Precast combination kerb Fig 4 and Fig 14		
Precast combination kerb Fig 4 and Fig 14		
Precast combination kerb Fig 4 and Fig 14		
Blinding.		
Strip footings.		
Test blocks		
430 x 60mm Precast concrete coping		
Brickwork in piers		
330mm Hollow diaphragm walls of two half brick skins.		
Closing 110mm cavities of hollow walls horizontally with one course of brickwork.		
Closing 110mm cavities of hollow walls vertically with brickwork one brick wide.		
140mm (M6) Walls.	Continues on next page	

Annex E

Extra over 140mm (M6) hollow walls for internal stiffener piers 140mm wide (one block) projecting 250mm including filling cores solid with 15Mpa mass concrete.		
Mortar filling to single hollow core of 140mm hollow block.		
152 x 152mm Gate post 2400mm high with UV stabilised polymer cap, 'locking Recess Mechanism' to secure panel edges and including 450 x 450 x 900mm deep cement concrete 25MPa/19mm stone) base including all excavation in earth, backfilling and ramming.		
External cement plaster on walls.		
External cement plaster on walls.		
External cement plaster on narrow widths.		
VALVES AND ACTUATORS		
15mm Chrome plated Medical elbow action pillartap with raised nose (code 503-21B and R).		
15mm Chrome plated sink mixer. (product code 3396ST)		
15mm Chrome plated sink mixer. (product code 3396ST)		
15 x 15mm Chrome plated angle regulating valve (code 832-10).		
22mm F x F 'Cobra' cast brass Fullway Gate valve Class 8 with non-rising spindle (code 1002-125-20).		
32mm Brass gate valve.		
Mechanical Installation Wet Works		
15mm Stop valve		
20mm Stop valve		
22mm 400kPA PRV		
28mm 400kPA PRV		
	(E9) **Total local products (Goods, Services and Works)**	

(E10) **Manpower costs** (Tenderer's manpower cost)

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables, etc.)

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest, etc.)

(E13) **Total local content**

This total must correspond with Annex C - C24

Signature of Tenderer from Annex B

Date:

the dti
Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

Private Bag X84, PRETORIA, 0001, **the dti** Campus, 77 Meintjies Street, Sunnyside, 0002, Tel: (012) 394 0000
the dti Customer Contact Centre local: 0861 843 384 International: +27 12 394 9500, www.thedti.gov.za

Guidance Document for the Calculation of Local Content

1. DEFINITIONS

Unless explicitly provided in this guideline, the definitions given in SATS 1286:2011 apply.

2. GENERAL

2.1. Introduction

This guideline provides tenderers with a detailed description of how to calculate local content of products (goods, services and works) by components/material/services and enables them to keep an updated record for verification requirements as per the SATS 1286:2011 Annexure A and B.

The guideline consists of two parts, namely:

- a written guideline; and
- three declarations that must be completed:
  - Declaration C: “Local Content Declaration – Summary Schedule” (see Annexure C);
  - Declaration D: “Imported Content Declaration – Supporting Schedule to Annex C” (see Annexure D); and
  - Declaration E: “Local Content Declaration – Supporting Schedule to Annex C” (see Annexure E).

The guidelines and declarations should be used by tenderers when preparing a tender. A tenderer must complete Declarations D and E, and consolidate the information on Declaration C.

Annexure C must be submitted with the tender by the closing date and time as determined by the Tender Authority. The Tender Authority reserves the right to request that Declarations D and E also be submitted.

If the tender is successful, the tenderer must continuously update Declarations C, D and E with actual values for the duration of the contract.

NOTE:

Annexure A is a note to the purchaser in SATS 1286:2011; and

Annexure B is the Local Content Declaration IN SATS 1286:2011.

2.2. What is local content?

According to SATS 1286:2011, the local content of a product is the tender price less the value of imported content, expressed as a percentage. It is, therefore, necessary to first compute the imported value of a product to determine the local content of a product.

2.3. Categories: Imported and Local Content

The tenderer must differentiate between imported content and local content.

Imported content of a product by components/material/services is separated into two categories, namely:

- products imported directly by the tenderer; and
- products imported by a third party and supplied to the tenderer.

2.3.1. Imported Content

Identify the imported content, if any, by value for products by component/material/services. In the case of components/materials/services sourced from a South African manufacturer, agent, supplier or subcontractor (i.e. third party), obtain that information and Declaration D from the third party.

Calculate the imported content of components/materials/services to be used in the manufacture of the total quantity of the products for which the tender is to be submitted.

As stated in clause 3.2.4 of SATS 1286:2011: “If information on the origin of components, parts or materials is not available, it will be deemed to be imported content.”

2.3.1.1 Imported directly by the tenderer:

When the tenderer import products directly, the onus is on the tenderer to provide evidence of any components/materials/services that were procured from a non-domestic source. The evidence should be verifiable and pertain to the tender as a whole. Typical evidence will include commercial invoices, bills of entry, etc.

When the tenderer procures imported services such as project management, design, testing, marketing, etc. and makes royalty and lease payments, such payments relating to the tender must be included when calculating imported content.

2.3.1.2. Imported by a third party and supplied to the tenderer:

When the tenderer supplies components/material/services that are imported by any third party (for example, a domestic manufacturer, agent, supplier or subcontractor in the supply chain), the onus is on the tenderer to obtain verifiable evidence from the third party.

The tenderer must obtain Declaration D from all third parties for the related tender. The third party must be requested by the tenderer to continuously update Declaration D. Typical evidence of imported content will include commercial invoices, bills of entry etc.

When a third party procures imported services such as project management, design, testing, marketing etc. and makes royalty and lease payments, such payments relating to the tender must be included when calculating imported content.

2.3.1.3. Exempt Imported Content:

Exemptions, if any, are granted by the Department of Trade and Industry (**the dti**). Evidence of the exemptions must be provided and included in Annexure D.

2.3.2. Local Content

Identify and calculate the local content, by value for products by components/materials/services to be used in the manufacture of the total quantity of the products.

3. ANNEXURE C

3.1. Guidelines for completing Annexure C: Local Content Declaration –

Summary Schedule

Note: The paragraph numbers correspond to the numbers in Annexure C.

C1. Tender Number

Supply the tender number that is specified on the specific tender documentation.

C2. Tender description

Supply the tender description that is specified on the specific tender documentation.

C3. Designated products

Supply the details of the products that are designated in terms of this tender (i.e. buses).

C4. Tender Authority

Supply the name of the tender authority.

C5. Tendering Entity name

Provide the tendering entity name (for example, Anybody Bus Builders (Pty) Ltd).

C6. Tender Exchange Rate

Provide the exchange rate used for this tender, as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

C7. Specified local content %

Provide the specified minimum local content requirement for the tender (i.e. 80%), as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MDB) 6.2.

C8. Tender item number

Provide the tender item number(s) of the products that have a local content requirement as per the tender specification.

C9. List of items

Provide a list of the item(s) corresponding with the tender item number.

This may be a short description or a brand name.

Calculation of local content

C10. Tender price

Provide the unit tender price of each item excluding VAT.

C11. Exempted imported content

Provide the ZAR value of the exempted imported content for each item, if applicable. These value(s) must correspond with the value(s) of column D16 on Annexure D.

C12. Tender value net of exempted imported content

Provide the net tender value of the item, if applicable, by deducting the exempted imported content (C11) from the tender price (C10).

C13. Imported value

Provide the ZAR value of the items' imported content.

C14. Local value

Provide the local value of the item by deducting the Imported value (C13) from the net tender value (C12).

C15. Local content percentage (per item)

Provide the local content percentage of the item(s) by dividing the local value (C14) by the net tender value (C12) as per the local content formula in SATS 1286.

Tender Summary

C16. Tender quantity

Provide the tender quantity for each item number as per the tender specification.

C17. Total tender value

Provide the total tender value by multiplying the tender quantity (C16) by the tender price (C10).

C18. Total exempted imported content

Provide the total exempted imported content by multiplying the tender quantity (C16) by the exempted imported content (C11). These values must correspond with the values of column D18 on Annexure D.

C19. Total imported content

Provide the total imported content of each item by multiplying the tender quantity (C16) by the imported value (C13).

C20. Total tender value

Total tender value is the sum of the values in column C17.

C21. Total exempted imported content

Total exempted imported content is the sum of the values in column C18. This value must correspond with the value of D19 on Annexure D.

C22. Total tender value net of exempted imported content

The total tender value net of exempt imported content is the total tender value (C20) less the total exempted imported content (C21).

C23. Total imported content

Total imported content is the sum of the values in column C19. This value must correspond with the value of D53 on Annexure D.

C24. Total local content

Total local content is the total tender value net of exempted imported content (C22) less the total imported content (C23). This value must correspond with the value of E13 on Annexure E.

C25. Average local content percentage of tender

The average local content percentage of tender is calculated by dividing total local content (C24) by the total tender value net of exempted imported content (C22).

4. ANNEXURE D

4.1. Guidelines for completing Annexure D: "Imported Content Declaration – Supporting Schedule to Annexure C"

Note: The paragraph numbers correspond to the numbers in Annexure D.

D1. Tender number

Supply the tender number that is specified on the specific tender documentation.

D2. Tender description

Supply the tender description that is specified on the specific tender documentation.

D3. Designated products

Supply the details of the products that are designated in terms of this tender (i.e. buses).

D4. Tender authority

Supply the name of the tender authority.

D5. Tendering entity name

Provide the tendering entity name (i.e. Anybody Bus Builders (Pty) Ltd).

D6. Tender exchange rate

Provide the exchange rate used for this tender, as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

Table A. Exempted Imported Content

D7. Tender item number

Provide the tender item number(s) of the product(s) that have imported content.

D8. Description of imported content

Provide a list of the exempted imported product(s), if any, as specified in the tender.

D9. Local supplier

Provide the name of the local supplier(s) supplying the imported product(s).

D10. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the exempted imported product(s).

D11. Imported value as per commercial invoice

Provide the foreign currency value of the exempted imported product(s) disclosed in the commercial invoice accepted by the South African Revenue Service (SARS).

D12. Tender exchange rate

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D13. Local value of imports

Convert the value of the exempted imported content as per commercial invoice (D11) into the ZAR value by using the tender exchange rate (D12) disclosed in the tender documentation.

D14. Freight costs to port of entry

Provide the freight costs to the South African Port of the exempted imported item.

D15. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the exempted imported product(s) as stipulated in the SATS 1286:2011.

D16. Total landed costs excluding VAT

Provide the total landed costs (excluding VAT) for each item imported by adding the corresponding item values in columns D13, D14 and D15. These values must be transferred to column C11 on Annexure C.

D17. Tender quantity

Provide the tender quantity of the exempted imported products as per the tender specification.

D18. Exempted imported value

Provide the imported value for each of the exempted imported product(s) by multiplying the total landed cost (excl. VAT) (D16) by the tender quantity (D17). The values in column D18 must correspond with the values of column C18 of Annexure C.

D19. Total exempted imported value

The total exempted imported value is the sum of the values in column D18. This total must correspond with the value of C21 on Annexure C.

Table B. Imported Directly By Tenderer

D20. Tender item numbers

Provide the tender item number(s) of the product(s) that have imported content.

D21. Description of imported content:

Provide a list of the product(s) imported directly by tender as specified in the tender documentation.

D22. Unit of measure

Provide the unit of measure for the product(s) imported directly by the tenderer.

D23. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the imported product(s).

D24. Imported value as per commercial Invoice

Provide the foreign currency value of the product(s) imported directly by tenderer disclosed in the commercial invoice accepted by the South African Revenue Service (SARS).

D25. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D26. Local value of imports

Convert the value of the product(s) imported directly by the tenderer as per commercial invoice (D24) into the ZAR value by using the tender exchange rate (D25) disclosed in the tender documentation.

D27. Freight costs to port of entry

Provide the freight costs to the South African Port of the product(s) imported directly by the tenderer.

D28. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the product(s) imported directly by the tenderer as stipulated in the SATS 1286:2011.

D29. Total landed costs excluding VAT

Provide the total landed costs (excluding VAT) for each item imported directly by the tenderer by adding the corresponding item values in columns D26, D27 and D28.

D30. Tender quantity

Provide the tender quantity of the product(s) imported directly by the tenderer as per the tender specification.

D31. Total imported value

Provide the total imported value for each of the product(s) imported directly by the tenderer by multiplying the total landed cost (excl. VAT) (D29) by the tender quantity (D30).

D32. Total imported value by tenderer

The total value of imports by the tenderer is the sum of the values in column D31.

Table C. Imported by Third Party and Supplied to the Tenderer

D33. Description of imported content

Provide a list of the product(s) imported by the third party and supplied to the tenderer as specified in the tender documentation.

D34. Unit of measure

Provide the unit of measure for the product(s) imported by the third party and supplied to tenderer as disclosed in the commercial invoice.

D35. Local supplier

Provide the name of the local supplier(s) supplying the imported product(s).

D36. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the imported products.

D37. Imported value as per commercial invoice

Provide the foreign currency value of the product(s) imported by the third party and supplied to the tenderer disclosed in the commercial invoice accepted by SARS.

D38. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D39. Local value of imports

Convert the value of the product(s) imported by the third party as per commercial invoice (D37) into the ZAR value by using the tender exchange rate (D38) disclosed in the tender documentation.

D40. Freight costs to port of entry

Provide the freight costs to the South African Port of the product(s) imported by third party and supplied to the tenderer.

D41. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the product(s) imported by third party and supplied to the tenderer as stipulated in the SATS 1286:2011.

D42. Total landed costs excluding VAT

Provide the total landed costs (excluding VAT) for each product imported by third party and supplied to the tenderer by adding the corresponding item values in columns D39, D40 and D41.

D43. Quantity imported

Provide the quantity of each product(s) imported by third party and supplied to the tenderer for the tender.

D44. Total imported value

Provide the total imported value of the product(s) imported by third party and supplied to the tenderer by multiplying the total landed cost (D42) by the quantity imported (D43).

D45. Total imported value by third party

The total imported value from the third party is the sum of the values in column D44.

Table D. Other Foreign Currency Payments

D46. Type of payment

Provide the type of foreign currency payment. (i.e. royalty payment for use of patent, annual licence fee, etc.).

D47. Local supplier making the payment

Provide the name of the local supplier making the payment.

D48. Overseas beneficiary

Provide the name of the overseas beneficiary.

D49. Foreign currency value paid

Provide the value of the listed payment(s) in their foreign currency.

D50. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D51. Local value of payments

Provide the local value of each payment by multiplying the foreign currency value paid (D49) by the tender rate of exchange (D50).

D52. Total of foreign currency payments declared by tenderer and/or third party

The total of foreign currency payments declared by tenderer and/or a third party is the sum of the values in column D51.

D53. Total of imported content and foreign currency payment

The total imported content and foreign currency payment is the sum of the values in column D32, D45 and D52. This value must correspond with the value of C23 on Annexure C.

5. ANNEXURE E

5.1. Guidelines to completing Annexure E: "Local Content Declaration- Supporting Schedule to Annexure C"

The paragraph numbers correspond to the numbers in Annexure E

E1. Tender number

Supply the tender number that is specified on the specific tender documentation.

E2. Tender description

Supply the tender description that is specified on the specific tender documentation.

E3. Designated products

Supply the details of the products that are designated in terms of this tender (for example, buses/canned vegetables).

E4. Tender authority

Supply the name of the tender authority.

E5. Tendering entity name

Provide the tendering entity name (for example, Anybody Bus Builders (Pty) Ltd) Ltd).

Local Goods, Services and Works

E6. Description of items purchased

Provide a description of the items purchased locally in the space provided.

E7. Local supplier

Provide the name of the local supplier that corresponds to the item listed in column E6.

E8. Value

Provide the total value of the item purchased in column E6.

E9. Total local products (Goods, Services and Works)

Total local products (goods, services and works) is the sum of the values in E8.

E10. Manpower costs:

Provide the total of all the labour costs accruing only to the tenderer (i.e. not the suppliers to tenderer).

E11. Factory overheads:

Provide the total of all the factory overheads including rental, depreciation and amortisation for local and imported capital goods, utility costs and consumables. (Consumables are goods used by individuals and businesses that must be replaced regularly because they wear out or are used up. Consumables can also be defined as the components of an end product that are used up or permanently altered in the process of manufacturing, such as basic chemicals.)

E12. Administration overheads and mark-up:

Provide the total of all the administration overheads, including marketing, insurance, financing, interest and mark-up costs.

E13. Total local content:

The total local content is the sum of the values of E9, E10, E11 and E12. This total must correspond with C24 of Annexure C.

T2.2 .2- Functionality Evaluation Schedules

T2.2.2a: SIMILAR PROJECTS COMPLETED SUCCESSFULLY WITH REFERENCE LETTERS

Note: Mandatory Returnable Schedule. Failure to submit as required will result in the bid being nonresponsive.

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Bidders are required to provide a schedule of similar work in complexity that was successfully completed with contactable references as per the attached forms below.

OR

Submit a reference letter that indicates the following

Signature of the Client

On Clients Letter Head or Client Stamp

Company Name, contact person, contact details (telephone number and email etc)

Value of the Project

Scope of works carried out

Works have been completed on time/within stipulated contract period

Good or better workmanship

Reference No 1

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Sir/Madam,

We are in the process of evaluating _____ for the above project.

Tenderers Company Name

They have listed you as a reference. Please evaluate the contractor's performance on the criteria listed below by ticking the appropriate boxes. This form to be submitted with the bid. If you have any questions, please do not hesitate to contact us.

NAME OF EMPLOYER	NAME OF PROJECT	CONTRACT PERIOD	VALUE OF WORK

1. KNOWLEDGEABLE IN THE FIELD IN WHICH THIS BID RELATES TO

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

2. TIME PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

3. FINANCIAL PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

1. **WAS THE WORKS COMPLETED SATISFACTORY?**

   YES / NO (please circle)

   If no, please provide details below:

   _____

   _____

Project Manager/Principal Agent: _____ **Place company stamp below:**

Tel: _____

E-mail Address _____

Signature: _____ Date: _____

Reference No 2

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Sir/Madam,

We are in the process of evaluating _____ for the above project.

Tenderers Company Name

They have listed you as a reference. Please evaluate the contractor's performance on the criteria listed below by ticking the appropriate boxes. This form to be submitted with the bid. If you have any questions, please do not hesitate to contact us.

NAME OF EMPLOYER	NAME OF PROJECT	CONTRACT PERIOD	VALUE OF WORK

4. KNOWLEDGEABLE IN THE FIELD IN WHICH THIS BID RELATES TO

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

5. TIME PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

6. FINANCIAL PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

2. WAS THE WORKS COMPLETED SATISFACTORY?

YES / NO (please circle)

If no, please provide details below:

_____

_____

Project Manager/Principal Agent: _____ **Place company stamp below:**

Tel: _____

E-mail Address _____

Signature: _____ Date: _____

Reference No 3

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Sir/Madam,

We are in the process of evaluating _____ for the above project.

Tenderers Company Name

They have listed you as a reference. Please evaluate the contractor's performance on the criteria listed below by ticking the appropriate boxes. This form to be submitted with the bid. If you have any questions, please do not hesitate to contact us.

NAME OF EMPLOYER	NAME OF PROJECT	CONTRACT PERIOD	VALUE OF WORK

7. KNOWLEDGEABLE IN THE FIELD IN WHICH THIS BID RELATES TO

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

8. TIME PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

9. FINANCIAL PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

3. WAS THE WORKS COMPLETED SATISFACTORY?

YES / NO (please circle)

If no, please provide details below:

_____

_____

Project Manager/Principal Agent: _____ **Place company stamp below:**

Tel: _____

E-mail Address _____

Signature: _____ Date: _____

Reference No 4

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Sir/Madam,

We are in the process of evaluating _____ for the above project.

Tenderers Company Name

They have listed you as a reference. Please evaluate the contractor's performance on the criteria listed below by ticking the appropriate boxes. This form to be submitted with the bid. If you have any questions, please do not hesitate to contact us.

NAME OF EMPLOYER	NAME OF PROJECT	CONTRACT PERIOD	VALUE OF WORK

10. KNOWLEDGEABLE IN THE FIELD IN WHICH THIS BID RELATES TO

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

11. TIME PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

12. FINANCIAL PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

4. WAS THE WORKS COMPLETED SATISFACTORY?

YES / NO (please circle)

If no, please provide details below:

_____

_____

Project Manager/Principal Agent: _____ **Place company stamp below:**

Tel: _____

E-mail Address _____

Signature: _____ Date: _____

Reference No 5

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Sir/Madam,

We are in the process of evaluating _____ for the above project.

Tenderers Company Name

They have listed you as a reference. Please evaluate the contractor's performance on the criteria listed below by ticking the appropriate boxes. This form to be submitted with the bid. If you have any questions, please do not hesitate to contact us.

NAME OF EMPLOYER	NAME OF PROJECT	CONTRACT PERIOD	VALUE OF WORK

13. KNOWLEDGEABLE IN THE FIELD IN WHICH THIS BID RELATES TO

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

14. TIME PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

15. FINANCIAL PERFORMANCE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5	4	3	2	1

5. WAS THE WORKS COMPLETED SATISFACTORY?

YES / NO (please circle)

If no, please provide details below:

_____

_____

Project Manager/Principal Agent: _____ **Place company stamp below:**

Tel: _____

E-mail Address _____

Signature: _____ Date: _____

T2.2.2 b – Construction Method Statement

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Work Organization Program and Scheduling

Bidder to provide a Detailed Gantt Chart (Works Breakdown Structure Program) Showing:

- **Summary tasks**
- **Indicating a Critical Path**
- **Time-lines within the project period**

Work organization program and scheduling to be attached here.

T2.2.2 c – Key Personnel Qualifications
(Construction Manager)

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Attach document here

T2.2.2 d – Key Personnel Qualifications

(Construction Supervisor)

Project title:	**REFURBISHEMNT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Attach document here

T2.2.2 e – Key Personnel Qualifications

(OHS Safety Officer)

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Attach document here

T2.2.2 f – Key Personnel Qualifications

(Skilled Staff)

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Attach document here

T2.2.2 g – Key Personnel Experience

(Semi-Skilled Support Staff)

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Attach document here

T2.2.2 h – Contactable References

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Provide a schedule of contactable references

Attach document here

T2.2.2 i – Scope of Works and Detailed Specifications

Note: Mandatory Returnable Schedule. Failure to submit as required will result in the bid being non-responsive.

Project title:	**REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G**
Bid No:	**ECDC/INFRA/32/012024**

Tenderer herewith confirms by signing below that he has read and understand the full scope of works and associated detailed specifications of this contract.

The client will not entertain any additional amount claimed due to a lack of understanding the full spectrum of the works.

Company Name:
……

Tenderer
Name:……Signature……Date……

Company Authorised/

Accountable Person Name:……..Signature……..Date……

Company Stamp:

THE CONTRACT

Part C1: Agreements and Contract data

C1.1 - Form of offer and acceptance
C1.2 - Contract data
C1.3 - Form of Guarantee

C1.1 - Form of offer and acceptance

Annexure L:

C.1.1 FORM OF OFFER AND ACCEPTANCE OFFER

Note: Mandatory Requirement. Failure to complete and Sign this document will result in the bid being non responsive.

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

PROJECT: REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS MTHATHA – CLUSTER G

Bid No : ECDC/INFRA/32/012024

The Tenderer, identified in the Offer signature block below, has examined the documents listed in the Tender Data and addenda thereto as listed in the Tender 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:

R …….. (in figures)

……

……

……

Rand (in words)

This offer may be accepted by the Employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document 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 Service Provider in the conditions of Contract identified in the Contract Data.

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

Company or close corporation:

……

And: whose registration number is:

…… And: whose income tax reference number is: ……..	
Trading under the name and style of: ……	
AND WHO IS: Represented herein, and who is duly authorized to do so, by: Mr/Mrs/Ms: …… In his/her capacity as: ……	**Note:** A resolution/power of attorney, signed by all the directors/ members/ partners of the legal entity must accompany this offer, authorizing the representative to make this offer.

SIGNED FOR THE TENDERER:		
Name of Representative	**Signature**	**Date**
SIGNED BY WITNESS:		
Name of Representative	**Signature**	**Date**

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

……..

……

Other contact details of the tenderer are:
Telephone no

:……

Cellular phone no

:……

Fax no

:……

Postal address

:……

Banker

:……

Branch

:……

ACCEPTANCE

By signing this part of this form of offer and acceptance, ECDC accepts the bidder's offer. Acceptance of the bidder's offer shall form an agreement between the ECDC and the bidder 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 the contract to be concluded**.**

- Agreements and Contract Data, (which includes this Agreement)
- Pricing data
- Scope of work.
- Site information and drawings

and documents or parts thereof, which may be incorporated by reference into the volumes above.

Deviations from and amendments to the documents listed in the bid data and any addenda thereto as listed in the bid schedules as well as any changes to the terms of the offer agreed by the bidder and ECDC during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless agreed by both parties.

The bidder shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the ECDC's Legal Department to arrange documentation to be provided in terms of the conditions of contract identified in the contract. 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 bidder receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the bidder within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Signed for the ECDC:

Name of representative	**Capacity**	**Date**
…… …… …… ……		
Address	**Signature**	

Witnessed by:

Name of witness	**Signature**	**Date**

Schedule of deviations

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.

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 becomes 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 document 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 document arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1	**Subject**	
	Details	
2	**Subject**	
	Details	
3	**Subject**	
	Details	

By the duly authorised representative signing this agreement, the Employer and the Bidder agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the bid data and addenda thereto as listed in the bid schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Bidder and the employer during this process of acceptance.

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

Signed for the ECDC

Name of Representative	Capacity	Signature

Signed by Bidder:

Name of Representative	Capacity	Signature

C1.2 - Contract data

REFER TO ANNEXURE M

C1.3 – Form of Guarantee

Part C2: Pricing data

C2.1 - Pricing instructions

C2.1: Pricing Instructions

C2.1.1 **PREAMBLE TO THE SCHEDULE OF PRICES**

C2.1.1.1 **All** prices shall be quoted in the currency of the Republic of South Africa and will be held to be firm unless otherwise stated, in which case sufficient information must be afforded at the time of tendering to indicate the basis on which payment shall be adjusted.

C2.1.1.2 The Tenderer shall enter a price against each item in the schedule of prices. If the Tenderer fails to enter a price against any item in the schedule of prices the relevant cost for such item shall be regarded as being covered by other prices in the schedule of prices. **Should an item specifically be excluded from the offer submitted, such tender will be regarded as non-responsive and not be considered.**

C2.1.1.3 The prices quoted against each item of these schedules shall cover the full inclusive cost of everything required for the execution of the work under the item plus an apportionment of any cost involved in meeting the obligations and liabilities imposed by the conditions of contract and in complying with the specifications.

C2.1.1.4 The prices quoted for the supply of plant and equipment shall include for all handling, loading, transporting and off-loading required for the delivery of the plant and equipment to the site, including in the case of off-site storage for double handling at the store.

C2.1.1.5 The prices quoted for erection and installation shall include for all handling, loading, transporting and off-loading, to take plant and equipment to place on site where required, erection, installation, painting, commissioning, operating, testing, adjusting, handing over in proper working order and upholding for a period of 12 months, all as specified.

C2.1.1.6 Any additional charges in connection with off-site storage which there may be over and above the prices quoted in the various sections of these schedules of prices shall be set out in detail by the Tenderer.

C2.1.1.7 The tendered rates and amounts must exclude Value Added Tax (VAT) but must include all levies, other taxes and duties on items to which they apply. Separate provision has been made in the Tender Summary for the purpose of VAT.

C2.1.1.8 Amounts allowed for contingencies will be spent in part or as a whole at the sole discretion of the Principal Agent.

C2.1.1.9 Schedule of Prices shall be completed and signed in **black ink**. Corrections must be done by deleting, rewriting and initialling next to the amendment.

C2.1.1.10 **The Bills of Quantities are not to be used for the purpose of ordering materials.**

DAYWORK SCHEDULE

This Day work Schedule shall be used at the discretion of the Principal Agent for the valuation of extra work, which cannot conveniently be valued at the rates submitted in the Schedule of Quantities.

The rates entered for labour and materials shall not be inclusive of overhead charges and profit, site supervision of staff, insurance, holidays with pay, use and maintenance of small hand tools and non-mechanical plant, travelling allowances, other emoluments and allowances, provision being made for the insertion of percentage, to cover all these items which are henceforth termed "on-costs". The rate used in the deduction of the value of the day work being thus the basic rate plus the percentage "on-costs".

In the case of plant no "on-cost" item is provided. The rate entered shall include any of the above "on-costs" which are pertinent and shall include operator's costs, consumable stores, maintenance, etc.

The Tenderer must fill in each item listed below, or his tender may be rejected as being incomplete.

A LABOUR

1. Labourers ..... per hour plus .....% “On-Cost"
2. **Gangers ..... per hour plus .....% “On-Cost"**
3. Tradesmen ..... per hour plus .....% “On-Cost"

B EQUIPMENT (where not listed in scheduled items)

Description of Work	Rate per hour
.....	.....
.....	.....
.....	.....

Rate for standing time: ..... % of working rate

C MATERIAL

The Tenderer shall state here the percentage "On-Cost" he will add to the basic price of materials: .....%

TENDERER'S NAME: ……COMPANY STAMP:

SIGNATURE: ……

DATE: ……

C2.2 - Bill of Quantities

INDEX TO BILLS OF QUANTITIES

SECTION NO. 1

PRELIMINARIES

Item | Amount

SECTION NO. 1
PRELIMINARIES

PRELIMINARIES

BUILDING AGREEMENT AND PRELIMINARIES

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

The **JBCC** Principal Building Agreement **contract data** form an integral part of this **agreement**

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

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

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

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

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

PREAMBLES FOR TRADES

The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these **bills of quantities** and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained

Supplementary preambles and/or specifications are incorporated in these **bills of quantities** to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles

The **contractor**'s prices for all items throughout these **bills of quantities** shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications}

STRUCTURE OF THIS PRELIMINARIES BILL

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

TOTAL CARRIED TO SECTION SUMMARY **R**

Item			Amount

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

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

PRICING OF PRELIMINARIES

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

SECTION A: PRINCIPAL BUILDING AGREEMENT

Interpretation (A1-A7)

Clause 1.0 - Definitions and interpretation

Pricing of bills of quantities

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

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

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

Abbreviated descriptions

The items in these bills of quantities utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the contractor shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of international best practice

Legal status of contractor

If the contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:

1. These persons are deemed to be jointly and severally liable to the employer for the performance of this agreement

2. These persons shall notify the employer of their leader who has assigned authority to bind the contractor and each of these persons

TOTAL CARRIED TO SECTION SUMMARY	**R**	

Section No. 1

Bill No. 1

Preliminaries

Item			Amount
1	3. The contractor shall not alter its composition or legal status without the prior written consent of the employer	Item	
	F: ..... V: ..... T:		
2	Clause 2.0 - **Law**, regulations and **notices**	Item	
	F: ..... V: ..... T:		
3	Clause 3.0 - Offer and acceptance	Item	
	F: ..... V: ..... T:		
4	Clause 4.0 - Cession and assignment	Item	
	F: ..... V: ..... T:		
5	Clause 5.0 - Documents		
	Value Added Tax		
	Provision is made in the summary page of these bills of quantities for the inclusion of Value Added Tax (VAT)		
	Priced document as specification		
	The principal agent shall decide which portion of the priced document may be used as a specification of materials and goods or methods, if any		
	Electronic issue of drawings		
	All drawings for this project will be issued electronically and the contractor shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically [5.6}	Item	
	F: ..... V: ..... T:		
6	Clause 6.0 - Employer's agents		
	Delegated authority		
	The authority of the principal agent to issue contract instructions [17.1] and perform duties for specific aspects of the works is delegated to agents as follows [6.2] This does not preclude the principal agent from issuing such contract instructions.		
	1. Architect		
	1.1 Duties [6.2]		
	The architect is responsible for the architectural design, functional design and quality inspection of the work		
	Contract instructions [6.2; 17.1]		
	Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement		
	Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works		
	1.2.3 The site		
	1.2.4 1033 Compliance with the law, regulations and bylaws [2.1]		
	1.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

Section No. 1

Bill No. 1

Preliminaries

Item			Amount
	1.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
	1.2.7 Removal or re-execution of work		
	1.2.8 Removal or substitution of any materials and goods		
	1.2.9 Protection of the works		
	1.2.10 Making good physical loss and repairing damage to the works [23.2.2]		
	1.2.11 Rectification of defects [21.2]		
	1.2.12 A list for practical completion specifying outstanding or defective work to be rectified to achieve completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
	1.2.13 Expenditure of budgetary allowances, prime cost amounts and provisional sums		
	1.2.14 Appointment of a subcontractor [14.0; 15.0]		
	1.2.15 Work by direct contractors [16.0]		
	1.2.16 On suspension or termination, protection of the works, removal of construction equipment and surplus materials and goods [29.0]		
	2. Quantity surveyor		
	2.1 Duties [6.2]		
	The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the works		
	2.2 Contract instructions [6.1]		
	2.2.1 No contract instructions delegated to the quantity surveyor		
	3. Civil and structural engineer		
	3.1 Duties [6.2]		
	The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the works		
	Contract instructions [6.2; 17.1]		
	3.2.1 Rectification of discrepancies, errors in description quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement		
	3.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works		
	3.2.3 The site [13.0]		
	3.2.4 Compliance with the law, regulations and bylaws [2.1]		
	3.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works		
	3.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
	3.2.7 Removal or re-execution of work		
	3.2.8 Removal or substitution of any materials and goods		
	3.2.9 Protection of the works		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

Section No. 1
Bill No. 1
Preliminaries

Item			Amount
	3.2.10 Making good physical loss and repairing damage to the works [23.2.2]		
	3.2.11 Rectification of defects [21.2]		
	3.2.12 A list for practical completion} specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
	3.2.13 Expenditure of budgetary allowances, prime cost amounts and provisional sums		
	4. Mechanical engineer		
	4.1 Duties [6.2]		
	The mechanical engineer is responsible for all aspects of mechanical engineering design and quality inspection of the works and, where appointed by the employer for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions 4.2 Contract instructions [6.2; 17.1]		
	4.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the Principal Building Agreement		
	4.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works		
	4.2.3 Compliance with the law, regulations and bylaws [2.1]		
	4.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works		
	4.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
	4.2.6 Removal or re-execution of work		
	4.2.7 Removal or substitution of any materials and goods		
	4.2.8 Protection of the works		
	4.2.9 Making good physical loss and repairing damage to the works [23.2.2]		
	4.2.10 Rectification of defects [21.2]		
	4.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
	4.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums		
	5. Electrical engineer		
	5.1 Duties [6.2]		
	The electrical engineer is responsible for all aspects of electrical engineering design and quality inspection of the works and, where appointed by the employer for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

Section No. 1

Bill No. 1

Preliminaries

Item			Amount
	Contract instructions [6.2; 17.1]		
	5.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement		
	5.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works		
	5.2.3 Compliance with the law, regulations and bylaws [2.1]		
	5.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works		
	5.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
	5.2.6 Removal or re-execution of work		
	5.2.7 Removal or substitution of any materials and goods		
	5.2.8 Protection of the works		
	5.2.9 Making good physical loss and repairing damage to the works [23.2.2]		
	5.2.10 Rectification of defects [21.2]		
	5.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
	5.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums 6. Wet services engineer - N/A		
	7. Fire consultant - N/A		
	8. Health and safety consultant		
	8.1 Duties [6.2]		
	The health and safety consultant is responsible for all aspects of health and safety of the works. Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the works. He shall :		
	8.1.1 Act as the employer's agent in terms of the Construction Regulations issued in terms of the Occupational Health and Safety Act,1993 (as amended		
	8.1.2 Prepare and update the health and safety specification for the works		
	8.1.3 Agree with the contractor the health and safety plan for the works		
	8.1..4 Carry out regular audits to ensure adherence to the safety plan and compliance with the Act and Regulations		
	8.1.5 Stop the execution of the works where the agreed specification or plan is not adhered to	Item	
	F: ..... V: ..... T:		
7	Clause 7.0 - Design responsibility	Item	
	F: ..... V: ..... T:		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

Section No. 1

Bill No. 1

Preliminaries

Item			Amount
	Insurances and securities (A8-A11)		
8	Clause 8.0 - **Works** risk	Item	
	F: ..... V: ..... T:		
9	Clause 9.0 - Indemnities	Item	
	F: ..... V: ..... T:		
10	Clause 10.0 - Insurances	Item	
	F: ..... V: ..... T:		
11	Clause 11.0 - Securities		
	Guarantee for payment		
	The employer shall provide to the contractor a guarantee for payment in the amount of ..N/A...[11.5.1]. The contractor shall consequently waive his lien or right of continuing possession of the works N/A [11.1}		
	Extension of waiver of lien		
	The contractor shall ensure that a waiver of lien is included in all subcontracts and that the works executed on the site are kept free of all liens and other encumbrances at all times [11.10] - N/A	Item	
	F: ..... V: ..... T:		
	Execution (A12 - A17) }		
12	Clause 12.0 - Obligations of the parties		
	Office accommodation		
	The contractor shall provide, maintain and remove on practical completion air conditioned office accommodation with suitable tables and chairs for meetings to be held on the site. Such offices shall be kept clean and fit for use at all times [12.2.18]		
	Notice board		
	The contractor shall erect in a position approved by the principal agent, maintain and remove on practical completion a notice board recommended by the South African Institute of Architects and as approved by the principal agent listing the names and logos of the employer, the contractor and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the principal agent for such notice boards to be erected [12.2.18]		
	Statutory and other notices		
	The contractor shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the works by the contractor. The contractor shall pay all deposits or fees in this regard.		
	It is, however, specifically recorded that the employer shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto	Item	
	F: ..... V: ..... T:		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

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Item			Amount
13	Clause 13.0 - Setting out F: ..... V: ..... T:	Item	
14	Clause 14.0 - Nominated **subcontractors** F: ..... V: ..... T:	Item	
15	Clause 15.0 - Selected **subcontractors** F: ..... V: ..... T:	Item	
16	Clause 16.0 - Direct contractors Attendance on direct contractors In respect of direct contractors the contractor shall: 1. Designate an area for the direct contractor to establish a temporary office and workshop and storage of equipment and materials 2. Allow the user of personnel welfare facilities, where provided 3. Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation 4. Permit the direct contractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right, while it remains erected on the site [16.1] F: ..... V: ..... T:	Item	
17	Clause 17.0 - Contract instructions Site instructions issued on site are to be recorded in a site instruction book which is to be supplied and maintained on site by the **contractor** F: ..... V: ..... T:	Item	
	Completion (A18 - A24)		
18	Clause 18.0 - Interim completion F: ..... V: ..... T:	Item	
19	Clause 19.0 - Practical completion F: ..... V: ..... T:	Item	
20	Clause 20.0 - Completion in sections F: ..... V: ..... T:	Item	
21	Clause 21.0 - Defects liability period and final completion F: ..... V: ..... T:	Item	
22	Clause 22.0 - **Latent defects** liability period F: ..... V: ..... T:	Item	
23	Clause 23.0 - Revision of the date for **practical completion** **Substitution of materials and goods**		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

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Item			Amount
	The removal or substitution of any **materials and goods** which do not conform to the specification or the contract drawings shall not constitute grounds for the extension of the construction period nor for the adjustment of the **contract value** [17.1.8; 23.1 & 2]	Item	
	F: ..... V: ..... T:		
24	Clause 24.0 - Penalty for late or non-completion	Item	
	F: ..... V: ..... T:		
	Payment (A25 - A27)		
25	Clause 25.0 - Payment		
	Prices submitted		
	Where prices are submitted by the contractor or subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of this agreement and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the certificate of final completion, it shall be in writing		
	Fluctuations in costs		
	All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the contractor	Item	
	F: ..... V: ..... T:		
26	Clause 26.0 - Adjustment of the contract value and final account		
	Fluctuations in costs		
	All fluctuations in costs, with the exception of fluctuations in the rate of Value		
	Added Tax, shall be for the account of the contractor [26.9.5]		
	Tenant installation/user requirements delayed		
	There is a possibility that certain works related to tenant installation/user requirements may have to be delayed and may consequently not be executed prior to practical completion		
	The employer reserves the right to omit such work without compensation to the contractor for loss of profit or any other loss which the contractor may suffer as a result of such omission		
	Should the contractor be instructed to do so he shall execute this work under the conditions pertaining to this agreement on the basis that a separate amount for preliminaries appurtenant to this work (if applicable) is agreed to between the contractor and the principal agent and on condition that instruction to proceed with such work is given to him within a period of three (3) calendar months after the date of practical completion of the works		
	Cost of claims		
	All costs incurred by the contractor in the preparation of claims shall be borne by the contractor. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this agreement [30.6 & 7] from making a determination on costs		
	Claims from subcontractors		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	
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Item			Amount
	The contractor shall review, assess and adjudicate any claims received by him from any subcontractor and thereafter submit same to the principal agent with a recommendation in order to assist the principal agent in adjudicating the claim [26.6]	Item	
	F: ..... V: ..... T:		
27	Clause 27.0 - Recovery of expense and/or loss	Item	
	F: ..... V: ..... T:		
	Suspension and termination (A28 - A29)		
28	Clause 28.0 - Suspension by the **contractor**	Item	
	F: ..... V: ..... T:		
29	Clause 29.0 - Termination	Item	
	F: ..... V: ..... T:		
	Dispute resolution (A30)		
30	Clause 30.0 - Dispute resolution		
	Agreement		
	The required information of the parties and the amount of the contract sum shall be inserted in the agreement for signature of the agreement by the parties		
	Contract		
	Tenderer's selection		
	Before submission of his tender the contractor is to complete the tenderer's selections in the contract data	Item	
	F: ..... V: ..... T:		
	SECTION B: GENERAL PRELIMINARIES		
	Definitions and interpretation (B1)		
31	Clause 1.1 - Definitions	Item	
	F: ..... V: ..... T:		
32	Clause 1.2 - Interpretation	Item	
	F: ..... V: ..... T:		
	Documents (B2)		
33	Clause 2.1 - Checking of documents	Item	
	F: ..... V: ..... T:		
34	Clause 2.2 - Provisional bills of quantities		
	Multiple procurement		
	These bills of quantities are in multiple procurement format i.e. the 'wet trades' - earthworks, concrete, formwork and reinforcement, precast concrete, masonry, waterproofing and sub-surface drainage - are provisionally measured and the subsequent trades are budgetary allowances and/or provisional sums	Item	
	F: ..... V: ..... T:		
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Item			Amount
35	Clause 2.3 - Availability of **construction information** F: ..... V: ..... T:	Item	
36	Clause 2.4 - Ordering of **materials and goods** F: ..... V: ..... T:	Item	
	Previous work and adjoining properties (B3)		
37	Clause 3.1 - Previous work - dimensional accuracy F: ..... V: ..... T:	Item	
38	Clause 3.2 - Previous work - defects F: ..... V: ..... T:	Item	
39	Clause 3.3 - Inspection of adjoining properties F: ..... V: ..... T:	Item	
	The site (B4)		
40	Clause 4.1 - Handover of site in stages F: ..... V: ..... T:	Item	
41	Clause 4.2 - Enclosure of **the works** The contractor shall suitably enclose the works as required by the Occupational Health and Safety Act and prevent any unauthorised access to the site. F: ..... V: ..... T:	Item	
42	Clause 4.3 - Geotechnical and other investigations F: ..... V: ..... T:	Item	
43	Clause 4.4 - Encroachments F: ..... V: ..... T:	Item	
44	Clause 4.5 - Existing premises occupied F: ..... V: ..... T:	Item	
45	Clause 4.6 - Services - known F: ..... V: ..... T:	Item	
	Management of contract (B5)		
46	Clause 5.1 - Management of **the works** F: ..... V: ..... T:	Item	
47	Clause 5.2 - Progress meetings F: ..... V: ..... T:	Item	
48	Clause 5.3 - Technical meetings F: ..... V: ..... T:	Item	
	Samples, shop drawings and manufacturer's instructions (B6)		
49	Clause 6.1 - Samples of materials F: ..... V: ..... T:	Item	
50	Clause 6.2 - Workmanship samples F: ..... V: ..... T:	Item	
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Item			Amount
51	Clause 6.3 - Shop drawings F: ..... V: ..... T:	Item	
52	Clause 6.4 - Compliance with manufacturer's instructions F: ..... V: ..... T:	Item	
	Deposits and fees (B7)		
53	Clause 7.1 - Deposits and fees F: ..... V: ..... T:	Item	
	Temporary services (B8)		
54	Clause 8.1 - Water F: ..... V: ..... T:	Item	
55	Clause 8.2 - Electricity F: ..... V: ..... T:	Item	
56	Clause 8.3 - Ablution and welfare facilities F: ..... V: ..... T:	Item	
57	Clause 8.4 - Communication facilities F: ..... V: ..... T:	Item	
	Prime cost amounts (B9)		
58	Clause 9.1 - Responsibility for **prime cost amounts** Where details of materials for which prime cost amounts are to be allowed **are** readily available, the quantity surveyor may elect to insert the relevant prime cost amounts in measured items, which measured items shall contain sufficient detail for the **contractor** to price for fixing and installation, waste, etc F: ..... V: ..... T:	Item	
	Attendance on subcontractors (B10)		
59	Clause 10.1 - General attendance F: ..... V: ..... T:	Item	
60	Clause 10.2 - Special attendance F: ..... V: ..... T:	Item	
	General (B11)		
61	Clause 11.1 - Protection of the **works** F: ..... V: ..... T:	Item	
62	Clause 11.2 - Protection/isolation of existing **works** and **works** occupied in sections F: ..... V: ..... T:	Item	
63	Clause 11.3 - Security of **the works** F: ..... V: ..... T:	Item	
64	Clause 11.4 - Notice before covering work F: ..... V: ..... T:	Item	
65	Clause 11.5 - Disturbance		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item			Amount
	Disturbance All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the construction period or contract value whatsoever	Item	
	F: ..... V: ..... T:		
66	Clause 11.6 - Environmental disturbance Controlling all forms of pollution The contractor shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the site during the construction period due inter alia to noise, artificial light, windblown sand, dust, deposits of mud, etc. The contractor is to ensure that all roads which border the site and are used by the contractor during the execution of the works are kept clean and free of any dirt or debris caused by the execution of the works		
	Environmental management plan The employer has prepared an environmental management plan (EMP) (N/A). The contractor shall price opposite this item for compliance with all the requirements of a generic EMP. - Contractor to make provision for standard generic environmental related items in the absence of a project specific environmental management plan.	Item	
	F: ..... V: ..... T:		
67	Clause 11.7 - **Works** cleaning and clearing	Item	
	F: ..... V: ..... T:		
68	Clause 11.8 - Vermin	Item	
	F: ..... V: ..... T:		
69	Clause 11.9 - Overhand work	Item	
	F: ..... V: ..... T:		
70	Clause 11.10 - Tenant installations	Item	
	F: ..... V: ..... T:		
71	Clause 11.11 - Advertising	Item	
	F: ..... V: ..... T:		
	SECTION C: SPECIFIC PRELIMINARIES		
	Specific Preliminaries		
	Warranties for materials and workmanship:		
72	Warranties for materials and workmanship Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the entity supplying the materials and/or executing the work and shall deliver same to the principal agent on final completion of the contract		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	
	Section No. 1 Bill No. 1 Preliminaries		

Item			Amount
	The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of practical completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor F: ..... V: ..... T:	Item	
	Overtime:		
73	Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the **contractor** unless the **principal agent** has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the **employer** F: ..... V: ..... T:	Item	
	Cooperation of the contractor for cost management:		
74	It is specifically agreed that the **contractor** accepts the obligation of assisting the **principal agent** in implementing proper cost management. The **contractor** will be advised by the **principal agent** of all cost management procedures which will be implemented to ensure that the **contract value** does not exceed the budget F: ..... V: ..... T:	Item	
	Overloading:		
75	The **contractor** shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of **the works** or temporary works e.g. scaffolding, etc. The **contractor** shall submit details of his proposed loading, storage, plant erection, etc to the **principal agent** for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the **principal agent's** requirements in connection with the provision of temporary support work, etc. Any damage caused to the **works** by overloading shall be made good by the **contractor** at his sole expense F: ..... V: ..... T:	Item	
	Propping of floors below:		
76	The **contractor** is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of **materials and goods** and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the **principal agent** and the cost thereof shall be borne by the **contractor** F: ..... V: ..... T:	Item	
	Testing of flat roof waterproofing for watertightness:		
77	Flat roof waterproof areas shall be flooded and kept 'ponded' for at least forty eight hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing F: ..... V: ..... T:	Item	
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item			Amount
	Shop Drawings:		
78	The term 'shop drawings' shall mean drawings, layout drawings, diagrams, illustrations, schedules, performance charts, brochures, operating manuals and other data which are prepared by the Contractor or any Sub-Contractor, manufacturer, supplier or distributor and which illustrate the specified portion of the work. The Contractor shall ensure that all shop drawings required for the Works in terms of this Contract, all Selected/Nominated Sub-Contracts and/or any Principal Agent's instruction, are prepared and submitted timeously in accordance with the following procedure: A) Three prints of shop drawings of all fabricated work, working or setting out drawings, shop details and schedules shall be submitted to the Principal Agent, for approval. Such work shall not be carried out until such approval has been given. B) Shop drawings shall be submitted to the Principal Agent for approval at least two weeks prior to the date on which such approval is required in order to comply with the Contract Programme. C) All submissions shall be prepared in accordance with the Contract drawings and specifications and/or any Principal Agents instructions and any deviation shall be specifically highlighted in writing, with a detailed explanation of the reason for such deviation, together with any cost and/or time implications. Delays in approval of shop drawings due to noncompliance with drawings, specifications and/or Principal Agents instructions shall not constitute grounds for any claims for delay, extension of time and the like. D) When the Principal Agent advises that shop drawings have been approved, the original transparencies of such drawings shall immediately be submitted to the Principal Agent so that the Principal Agents stamp of approval may be appended thereto. Thereafter, four prints of the approved shop drawings, setting out drawings and schedules shall be furnished to the Principal Agent. As many prints of the approved shop drawings and schedules as required shall also be furnished to the Works. No work shall be performed in accordance with drawings and/or catalogues not stamped with the Principal Agents approval. E) The Contractor, Sub-Contractor or Supplier, as the case may be, shall be responsible for ensuring that all dimensions affecting shop drawings conform to the dimensions of built work. F) The Principal Agents approval of shop drawings is limited to checking conformity with specification and shall not relieve the Contractor, Sub- Contractor or Supplier of his responsibility for design, erect ion or installation fit, nor does it vary his contractual or delictual obligations and liabilities. G) Should the Contractor, Sub-Contractor or Supplier be of the opinion that corrections to shop drawings made by the Principal Agent constitute a change to the scope of work, then he shall immediately advise the Principal Agent in writing of this, together with the cost and/or programme implications thereof, in order to obtain the Architects directive. H) One copy of the final approved set of 'Shop Drawings' is to be submitted to the Quantity Surveyors for purposes of valuation remeasurement.	Item	

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

TOTAL CARRIED TO SECTION SUMMARY **R**

Section No. 1

Bill No. 1

Preliminaries

Item			Amount
	Health and safety:		
	The contractor shall comply with all the requirements set out in the Construction Regulations, 2014 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993). It is required of the contractor to thoroughly study the Health and Safety Specification that must be read together with and is deemed to be incorporated under this Section of the Bills of Quantities / Lump Sum document.		
	The contractor must take note that compliance with the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is compulsory. In the event of partial or total non-compliance, the principal agent, notwithstanding the provisions of clause A31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress payment certificate until the contractor provides satisfactory proof of compliance. The contractor shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment Provision for pricing of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is made under this clause and it is explicitly pointed out that all requirements of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained.		
79	The Contractors attention is drawn to Health and Saftey and Environmental Specification and Base Line Risk Assessment included in these Bills of Quantities. The Contractor shall price hereunder all other items that are likely to attract cost in compliance with the Construction Regulations, 2014 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), excluding the items included in the 'Breakdown of Pricing Health and Safety' in Section 6 of these Bills of Quantities.	Item	
	F: ..... V: ..... T:		
	Green star building certification:		
80	Green star building certification - NA	Item	N/A
	F: ..... V: ..... T:		
	SMME'S		
81	The principal contractor shall comply with all the requirement of mandatory subcontracting of SMMEs **where feasible** of up to **20%** of their contract value (Including VAT) as stipulated under the SMME subcontracting requirements. The Principal Contractor shall on fulltime basis closely mentor, manage and supervise all SMMEs and shall manage, guide and assist each SMMEs in all aspects of management, execution and completion of his/her subcontract. This shall typically include the on-site productivity planning and management of materials, cost management, contract management, Health and Safety management, quality management, communication management and close-out documentation.		
	Provision for pricing of compliance with the aforementioned is made under this clause and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained.	Item	
	F: ..... V: ..... T:		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

Section No. 1
Bill No. 1
Preliminaries

Item			Amount
	Advertising rights:		
82	The employer may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The **contractor** shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the **principal agent** so as not to hinder the **contractor** in meeting his obligations under this agreement	Item	
	F: ..... V: ..... T:		
	Confidentiality:		
83	The **contractor** undertakes to maintain in confidence any and all information regarding this project and shall obtain appropriate similar undertakings from all **subcontractors** and suppliers. Such information shall not be used in any way except in connection with the execution of the **works**		
	No information regarding this project shall be published or disclosed without the prior written consent of the employer	Item	
	F: ..... V: ..... T:		
	Media releases:		
84	All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the **employer**		
	The **contractor** together with his **subcontractors** shall not, without the prior written consent of the employer, cause any statement or advertisement connected with this project to be printed, screened or aired by the media	Item	
	F: ..... V: ..... T:		
	TOTAL CARRIED TO SECTION SUMMARY	**R**	

SECTION NO. 1

PRELIMINARIES

SECTION SUMMARY

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SECTION NO. 2

BUILDING WORKS

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2

BUILDING WORKS

Bill No. 1

EARTHWORKS

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Nature of ground

The nature of the ground is assumed to be earth, but possibly interspersed with 'soft rock' or 'hard rock'

Excavation for working space in rock:

Notwithstanding clause 11 page 8 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as 'extra over' bulk excavation or trench and hole excavation as the case may be

Carting away of excavated material:

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site

Filling:

Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material

User Note - When no information regarding density tests is available the following preamble in respect of testing may be inserted

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	Testing:				
	Prices for filling are to include for all necessary density tests in accordance with SABS 1200D				
	View site:				
	Before submitting his tender the contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained				
	Explosives:				
	No explosives whatsoever may be used for demolition purposes unless otherwise stated				
	General:				
	The contractor shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining premises and their tenants. He shall provide proper protection and provide, erect and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the principal agent				
	SUPPLEMENTARY PREAMBLES				
	Carting away of excavated material:				
	Note: The removal of bitumen paving has not been measured, and forms part of the relevant excavations. No payment will be made for the removal of bitumen paving's when it forms part of areas to be excavated.				
	Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site.				
	DEMOLITIONS ETC (CPAP Work Group No 102)				
	Breaking up and removing:				
1	125mm Thick unreinforced concrete surface beds, paving, etc.	m²	317		
	Ext 317				
2	5000l Jojo tank and circular tank stand.	No	1		
	Ext 1				
	Demolishing and removing:				
3	Canopy attached to warehouse, 12,8 x 6,03 on plan and 3,00m high at eaves, comprising of IBR roof sheeting on steel rafters and columns.	No	1		
	Ware 1				
	TOTAL CARRIED TO BILL SUMMARY			**R**	
	Section No. 2				
	Bill No. 1				
	Earthworks				

Item		Unit	Quantity	Rate	Amount
4	Single storey building with mono pitched roof, 10,67 x stepping from 4,13 to 7,86m on plan (approximate area = 65m2) and average 3,5m high overall, comprising unreinforced concrete surface bed, brick external and internal walls, asbestos roof sheeting on timber trusses.	No	1		
	Ext 1				
5	Single storey building with pitched roof, 37,0 x 9,3m on plan and 3,85m high at eaves, comprising unreinforced concrete surface bed, corrugated iron external walls, corrugated iron internal walls and asbestos roof covering on timber trusses. (workshop)	No	1		
	Ext 1				
	SITE CLEARANCE, ETC (CPAP Work Group No 104)				
	Site clearance, etc.:				
6	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, scoffing up as required and cart away all vegetation and debris.	m²	1 706		
	Ext 1706				
7	Stripping average 200mm thick layer of top soil and depositing material in prescribed stock piles on site	m²	1 706		
	Ext 1706				
	BULK EXCAVATION (CPAP Work Group No 104)				
	Open face excavation in earth over sloping site:				
8	Open face excavation.	m³	635		
	Ext 635				
	Extra over bulk excavation in earth for excavation in:				
9	Soft rock.	m³	413		
	Ext 413				
10	Hard rock.	m³	191		
	Ext 191				
	BULK FILLING ETC (CPAP Work Group No 104)				
	Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density:				
11	Over site to form platforms	m³	55		
	Ext 55				
	EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)				
	Excavation in earth not exceeding 2m deep:				
12	Trenches.	m³	95		
	Ware 88 Refu 7				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 1
Earthworks

Item		Unit	Quantity	Rate	Amount
13	Holes. Ware 162	m³	162		
14	Thickening under surface beds etc. Ware 2	m³	2		
	Extra over excavations other than bulk in earth for excavation in:				
15	Soft rock. Ware 75 Refu 2	m³	77		
16	Hard rock. Ware 37 Refu 1	m³	38		
	Risk of collapse of excavations other than bulk:				
17	Sides of trench and hole excavations not exceeding 1,5m deep. Ware 256 Refu 22	m²	278		
18	Sides of trench and hole excavations exceeding 1,5m deep. Ware 297	m²	297		
	CARTING AWAY (CPAP Work Group No 104)				
	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):				
19	Off site to a dumping site to be found by the Contractor. Ware 328 Refu 9 Ext 890	m³	1 227		
	EARTH FILLING, ETC (CPAP Work Group No 104)				
	Filling with material from the excavations compacted to a density of at least 95% Mod. AASHTO maximum density:				
20	Backfilling to trenches, holes, etc. Ware 76 Refu 2	m³	78		
	Filling with approved G7 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 93% Mod AASHTO density.				
21	Under floors, paving's, etc. Ware 94 Refu 1	m³	95		
	Filling with approved G7 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 95% Mod AASHTO density.				
22	Under floors, paving's, etc. Ware 94 Refu 1	m³	95		
23	Backfilling to trenches, holes, etc. Ware 64 Refu 1	m³	65		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 1
Earthworks

Item		Unit	Quantity	Rate	Amount
	Filling with over site of G5 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 98% Mod AASHTO density.				
24	Under floors, paving's, etc. Ware 94	m³	94		
25	Backfilling to trenches, holes, etc. Ware 12 Refu 1	m³	13		
	Coarse river sand filling compacted to 98% Mod. AASHTO maximum density:				
26	Under floors, etc. Ware 31	m³	31		
	Surface Preparation:				
27	Trim and level off surface of ground (excavated or filled under this Contract) to receive concrete surface beds, including excavating or filling, ripping and scarifying as necessary and compacting the whole area for a depth of 150mm to a density of at least 90% Mod. AASHTO maximum density, part to falls. Ware 629 Refu 9 Ext 2103	m²	2 741		
	KEEPING EXCAVATIONS FREE OF WATER (CPAP Work Group No 104)				
	Keeping excavations free of water:				
28	Keeping excavations free of all water other than subterranean water. I 1	Item			
	TESTS (CPAP Work Group No 104)				
	Prescribed density tests on filling:				
29	Modified AASHTO Density test. Ware 19 Refu 1	No	20		
30	Natural California Bearing Ratio test. Ware 2	No	2		
31	Road Indicator test. Ware 3	No	3		
32	Field Density test, including Optimum Moisture Content test (four readings per test) Ware 5	No	5		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	SOIL POISONING (CPAP Work Group No 104)				
	Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:				
33	Under floors, etc., including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming.	m²	638		
	Ware 629 Refu 9				
34	To bottoms and sides of trenches and holes, etc.	m²	369		
	Ware 341 Refu 28				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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EARTHWORKS
BILL SUMMARY

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Section No. 2
Bill No. 1
Earthworks

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2

BUILDING WORKS

Bill No. 2

CONCRETE, FORMWORK AND REINFORCEMENT

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Cost of tests:

The costs of making, storing and testing of concrete test cubes as required under clause 7 'Tests' of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the Architect. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Architect. (Test cubes are measured separately).

Breeze Concrete:

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (12:1), the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated.

Celbeton Lightweight Concrete:

Celbeton lightweight concrete is to have a density of 1000kg/m3 for the top 20mm and 408kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc. shall be 30mm.

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	Foamcement Lightweight Concrete:				
	Foamcement lightweight concrete is to have a density of 600kg/m3 for the top 50mm and 500kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc. shall be 50mm.				
	Formwork:				
	Descriptions of formwork shall be deemed to include use and waste only (except where described as left in or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.				
	The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.				
	Formwork to soffits of solid slabs etc., shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described.				
	Formwork to sides of bases, pile caps, ground beams, etc., will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks.				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)				
	15Mpa/19mm Concrete				
1	Surface blinding under footings and bases.	m³	11		
	Ware 11				
	30MPa 19mm concrete:				
2	Surface beds cast in panels on waterproofing.	m³	128		
	Ware 128				
	REINFORCED CONCRETE (CPAP Work Group No 110)				
	30MPa/19mm Concrete:				
3	Columns in foundations.	m³	4		
	Ware 4				
4	Columns.	m³	1		
	Ware 1				
5	Slabs including beams and inverted beams.	m³	14		
	Ware 14				
	TOTAL CARRIED TO BILL SUMMARY			**R**	
	Section No. 2				
	Bill No. 2				
	Concrete, Formwork And Reinforcement				

Item		Unit	Quantity	Rate	Amount
6	Stairs including landings, beams and inverted beams. Ware 2	m³	2		
7	Isolated beams. Ware 2	m³	2		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)				
	20MPa/19mm Concrete:				
8	Strip footings. Ware 25 Refu 1	m³	26		
9	Bases. Ware 52	m³	52		
	30MPa/19mm Concrete:				
10	Surface beds cast in panels on waterproofing. Refu 1	m³	1		
	TEST BLOCKS (CPAP Work Group No 110)				
	Test blocks:				
11	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes. Ware 38	Sets	38		
	FINISHING TOP SURFACE OF CONCRETE (CPAP Work Group No 110)				
	Finishing top surfaces of concrete smooth with a power float:				
12	Surface beds, slabs, etc. Ware 708 Refu 9	m²	717		
	Finishing top surfaces of concrete smooth with a wood float:				
13	Tops of beams, walls, treads, etc Ware 4 Refu 1	m²	5		
	GROUTING (CPAP Work Group No 110)				
	35MPa non-shrink grout:				
14	Bedding approximately 335 x 225 x 20mm thick to 280 x 170mm base plate including chamfered edges all round. Ware 4	No	4		
15	Bedding approximately 420 x 200 x 20mm thick to 370 x 250mm base plate including chamfered edges all round. Ware 18	No	18		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 2
Concrete, Formwork And Reinforcement

Item		Unit	Quantity	Rate	Amount
	ROUGH FORMWORK (DEGREE OF ACCURACY II) (CPAP Work Group No 111)				
	Rough Formwork to Sides:				
16	Rectangular columns in foundations.	m²	39		
	Ware 39				
17	Beams. (above brickwork)	m²	1		
	Ware 1				
18	Rectangular columns.	m²	9		
	Ware 9				
19	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	52		
	Ware 52				
	Rough formwork to sides and soffits:				
20	Isolated beams, lintels etc., propped up exceeding 1,5m and not exceeding 3,5m high.	m²	21		
	Ware 19 Refu 2				
	Boxing in rough formwork to form:				
21	25 x 25mm Vertical chamfer at corner.	m	124		
	Ware 124				
22	25 x 25mm Chamfers along top or bottom edges.	m	26		
	Ware 20 Refu 6				
23	400mm Wide x 242mm deep x 200mm high recess in top of column.	No	18		
	Ware 18				
	SMOOTH FORMWORK (DEGREE OF ACCURACY II) (CPAP Work Group No 111)				
	Smooth Formwork to Sides:				
24	Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	69		
	Ware 69				
25	Sloping and stepped outer edges of stairs 310mm high extreme.	m	9		
	Ware 9				
	Smooth Formwork to Soffits:				
26	Slabs propped up exceeding 1,5 not exceeding 3,5m high.	m²	67		
	Ware 67				
27	Landings.	m²	3		
	Ware 3				
28	Stairs with sloping soffits.	m²	5		
	Ware 5				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	Smooth formwork to sides and soffits:				
29	Beams propped up exceeding 1,5m and not exceeding 3,0m high.	m²	8		
	Ware 8				
	Boxing in smooth formwork to form:				
30	25 x 25mm Chamfers along top or bottom edges.	m	13		
	Ware 13				
	MOVEMENT JOINTS ETC (CPAP Work Group No 111)				
	Two layers five-ply 'abe Malthoid' or equal approved:				
31	In horizontal slip joints between horizontal concrete and brick surfaces including cement mortar bed not exceeding 300mm wide.	m²	11		
	Ware 11				
	Saw cut joints:				
32	3 x 50mm Saw-cut joints in top of concrete with the top 25mm increased to 6mm wide.	m	322		
	Ware 322				
	Vertical joggle construction joints through concrete including applying bond bitumen or whitewash to mating face and finishing joint with a nosing tool:				
33	Surface beds not exceeding 300mmm thick.	m	161		
	Ware 161				
	Expansion joints with low density (33kg/m³), cross linked, closed cell, expanded polyethylene joint former, with tear off strip fitted to concrete surface with adhesive as per adhesive manufacturer's recommendation between vertical concrete and brick surfaces:				
34	10mm Isolation joints not exceeding 300mm high between columns and brickwork.	m	182		
	Ware 182				
35	12mm Isolation joints not exceeding 300mm high to edges of surface beds.	m	201		
	Ware 201				
	REINFORCEMENT (CPAP Work Group No 114)				
	Mild steel reinforcement to structural concrete work:				
36	8mm Diameter bars.	Tonnes	0.04		
	Ware 0.04				
37	10mm Diameter bars.1	Tonnes	0.10		
	Ware 0.1				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2

Bill No. 2

Concrete, Formwork And Reinforcement

Item		Unit	Quantity	Rate	Amount
	High tensile steel reinforcement to structural concrete work:				
38	20mm Diameter bars. Ware 0.27 Refu 0.01	Tonnes	0.28		
39	16mm Diameter bars. Ware 1.16	Tonnes	1.16		
40	12mm Diameter bars. Ware 2.05 Refu 0.01	Tonnes	2.06		
41	10mm Diameter bars. Ware 1	Tonnes	1.00		
	Fabric reinforcement:				
42	Type 617 fabric reinforcement in concrete surface beds, slabs, etc. Refu 9	m²	9		
43	Type 617 fabric reinforcement in concrete strip footings, etc. Ware 85 Refu 5	m²	90		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 2
Concrete, Formwork And Reinforcement

Amount

Bill No. 2

CONCRETE, FORMWORK AND REINFORCEMENT

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Item		Unit	Quantity	Rate	Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 3
MASONRY

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

BRICKWORK

Sizes in descriptions:

Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick.

Hollow walls etc:

Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole.

Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats 'Brixeal' bitumen emulsion waterproofing coating.

Face bricks:

Bricks shall be ordered timeously to obtain uniformity in size and colour.

Pointing:

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.

BRICKWORK IN FOUNDATIONS (CPAP Work Group No 116)

Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:

1	One brick walls. Ware 149	m²	149		

	TOTAL CARRIED TO BILL SUMMARY	**R**	

Section No. 2
Bill No. 3
Masonry

Item		Unit	Quantity	Rate	Amount
	BRICKWORK IN SUPERSTRUCTURE (CPAP Work Group No 116)				
	Brickwork of NFP bricks in class II mortar:				
2	Half brickwalls.	m²	30		
	Ware 30				
3	Half brick walls in beam filling.	m²	1		
	Refu 1				
4	One brick walls.	m²	112		
	Ware 92 Refu 20				
5	One brick walls of two half brick skins bagged and sealed. (bagging and sealing elsewhere)	m²	409		
	Ware 409				
	BRICKWORK SUNDRIES (CPAP Work Group No 116)				
	Bagging of 1:3 cement and sand mixture:				
6	On brick walls, piers, etc.	m²	358		
	Ware 358				
	Brickwork reinforcement:				
7	75mm Wide reinforcement built in horizontally.	m	673		
	Ware 671 Refu 2				
8	150mm Wide reinforcement built in horizontally.	m	849		
	Ware 782 Refu 67				
9	150mm Wide reinforcement built in horizontally in foundations.	m	1 747		
	Ware 1747				
	Prestressed fabricated lintels:				
10	110 x 75mm Lintels in lengths not exceeding 3m.	m	50		
	Ware 47 Refu 3				
	Galvanised hoop iron cramps, ties, etc:				
11	40 x 1,6mm Wall tie 500mm long with one end shot pinned to concrete and other end built into brickwork, including forming hole through joint forming material.	No	198		
	Ware 198				
12	40 x 1,6mm Wall tie 500mm long with one end shot pinned or fixed to steel and other end built into brickwork, including forming hole through joint forming material.	No	337		
	Ware 337				
13	30 x 1,6mm Cramp 500mm long with one end fixed to wood and other end built into brickwork.	No	120		
	Ware 120				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 3
Masonry

Item		Unit	Quantity	Rate	Amount
14	30 x 1,6mm Roof tie 1,5m long with one end built into brickwork and other end fixed to timber. Refu 11	No	11		
15	30 x 1,6mm Roof tie 1,5m long with one end cast into concrete and other end fixed to timber. Refu 3	No	3		
	Air bricks etc.:				
16	229 x 152mm Clay vermin proof air brick. Ware 8	No	8		
	FACE BRICKWORK (CPAP Work Group No 116)				
	'Corobrik® Imperial Redwood Satin FBS or equal approved 106mm wide face bricks pointed with recessed horizontal and vertical joints:				
17	Extra over brickwork for face brickwork. Ware 355	m²	355		
18	Extra over brickwork for face brickwork in foundations. Ware 81 Refu 4	m²	85		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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Item		Unit	Quantity	Rate	Amount

SECTION NO. 2

BUILDING WORKS

Bill No. 4

WATERPROOFING

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Waterproofing:

Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs.

DAMPPROOFING OF WALLS AND FLOORS (CPAP Work Group No 120)

One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):

1	In walls. Ware 75 Refu 4	m²	79		

One layer of 250 micron embossed polyethylene waterproof sheeting sealed at laps with pressure sensitive tape:

2	Under surface beds. Ware 692 Refu 10	m²	702		

WATERPROOFING SEALANTS TO NEW WALLS, FLOORS, ROOFS, ETC (CPAP Work Group No 120)

Two coats 'Brixeal' bitumen emulsion waterproofing coating:

3	On bagged brick walls. Ware 383	m²	383		

TOTAL CARRIED TO BILL SUMMARY		**R**	

Section No. 2
Bill No. 4
Waterproofing

Item		Unit	Quantity	Rate	Amount
	JOINT SEALANTS ETC (CPAP Work Group No 120)				
	'Sikaflex Pro 3 WF' or equal approved Polysulphide sealing compound including backing cord, bond breaker, primer, etc:				
4	6 x 10mm In saw cut joints in floors	m	322		
	Ware 322				
5	10 x 10mm In vertical expansion joints including raking out expansion joint filler as necessary	m	182		
	Ware 182				
6	12 x 10mm In expansion joints in floors including raking out expansion joint filler as necessary.	m	201		
	Ware 201				
	Clear silicone sealant applied in accordance with the manufacturers instructions:				
7	In joints between ceramic sanitary ware and ceramic tiles.	m	5		
	Ware 5				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Amount

Bill No. 4

WATERPROOFING

BILL SUMMARY

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Item		Unit	Quantity	Rate	Amount

SECTION NO. 2

BUILDING WORKS

Bill No. 5

ROOF COVERINGS

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Supplementary Preambles:

Prior to flashings being fixed, all troughs at the apex shall be stop-ended to the full depth of the sheet in order to prevent any penetration of wind-driven water. The trough shall be lipped at the eaves end to form a drip. Flashing flanges shall be notched to the sheet profile where necessary. All these operations must be performed with special tools available from 'Global Roofing Solutions'. Care shall be taken to ensure that no sheeting or flashing will be cut with abrasive disc on roof surface in order to prevent steel spatter from penetrating colour coated areas Flashing finish must match and be the same as the roof sheeting it follows.

Proprietary items or materials:

Proprietary items or materials where specified are to be of the brand specified - or other equal approved - by the Principal Agent.

Note:

Raking cutting to roof sheets and cladding is not a measurable item in the Standard System of Measuring Building Work 1999 sixth Edition (Revised). The Contractor's attention is drawn to the fact there is considerable raking cutting to the side cladding and to a lesser extent to the roof sheeting. The Contractor is to check the drawings and include for raking cutting and waste in his rates. No claims will be considered for raking cutting.

TOTAL CARRIED TO BILL SUMMARY **R**

Section No. 2

Bill No. 5

Roof Coverings

Item		Unit	Quantity	Rate	Amount
	RIBBED METAL SHEETING AND ACCESSORIES (CPAP Work Group No 124)				
	'Safintra Tufdek IBR' or equal approved profiled 0,53mm thick AZ150 spelter galvanised steel sheeting with Thunderstorm 'Colorplus' finish on one side and cool grey backing coat on other and accessories fixed to timber purlins or rails at 1500mm centres in strict accordance with the manufacturers instructions:				
1	Roof covering with pitch not exceeding 25 degrees, in transportable lengths not exceeding 20m.	m²	16		
	Refu 16				
	'Safintra Tufdek IBR' or equal approved profiled 0,53mm thick AZ150 spelter galvanised steel sheeting with Thunderstorm 'Colorplus' finish on one side and cool grey backing coat on other and accessories fixed to steel purlins or rails at 1500mm centres in strict accordance with the manufacturers instructions:				
2	Roof covering with pitch not exceeding 25 degrees, in transportable lengths not exceeding 20m.	m²	747		
	Ware 747				
3	Side cladding.	m²	251		
	Ware 251				
4	Extra over side cladding for 0,8mm opal translucent polycarbonate sheet panels.	m²	80		
	Ware 80				
	'Safintra Tufdek IBR' or equal approved 0.8mm AZ150 spelter galvanised steel sheeting with Thunderstorm 'Colorplus' finish accessories fixed in strict accordance with the manufacturers instructions:				
5	Ridge flashing 462mm girth, three times bent along girth.	m	48		
	Ware 48				
6	Barge flashing 462mm girth, three times bent along girth.	m	40		
	Ware 33 Refu 7				
7	Apex flashing 462mm girth, 75 degree, three times bent along girth.	m	5		
	Refu 5				
8	External corner flashing 462mm girth and three times bent along girth	m	7		
	Ware 7				
9	Counter flashing 154mm girth and three times bent along girth	m	6		
	Ware 6				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 5
Roof Coverings

Item		Unit	Quantity	Rate	Amount
10	Headwall flashing 308mm girth and three times bent along girth Ware 6	m	6		
11	Drip flashing 154mm girth and three times bent along girth Ware 124	m	124		
12	Broad flute serrated closers to suit 'Tufdek IBR' or equal approved profile. Ware 102 Refu 5	m	107		
13	Narrow flute serrated closers to suit 'Tufdek IBR' or equal approved profile. Ware 102 Refu 5	m	107		
14	Broad flute poly closures to suit 'Tufdek IBR' or equal approved profile. Ware 96	m	96		
15	Narrow flute poly closures to suit 'Tufdek IBR' or equal approved profile. Ware 96	m	96		
	ROOF VENTILATORS (CPAP Work Group No 124)				
	'Turbovent Whirlybird' or equal approved black chromadek coated steel turbine ventilator fixed through 'Tufdek IBR' roof sheeting to steel purlins including watertight joints, necessary sealing strips, flashings, fixing accessories, etc.:				
16	Ridge mounted ventilator size 350mm diameter. Ware 4	No	4		
	ROOF AND WALL LINING AND INSULATION (CPAP Work Group No 122)				
	135mm Thick 'Isover Factorylite' or equal approved aluminium foil faced glasswool blanket:				
17	Insulation blanket laid taut over purlins (at approximately 1200mm centres) and fixed concurrent with roof covering with stapled longitudinal flap joints, including galvanised steel straining wires at not exceeding 300mm centres and fixing at top and bottom edges to purlins with and including hoop iron straps. Ware 728 Refu 9	m²	737		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 5
Roof Coverings

Amount

Bill No. 5

ROOF COVERINGS

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Item		Unit	Quantity	Rate	Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 6
CARPENTRY AND JOINERY

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Particle board:

Particle board shall comply with the following specifications: a) SABS 1300 Particle board: exterior and flooring type b) SABS 1301 Particle board: interior type.

Joinery:

Descriptions of frames shall be deemed to include frames, transoms, mullions, rails, etc.

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes.

Fixing:

Items described as nailed shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete.

Decorative laminate finish:

Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish.

STRUCTURAL TIMBERWORK ETC (CPAP Work Group No 126)

Sawn softwood grade M5:

1	38 x 38mm batten. Ware 122	m	122		
2	38 x 114mm Wall plates Refu 9	m	9		

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 6
Carpentry And Joinery

Item		Unit	Quantity	Rate	Amount
	Wrought softwood grade M5:				
3	50 x 76mm Purlins.	m	27		
	Refu 27				
4	38 x 114mm Rafters in lengths exceeding 2,4m and not exceeding 6,6m.	m	25		
	Refu 25				
	Sundries				
5	Two coats creosote on sawn timbers	m²	36		
	Ware 20 Refu 16				
6	Shaped end to 38 x 114mm wrot timber.	No	14		
	Refu 14				
	EAVES, VERGES, ETC (CPAP Work Group No 126)				
	Medium density plain fibre cement fascia's and barge boards:				
7	12 x 225mm Fascia boards, including PVC H-profile jointing strips etc.:	m	5		
	Refu 5				
	FRAMED DOORS ETC (CPAP Work Group No 126)				
	Wrought meranti doors:				
8	44mm Framed batten door 813 x 2032mm high of 108 x 44mm top rail and stiles, 220 x 44mm middle ledge and braces and 220 x 44mm bottom ledge filled in with 22mm V-jointed board with both sides flush panelled with 6mm tempered hardboard. (D05)	No	3		
	Ware 3				
	SEMI SOLID CORE FLUSH DOORS (CPAP Work Group No 126)				
	Semi-solid core flush doors with commercial veneer:				
9	40mm Door 813 x 2032mm high. (D01)	No	4		
	Ware 4				
	SOLID CORE FLUSH DOORS (CPAP Work Group No 126)				
	Solid core flush doors with commercial veneer:				
10	40mm Door 813 x 1986mm high. (D04)	No	3		
	Ware 3				
11	40mm Door 813 x 2032mm high. (D02)	No	4		
	Ware 4				
12	40mm Door 912 x 1986mm high. (D03)	No	1		
	Ware 1				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 6
Carpentry And Joinery

Item		Unit	Quantity	Rate	Amount
	FRAMED FRAMES ETC (CPAP Work Group No 126)				
	Wrought meranti:				
13	75 x 100mm Rebated frames.	m	63		
	Ware 63				
14	19mm Quadrant beads.	m	122		
	Ware 122				
15	PVC buffers screwed to frames.	No	36		
	Ware 36				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 6
Carpentry And Joinery

Amount

Bill No. 6

CARPENTRY AND JOINERY

BILL SUMMARY

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TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 7
IRONMONGERY

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Finishes to ironmongery:

Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered : CH Chromium plated : SC Satin chromium plated : SE Silver enamelled : GE Grey enamelled : AS Anodised silver : AB Anodised bronze : AG Anodised gold : ABL Anodised black : PB Polished brass : PL Polished and lacquered : PT Epoxy coated.

HINGES, FLOOR SPRING HINGES, BOLTS, PANIC BOLTS, ETC (CPAP Work Group No 132)

Dormakaba or equal approved:

1	'Dormakaba DBB-SS009' or equal approved 102 x 75 x 3mm stainless steel hinge. Ware 28	No	28		
2	'Dormakaba PHA2 S SD' or equal approved two point locking panic bar - single door - door leaf 1000mm wide x 2270mm high. (2201, 2104, PHX02, PHX04) Ware 3	Sets	3		

CATCHES, CABIN HOOKS, ETC (CPAP Work Group No 132)

Halstead:

3	'Halstead 166' or equal approved 200mm Stain Chrome on brass cabin hook and eye including 100 x 100 x 75mm chamfered hardwood block twice oiled and plugged. Refu 2	No	2		

TOTAL CARRIED TO BILL SUMMARY **R**

Section No. 2
Bill No. 7
Ironmongery

Item		Unit	Quantity	Rate	Amount
	LOCKS (CPAP Work Group No 132)				
	Dormakaba or equal approved:				
4	'Dormakaba D035S SS' or equal approved stainless steel bathroom sash lock, case dimensions 102mm x78mm forend dimensions 155 x 22mm, backset 57mm, centres 57mm. Ware 3	No	3		
5	'Dormakaba D036S SS' or equal approved stainless steel cylinder sash lock, case dimensions 116.5 x 78mm, forend dimensions 168 x 22mm, backset 57mm, centres 61mm. Ware 4	No	4		
6	'Dormakaba DMWC-SS-008' or equal approved stainless steel bathroom deadlock, case dimensions 38 x 78mm, forend dimensions 78 x 22,5mm, backset 55mm. Ware 1	No	1		
7	'Dormakaba DWC-006' or equal approved stainless steel disabled WC indicator (red & white) and turnkey for the physically impaired. Ware 1	Sets	1		
8	'Dormakaba DDC056501KD' or equal approved 65mm satin nickel 5 pin Euro-profile double cylinder - keyed to differ. Ware 4 Refu 1	No	5		
9	'ISEO 1450.00.55' or equal approved single long throw profile cylinder gate lock, 55mm backset including fitting in lock box of steel gate. Refu 1	No	1		
	HANDLES (CPAP Work Group No 132)				
	Dormakaba or equal approved:				
10	'Dormakaba TH124 WC SS' or equal approved stainless steel lever handle on rose with bathroom/WC furniture. Ware 3	Sets	3		
11	'Dormakaba TH124 Cyl SS' or equal approved stainless steel lever handle on rose with cylinder escutcheons. Ware 4	Sets	4		
12	'Dormakaba DPH301B' or equal approved 325 x 25mm stainless steel straight tubular pull handle flange fixing. Ware 2	No	2		
13	'Dormakaba DPH210BTB' or equal approved 300 x 30mm stainless steel straight tubular pull BTB (BTB fixing sets included. Ware 2	Pairs	2		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 7
Ironmongery

Item		Unit	Quantity	Rate	Amount
	DOOR CLOSERS (CPAP Work Group No 132)				
	Dormakaba or equal approved:				
14	'Dormakaba TS73V PA DC-PAB-SL' or equal approved EN 2-4 parallel arm delayed action door closer, push side fixing (parallel arm bracket included), EN2 750-850, EN3 850-950, EN4 950-1100.	No	1		
	Ware 1				
15	'Dormakaba TS91B SL' or equal approved non hold open cam action slide channel door closer, max door width 950mm wide, closing force EN3, hydraulic speed control, pull side door leaf fixing (standard), push side transom fixing, door closer compliant with EN 1154, door closer is CERTI FIRE approved (certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001.	Sets	2		
	Ware 2				
	PUSH PLATES AND KICK PLATES (CPAP Work Group No 132)				
	Dormakaba or equal approved:				
16	'Dormakaba DKP-430-GF 150' or equal approved epoxy glue fixed 813 x 150 x 1,2mm thick Grade 430 brushed stainless steel kick plate. (no screw holes)	No	2		
	Ware 2				
	LETTERS, NAMEPLATES, ETC (CPAP Work Group No 132)				
	Dormakaba or equal approved:				
17	'Dormakaba DSS-131F' or equal approved 150 x 150mm FEMALE sign.	No	1		
	Ware 1				
18	'Dormakaba DSS-130M' or equal approved 150 x 150mm MALE sign.	No	1		
	Ware 1				
19	'Dormakaba DSS-133P' or equal approved 150 x 150mm DISABLED PERSON sign.	No	1		
	Ware 1				
	BATHROOM FITTINGS (CPAP Work Group No 132)				
	Franke or equal approved:				
20	'Franke CNTXBR' or equal approved 750 x 260mm stainless steel disabled grab rail. (code 359912)	No	1		
	Ware 1				
21	'Franke CNTXBR' or equal approved 750 x 260mm stainless steel disabled grab rail. (code 359912)	No	1		
	Ware 1				
	TOTAL CARRIED TO BILL SUMMARY			**R**	
	Section No. 2				
	Bill No. 7				
	Ironmongery				

Item		Unit	Quantity	Rate	Amount
	Bathroom fittings:				
22	600mm Long stainless steel towel rail bolted. (code 359933)	No	1		
	Ware 1				
23	'3 Pin' or equal approved stainless steel, satin finish basin manual 1250ml vertical soap dispenser for wall mounting plugged. (code SDS01101)	No	3		
	Ware 3				
24	'3 Pin' or equal approved stainless steel, satin finish 36l waste bin for wall mounting plugged. (code WBS0200)	No	3		
	Ware 3				
25	'3 Pin' or equal approved stainless steel satin finish executive folded paper towel dispenser for wall mounting plugged. (code PTD0330)	No	3		
	Ware 3				
26	'Volkem TR 2' or equal approved white, thief proof toilet double toilet roll holder with cylinder lock and standard key, plugged.	No	4		
	Ware 4				
	SUNDRIES (CPAP Work Group No 132)				
	Dormakaba or equal approved:				
27	'Dormakaba DHC-SS-031B' or equal approved stainless steel hat and coat hook with rubber buffer.	No	3		
	Ware 3				
28	'Dormakaba DDH-SS-020' or equal approved stainless steel wall buffer.	No	6		
	Ware 6				
29	10mm Diameter steel dowel 100mm long in and including mortise in timber and brickwork or concrete.	No	24		
	Ware 24				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 7
Ironmongery

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IRONMONGERY		
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Item		Unit	Quantity	Rate	Amount

SECTION NO. 2

BUILDING WORKS

Bill No. 8

STRUCTURAL STEELWORK

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

STEEL COLUMNS AND BEAMS (CPAP Work Group No 134)

Welded columns in single lengths with flat base, cap, bearer and connection plates, bolted to concrete:

1	180 x 70mm x 21kg/m Parallel flange columns. Ware 0.25	Tonnes	0.25		

Welded beams in single lengths with flat bearer and connection plates, bolted to steel

2	203 x 133mm x 25kg/m I-section rafters. Ware 0.25	Tonnes	0.25		

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 8
Structural Steelwork

Item		Unit	Quantity	Rate	Amount
	STEEL PORTAL FRAMES (CPAP Work Group No 134)				
	Welded portal frames with flat bearer, gusset and connection plates and angle cleats, bolted to concrete:				
3	Double pitched portal frames 13,67m wide x 6,39m high extreme of 305 x 165mm x 41kg/m I-section rafters and columns (In No 9)	Tonnes	9.13		
	Ware 9.13				
	PRE-GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC (CPAP Work Group No 134)				
	Purlins and girts, bolted to steel:				
4	Lipped channel section purlins.	Tonnes	3.58		
	Ware 3.58				
5	Lipped channel section girts.	Tonnes	1.39		
	Ware 1.39				
	STEEL PURLINS, GIRTS, BRACING, ETC (CPAP Work Group No 134)				
	Welded bracing, anti-sag rails, etc. with flat connection plates, bolted to steel				
6	50,8 x 3,0mm Circular hollow section stay.	Tonnes	0.09		
	Ware 0.09				
7	76,2 x 3,0mm Circular hollow section bracing.	Tonnes	0.47		
	Ware 0.47				
8	Angle section false rafter.	Tonnes	0.16		
	Ware 0.16				
9	Angle section anti-sag rails.	Tonnes	0.73		
	Ware 0.73				
10	Angle section cladding rails.	Tonnes	0.05		
	Ware 0.05				
	BOLTS, FASTENERS, ETC (CPAP Work Group No 134)				
	Bolts and fasteners:				
11	High tensile bolts (class 8.8).	Tonnes	0.15		
	Ware 0.15				
12	M16mm Diameter x 600mm long holding down bolt with 60 x 60 x 6mm plate welded 10mm from one end of the bolt embedded in top of concrete including washers and two nuts.	No	80		
	Ware 80				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Bill No. 8
STRUCTURAL STEELWORK
BILL SUMMARY

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TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 9
METALWORK

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Descriptions:

Descriptions of bolts shall be deemed to include nuts and washers.

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.

Metalwork described as holed for bolt(s) shall be deemed to exclude the bolts unless otherwise described.

GALVANISED STEEL GATES, SCREENS, ETC (CPAP Work Group No 136)

Welded screens and gates to brickwork or concrete:

1	Double gate 1800 x 2023mm high in equal leaves, each leaf of 35 x 35 x 4mm square hollow section outer frame and 35 x 35 x 4mm square hollow section intermediate rail, with 2032mm long pilasters welded on at 158mm centres, fitted with three suitable hinges (6 in total) welded to frame and including bolting to brickwork or concrete with expansion bolts, including lock box for 'ISEO 1450.00.55' single through profile cylinder gate lock, (lock elsewhere), two sliding bolts with keeps in concrete, installed complete as G01 on Drawing No MDA 483D - G01 attached to these Bills of Quantities. Refu 1	No	1		

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 9
Metalwork

Item		Unit	Quantity	Rate	Amount
	ALUMINIUM WINDOWS (CPAP Work Group No 149)				
	Supplementary Preambles:				
	Aluminium windows, etc., are to be constructed and installed in accordance with the guidelines of The Association of Architectural Aluminium Manufactures of South Africa (AAAMSA). Unless otherwise stated ironmongery is to be the manufacturer's standard corrosion resistant ironmongery for the particular product range. Glazing is to be carried out in strict accordance with the SABS 0137/2000 code of Practice: "The Installation of Glazing in Buildings" and where required, safety glazing materials must conform to SABS 1263. All opening sashes must be weather and draught proofed using wool pile, vinyl, etc. seals and the perimeter frames sealed to the structure using manufacturer approved sealants. All aluminium is to be protected after manufacture by removable PVC tape or other approved application. The protection is to be removed only when authorised by the Architect. Any component damaged in any way prior to the completion of the building is to be replaced with new. 'Touching up' of decorative finishes will not be permitted.				
	Black powder coated aluminium window with stainless steel concealed friction stays, clip on glazing beads, sanoprene seals, glazed 6.38mm laminated HPR clear glass in strict accordance with the manufacturer's instructions plugged to brickwork, concrete or fixed to steel:				
2	Purpose made window 1000 x 900mm high to be installed complete as per W02 on Drawing No MDA 483D-W02 attached to these Bills of Quantities. Ware 1	No	1		
3	Purpose made window 1200 x 900mm high to be installed complete as per W01 on Drawing No MDA 493D-W01 attached to these Bills of Quantities. Ware 2	No	2		
4	Purpose made window 1400 x 900mm high to be installed complete as per W05 on Drawing No MDA 493D-W05 attached to these Bills of Quantities. Ware 1	No	1		
5	Purpose made window 2500 x 1325mm high to be installed complete as per W06 on Drawing No MDA 493D-W06 attached to these Bills of Quantities. Ware 1	No	1		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	Black powder coated aluminium window with stainless steel concealed friction stays, clip on glazing beads, sanoprene seals, glazed 6.38mm laminated HPR opaque glass in strict accordance with the manufacturer's instructions plugged to brickwork, concrete or fixed to steel:				
6	Purpose made window 600 x 600mm high to be installed complete as per W04 on Drawing No MDA 483D-W04 attached to these Bills of Quantities. Ware 5	No	5		
7	Purpose made window 600 x 900mm high to be installed complete as per W03 on Drawing No MDA 483D-W03 attached to these Bills of Quantities. Ware 1	No	1		
	STEEL ROLLER SHUTTERS ETC (CPAP Work Group No 136)				
	'Seranda' or equal approved galvanised heavy duty roller shutters fixed to brickwork or concrete:				
8	Chain operated slatted roller shutter for 2500 x 2125mm high opening, with flexible neoprene weather strip to bottom edge, with two lockable slide bolts and with pressed metal canopy cover. Refu 1	No	1		
9	Chain operated slatted roller shutter for 3600 x 2125mm high opening, with flexible neoprene weather strip to bottom edge, with two lockable slide bolts and with pressed metal canopy cover. Ware 2	No	2		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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METALWORK		
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TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 10
PLASTERING

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

FLOWCRETE OR EQUAL APPROVED SCREEDS (CPAP Work Group No 142)

Scarify concrete surfaces as described, sweep clean and apply 'Flowcrete Flowfresh SR Ultra Dusty Grey' or equal approved comprising of 'Flowfresh' or equal approved primer, 'Flowfresh' or equal approved mortar, 'Flowfresh SR', or equal approved scatter aggregate and 'Flowseal Ultra' or equal approved seal coat, complete in strict accordance with the manufacturers instructions. The work is to be executed by a specialist contractor approved by the manufacturer:

1	4-5mm Thick on power floated floors and landings. Ware 686	m²	686		
2	4-5mm Thick on treads and risers of stairs. Ware 6	m²	6		
3	150mm High F1 coved skirting's finished with 'Flowfresh SR Ultra' coating Ware 181	m	181		

Sundries to 'Flowcrete' or equal approved:

4	6 x 6mm Saw cut joint in 'Flowsheild' or equal approved epoxy floor. Ware 291	m	291		

'Sikaflex Pro 2 HP' or equal approved polysulphide sealing compound including backing cord, bond breaker, primer, etc:

5	6 x 6mm In saw cut joints in floors. Ware 291	m	291		

TOTAL CARRIED TO BILL SUMMARY **R**

Section No. 2
Bill No. 10
Plastering

Item		Unit	Quantity	Rate	Amount
	INTERNAL PLASTER (CPAP Work Group No 142)				
	Cement plaster on brickwork:				
6	On walls.	m²	630		
	Ware 611 Refu 19				
7	On narrow widths.	m²	41		
	Ware 41				
	Cement plaster on concrete:				
8	On walls.	m²	10		
	Ware 10				
9	On narrow widths.	m²	4		
	Ware 4				
10	On projecting and isolated beams.	m²	2		
	Ware 1 Refu 1				
	EXTERNAL PLASTER (CPAP Work Group No 142)				
	Cement plaster on brickwork:				
11	On walls.	m²	23		
	Refu 23				
12	On narrow widths.	m²	6		
	Refu 6				
13	On sides and front edge of window and door surrounds 285mm girth.	m	15		
	Ware 15				
14	On sides and front edge of window and door surrounds 365mm girth.	m	23		
	Ware 23				
15	On sloping top, front edge and projecting soffit of sills 350mm girth.	m	8		
	Ware 8				
	Cement plaster on concrete:				
16	On walls.	m²	9		
	Ware 9				
17	On narrow widths.	m²	3		
	Ware 2 Refu 1				
18	On sides and front edge of window and door surrounds 480mm girth.	m	9		
	Ware 9				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 10
Plastering

Item		Unit	Quantity	Rate	Amount
	SKIM COAT PLASTER (CPAP Work Group No 142)				
	Skim coat plaster of 100 parts of Planitop 110 ME with 31-32 parts of water (approximately 6,2-6,4 litres of water per 20 kg bag to a minimum thickness of 2mm in strict accordance with manufacturer's instructions on concrete with a smooth finish (degree of accuracy II) including rubbing down concrete to leave smooth:				
19	On ceilings. Ware 69	m²	69		
20	On projecting and isolated beams. Ware 8	m²	8		
21	On raking soffits of stairs. Ware 5	m²	5		
22	Sloping and stepped outer edges of stairs 310mm high extreme Ware 3	m²	3		
	CORNER PROTECTORS, DIVIDING STRIPS, ETC (CPAP Work Group No 136)				
	Corner protectors, dividing strips, etc:				
23	3 x 57mm Flat section brass water bar. Ware 9 Refu 2	m	11		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 10
Plastering

Amount

Bill No. 10

PLASTERING

BILL SUMMARY

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TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 11
TILING

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Descriptions:

Unless described as fixed with adhesive to plaster (plaster elsewhere), descriptions of tiling on brick or concrete walls, columns, etc., shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc. shall be deemed to include 1:3 plaster bedding.

NOSINGS, JOINT COVERS, PROTECTORS, ETC (CPAP Work Group No 132)

'M Trim' or equal approved brass corner protectors, stair nosing's, edge trims, etc:

1	12mm Straight edge trim (code BSE120.N) fixed to floors with adhesive. Ware 4	m	4		

'M Trim' or equal approved matt black anodised aluminium corner protectors, stair nosing's, edge trims, etc:

2	12mm Straight edge trim (code ASE120.BL) fixed to walls with adhesive. Ware 118	m	118		

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 11
Tiling

Item		Unit	Quantity	Rate	Amount
	PORCELAIN WALL TILING (CPAP Work Group No 144)				
	600 x 600mm 'Italtile Code SKU MIM1023 Infinity' or equal approved Ash slip resistant glazed porcelain tiles fixed with Tal Goldstar or equal approved adhesive to plastered walls and flush pointed with tinted anti fungal grout (plaster elsewhere):				
3	On walls.	m²	73		
	Ware 73				
4	On narrow widths.	m²	4		
	Ware 4				
5	Fair exposed cutting and fitting around pipe etc not exceeding 50mm internal diameter.	No	16		
	Ware 16				
6	Fair exposed cutting and fitting around pipe etc exceeding 100mm and not exceeding 150mm internal diameter.	No	4		
	Ware 4				
	SUBWAY TILING (CPAP Work Group No 144)				
	300 x 300mm 'Code SKU T0026310' or equal approved Chrystal Grey subway tiles fixed with Tal Goldstar or equal approved adhesive to plastered walls and flush pointed with tinted anti fungal grout (plaster elsewhere):				
7	On walls in isolated panels, splashbacks, etc.	m²	2		
	Ware 2				
	PORCELAIN FLOOR TILING (CPAP Work Group No 144)				
	600 x 600 x 12mm 'Italtile Infinity' Ash slip resistant (code SKU MIM1023) or equal approved full bodied porcelain tiles, fixed with 'Tal Goldstar' adhesive to power floated concrete floors, key coat and flush pointed with Ceresit Tylon CE 33 grout mixed with Ceresit Tylon CC 183 additive:				
8	On floors and landings	m²	23		
	Ware 23				
9	Skirting 150mm high (of cut tiles).	m	10		
	Ware 10				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 11
Tiling

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TILING		
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TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2

BUILDING WORKS

Bill No. 12

PLUMBING AND DRAINAGE

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

'Polycop' polypropylene pipes:

Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with 'Fast-fuse' heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated.

Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions.

All pipe diameters are nominal external.

'Polylink' polypropylene pipes:

Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron 'Supraclamp' running joints.

Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured.

Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double X joint couplers.

Branch tees shall include flanged and bolted joints to 'Polycop' branch pipes in addition and for brass compression male iron to copper straight couplers.

Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reduces shall be of sufficient overall length to accommodate same.

All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions.

TOTAL CARRIED TO BILL SUMMARY **R**

Section No. 2

Bill No. 12

Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount

All pipe diameters are nominal external.

Concrete pipes:

Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings.

Vitrified clay pipes etc:

Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid.

uPVC pipes and fittings.

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings.

Soil, waste and vent pipes and fittings shall be solvent weld jointed.

uPVC pressure pipes and fittings:

Pipes for water supply shall be of the class stated.

Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings.

Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints.

Copper pipes:

Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be 'Cobra Watertech' type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground.

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include for fixing to walls etc. casting in, building in or suspending not exceeding 1m below suspension level

Lead pipes and traps:

All soldered joints shall be wiped and brass unions shall be used for jointing lead to steel.

TOTAL CARRIED TO BILL SUMMARY **R**

Section No. 2

Bill No. 12

Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount

Reducing fittings:

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

Wire gratings:

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

Septic tanks:

Descriptions of septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions.

Exposed concrete surfaces:

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

Excavations:

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

'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.

Laying, backfilling, bedding, etc of pipes:

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

Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SAB.

Flush pans:

Flush pans shall have straight or side outlets and 'P' or 'S' traps as necessary.

Descriptions of WC pans and bidets are deemed to include setting in silicone sealant and screwing to timber or plugging and screwing to concrete floor. Cisterns are to be plugged and brass screwed to walls.

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2

Bill No. 12

Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	Stainless steel basins, sinks, wash troughs, urinals, etc:				
	Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.				
	Waste unions:				
	Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.				
	Steel sectional water tanks:				
	Tanks shall comply with SABS CKS 114.				
	'Densyl' petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd:				
	Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied with minimum 15mm lap per spiral unless otherwise described.				
	Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including all mastic, tape, 'Layflat' sheeting, securing of same, etc.				
	Prices for wrapping of pipes shall include for all work as described to couplings in the length.				
	STORMWATER CHANNELS (CPAP Work Group No 146)				
	In-Situ concrete (25Mpa) open stormwater channels having half round water way formed in top, finished smooth on all exposed surfaces (3:1) untinted cement plaster trowelled smooth and with angles rounded, cast in maximum 2,0m lengths in alternate panels, including all formwork, moulds, shallow excavation, shaping, and ramming, etc., laying to falls, bedding and pointing (3:1) cement mortar: (Layer works elsewhere under roads and Paving)				
1	Channel size 430mm wide x 250mm thick with 300mm wide half round water way channel.	m	69		
	Ext 69				
2	Extra for angles, intersections, ends, dressing into sides of catchpits, etc.	No	2		
	Ext 2				
	MOVEMENT JOINTS ETC (CPAP Work Group No 111)				
	Movement joints:				
3	12mm Bitumen impregnated softboard, size 430mm wide x 225mm high with a 300mm wide half round water way cut in the top to match the shape channel, expansion joint between concrete stormwater channels.	No	10		
	Ext 10				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	WATERPROOFING				
	JOINT SEALANTS ETC. (CPAP Work Group No 120)				
	Polysulphide sealing compound including backing cord, bond breaker, primer, etc:				
4	10 x 12mm In expansion joints in channels including raking out joint filler as necessary. Ext 6	m	6		
	STORMWATER DRAINAGE (CPAP Work Group No 146)				
	Class 100D concrete pipes:				
5	450mm Pipes laid in and including trenches not exceeding 1m deep. Ext 7	m	7		
6	450mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep. Ext 8	m	8		
	Sumps, catchpits, inspection chambers, etc (gratings and covers elsewhere):				
7	Excavate for and build stormwater kerb inlet exceeding 0,50m deep and not exceeding 1,0m deep internally complete including all channels, kerbs, transitions, cover slabs, manhole covers and frames, excavations, formwork, reinforcement, backfilling, compaction, etc., Kerb Inlet Details on Drawing No. 1764-004-GEN-011 Rev T0 General Typical Details 02 attached to these Bills of Quantities. Ext 1	No	1		
	STORMWATER HEADWALLS				
	The following in two headwalls (Refer to Headwall and Wingwall Details on Drawing No. 1764-004-Gen-011 Rev T0 attached to these Bills of Quantities:				
	EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)				
8	Reduce levels under floors, paving etc. Ext 1	m³	1		
9	Trenches not exceeding 2m deep. Ext 5	m³	5		
10	Risk of collapse of sides of excavations not exceeding 1,5m deep Ext 20	m²	20		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 12
Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	CARTING AWAY (CPAP Work Group No 104)				
	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):				
11	Off site to a dumping site to be found by the Contractor.	m³	5		
	Ext 5				
	EARTH FILLING, ETC (CPAP Work Group No 104)				
	Earth filling supplied by the contractor under paving's, etc:				
12	Under floors, paving's, ramps, etc. of G7 base course material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density.	m²	1		
	Ware 1				
	Surface Preparation:				
13	Trim and level off surface of ground (excavated or filled under this Contract) to receive concrete surface beds, including excavating or filling, ripping and scarifying as necessary and compacting the whole area for a depth of 200mm to a density of at least 93% Mod. AASHTO maximum density, part to falls.	m²	2		
	Ext 2				
	RENO MATTRESSES (CPAP Work Group No 104)				
	Reno mattresses:				
14	Reno mattress size 2110 x 1000 x 300mm high consisting of 150-300mm selected loose stones tightly wrapped in 80 x 100 x 2.2mm galvanised mesh, including preparation of ground, etc., including filling voids with cement mortar.	No	4		
	Ext 4				
15	Reno mattress size 2110 x 1000 x 500mm high consisting of 150-300mm selected loose stones tightly wrapped in 80 x 100 x 2.2mm galvanised mesh, including preparation of ground, etc.	No	2		
	Ext 2				
	Type A4 filter fabric blanket with 150mm laps:				
16	Under stone filled gabion mattresses including preparing ground surface under.	m²	11		
	Ext 11				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)				
	15MPa/19mm concrete:				
17	Blinding under footings, bases, apron slabs etc.	m³	1		
	Ext 1				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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Bill No. 12

Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)				
	25MPa/19mm concrete:				
18	Surface beds, bottoms, sides, ends, etc. Ext 1	m³	1		
	REINFORCED CONCRETE (CPAP Work Group No 110)				
	25Mpa/19mm concrete:				
19	Wing walls. Ext 1	m³	1		
	FINISHING TOP SURFACE OF CONCRETE (CPAP Work Group No 110)				
	Finishing top surfaces of concrete smooth with a wood float:				
20	Surface beds, slabs etc, to falls. Ext 2	m²	2		
	Finishing top surfaces of concrete smooth with a steel trowel:				
21	Tops of beams, walls, etc. Ext 1	m²	1		
	ROUGH FORMWORK (DEGREE OF ACCURACY II) (CPAP Work Group No 111)				
	Rough Formwork to Sides:				
22	Formwork to edges, risers, ends, and reveals not exceeding 300mm wide or high. Ext 4	m	4		
	SMOOTH FORMWORK (DEGREE OF ACCURACY I) (CPAP WORK GROUP NO. 111)				
	Smooth formwork to sides:				
23	Wing walls. Ext 3	m²	3		
24	Wing walls above concrete. Ext 3	m²	3		
25	Edges, risers, ends and reveals not exceeding 300mm high or wide. Ext 8	m	8		
	Boxing in smooth formwork to form:				
26	To form hole through 200mm thick wall for 450mm diameter concrete pipe. Ext 2	No	2		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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Bill No. 12

Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	REINFORCEMENT (CPAP WORK GROUP NO. 114)				
	High tensile steel reinforcement to structural concrete work:				
27	Various diameter bars.	Tonnes	0.05		
	Ext 0.05				
	Fabric reinforcement:				
28	Type 289 fabric reinforcement in concrete surface beds, slabs, wingwalls etc.	m²	26		
	Ext 26				
	Sundries: (CPAP WORK GROUP NO. 146)				
29	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m³	6		
	Ext 6				
30	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m³	3		
	Ext 3				
31	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m³	5		
	Ext 5				
32	Extra over backfilling to pipe trenches, chambers, etc for backfilling with G7 material in accordance to SABS 1200 DM for compaction to 95% Mod AASHTO density.	m³	5		
	Ext 5				
33	Testing drainage pipe system.	Item			
	I 1				
	SOIL DRAINAGE (CPAP WORK GROUP NO. 146)				
	uPVC:				
	uPVC class 34 pipes:				
34	50mm Pipes laid in and including trenches not exceeding 1m deep.	m	10		
	Ext 10				
35	110mm Pipes vertically or ramped to cleaning eyes, etc. (no excavation)	m	4		
	Ext 4				
36	110mm Pipes laid in and including trenches not exceeding 1m deep.	m	22		
	Ext 22				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 12
Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
37	110mm Pipes laid in and including trenches exceeding 1,0m and not exceeding 2,0m deep. Ext 20	m	20		
	Extra over uPVC class 34 pipes for fittings:				
38	50mm Bend. Ext 5	No	5		
39	110mm Bend. Ext 9	No	9		
40	110mm Access bend. Ext 5	No	5		
41	50mm Junction. Ext 2	No	2		
42	110mm Junction. Ext 3	No	3		
43	110mm Access junction. Ext 5	No	5		
	PVC gulley's:				
44	110mm Dished gulley not exceeding 1000mm deep including gulley trap, precast concrete surround. Ext 3	No	3		
	Inspection chambers (covers elsewhere):				
45	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 0,5m and not exceeding 1,0m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:2 cement mortar, 1280mm diameter x 270mm thick (20Mpa/19mm) reinforced concrete bottom, including cast iron step irons, concrete benching, uPVC channels and fittings, sealing joints between manhole rings with Bitu-Joint sealer, backfilling and ramming, carting away surplus excavated material, formwork, holes through sides for pipes, etc complete as per Typical Plan For Branch Manhole and Sections on Drawing Number 1764-004-GEN-010 T0 attached to these Bills of Quantities. Ext 1	No	1		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
46	Precast concrete inspection chamber size 1000mm internal diameter x exceeding 1,0m and not exceeding 1,5m deep internally to invert level, including 150mm thick (25MPa/19mm) concrete top cover slab with Y12 bars at 150mm centres finished smooth with a steel float and rebated for and fitted with cast iron double seal cover and frame (cover and frame elsewhere) in accordance with SABS 558, bedded in 1:2 cement mortar, 1280mm diameter x 270mm thick (20Mpa/19mm) reinforced concrete bottom, including cast iron step irons, concrete benching, uPVC channels and fittings, sealing joints between manhole rings with Bitu-Joint sealer, backfilling and ramming, carting away surplus excavated material, formwork, holes through sides for pipes, etc complete as per Typical Plan For Branch Manhole and Sections on Drawing Number 1764-004-GEN-010 T0 attached to these Bills of Quantities.	No	1		
	Ext 1				
	Gratings, covers, etc:				
47	550mm Diameter x 176kg type 2A heavy duty cast iron manhole cover and frame.	No	2		
	Ext 2				
	Sundries:				
48	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock.	m³	11		
	Ext 11				
49	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock.	m³	6		
	Ext 6				
50	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m³	9		
	Ext 9				
51	Extra over backfilling to drain trenches, chambers, etc for earth backfilling with G5 material supplied by the Contractor.	m³	9		
	Ext 9				
52	110mm PVC cleaning eye.	No	1		
	Ext 1				
53	Cutting into side of existing inspection chamber for and connecting 160mm pipe including inserting 160mm channel junction and making good concrete benching.	No	1		
	Ext 1				
54	Testing drainage pipe system.	Item			
	I 1				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2

Bill No. 12

Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	RAINWATER DISPOSAL (CPAP WORK GROUP NO. 148)				
	'Watertite' or equal approved gutters 0.9mm Aluminium coated internally and externally with ColourTech G4 'Industrial Ogee' roll formed seamless gutter, with equal back and front height, brackets at 500mm centres, including cut and mitred angles covered with a mitre strip externally, stop ends crimped and all sealed on the inside with Dow Corning 813 silicone sealer installed in strict accordance with the manufacturers instructions:				
55	150 x 125mm High seamless ogee eaves gutters. Ware 102 Refu 5	m	107		
56	Extra over 150 x 125mm High seamless ogee eaves gutter for stopped end. Ware 4 Refu 2	No	6		
57	Extra over 150 x 125mm High seamless ogee eaves gutter for outlet for 75 x 75mm downpipe. Ware 10 Refu 1	No	11		
58	75 x 75mm Rainwater pipes. Ware 53 Refu 3	m	56		
59	Extra over 75 x 75mm rainwater pipe for bend. Ware 6 Refu 2	No	8		
60	Extra over 75 x 75mm rainwater pipe for shoe. Ware 12 Refu 1	No	13		
	SANITARY FITTINGS (CPAP WORK GROUP NO. 148)				
	'Vaal Sanitaryware' or equal approved vitreous china wash hand basins and pedestals:				
61	'Savannah' or equal approved white round counter top wash hand basin size 420 x 420mm with integrated overflow (code CSABAJN1-2COO400). Ware 2	No	2		
62	510 x 405mm 'Hibiscus' or equal approved white vitreous china lavatory basin (product code 702303) with one taphole including integrated overflow and chainstay hole, and bolted to wall with two 10mm bolts (product code 8448Z0). Ware 1	No	1		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 12
Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	'Lecico Sanitaryware' or equal approved vitreous china WC suites:				
63	'Lecico Atlas' or equal approved white vitreous china back to wall back entry pan (product code ATLPANBTWOOOOUE) with 'Macneil Triumph' or equal approved solid wood particle moisture proof white lacquered double flap toilet seat and flush valve (elsewhere measured), screwed to concrete floors all in strict accordance with the manufacturers instructions.	No	3		
	Ware 3				
	'Vaal Sanitaryware' or equal approved vitreous china WC suites:				
64	'Orchid' or equal approved white vitreous china wall hung washdown suite (product code 439004) comprising 90° outlet open rim pan with back inlet (product code 439004) with 'Macneil Triumph' solid wood particle moisture proof white lacquered double flap toilet seat and flush valve with extension lever (elsewhere measured), fitted on and including floor bracket (product code 8082Z0) bolted to wall and recessed concrete floor.	No	1		
	Ware 1				
	'Vaal Sanitaryware' or equal approved vitreous china urinals:				
65	'Lavatera' or equal approved white vitreous china wall mounted back inlet urinal (product code 705427) including 38mm chromium plated domical grating (product code 8787) and chromium plated top inlet spreader (product code 7041Z0) and concealed flush valve (elsewhere measured) including flushpipe and fittings (product code 1722Z1)], fitted on and including two hanger brackets (product code 8127Z0) plugged and screwed to wall.	No	2		
	Ware 2				
	'Franke' or equal approved grade 304 (18/10) stainless steel domestic inset sinks:				
66	'Franke Nouveau NVN621' or equal approved double bowl inset sink (Code: 101.0312.026) size 1160 x 460mm with two 340 x 370 x 152mm deep bowls with 90mm basket strainer waste fittings.	No	1		
	Ware 1				
	WASTE UNIONS ETC (CPAP WORK GROUP NO. 148)				
	'Cobra Watertech' or equal approved waste unions etc:				
67	32mm Chrome plated slotted basin waste union (no chain or stay) (code 303).	No	3		
	Ware 3				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 12
Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
68	32mm Chrome plated anti-theft plug with spindle (code 309-32). Ware 1	No	1		
69	32mm Chrome plated slotted click waste (code 302-32). Ware 2	No	2		
	TRAPS ETC (CPAP WORK GROUP NO. 148)				
	uPVC:				
70	32 x 40mm Universal bottle trap (white). Ware 2	No	2		
71	38 x 50mm P-trap. (code ETP 10) Ware 1	No	1		
	Rubber traps:				
72	40mm Flexitrap. Ware 1	No	1		
	'Cobra Watertech' or equal approved traps etc:				
73	32mm Chrome plated deep seal bottle trap with outlet for 40mm PVC (code 365/40). Ware 1	No	1		
74	40mm Chrome plated deep seal bottle trap with outlet for 40mm PVC (code 365/40). Ware 2	No	2		
	TAPS, VALVES, ETC (CPAP WORK GROUP NO. 148)				
	'Cobra Watertech' or equal approved medical elbow action raised nose pillar taps:				
75	15mm Chrome plated Medical elbow action pillartap with raised nose (code 503-21B and R). Ware 1	No	1		
	'Cobra Stella' or equal approved mixers:				
76	15mm Chrome plated sink mixer. (product code 3396ST) Ware 1	No	1		
	'Cobra Watertech' or equal approved undertile stop taps:				
77	15mm with stainless steel wall flange non hold, self closing, metering stop tap. (code KM2-301N). Ware 4	No	4		
	'Cobra Watertech' or equal approved wall mounted basin spouts:				
78	Chrome plated wall spout 230mm long. (code 2208CH/N) Ware 2	No	2		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 12
Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	'Geberit' or equal approved toilet and urinal flushvalves:				
79	Concealed urinal flush control installation set (code 116.003.00.1) complete with pneumatic flush actuation, brushed stainless steel Sigma 10 flush plate (code 116.015.SN.1).	No	2		
	Ware 2				
	'Cobra Watertech' or equal approved toilet and urinal flushvalves:				
80	32mm Chrome plated junior toilet flushmaster (non hold open) with extension and with integral shut-off valve and chrome plated top entry flush pipe with pan connector (code FJM2-210/N) with extended lever (code C-KM 9.10) and C-KM 9.12/9).	No	1		
	Ware 1				
81	20mm Chrome plated junior toilet flushmaster (non hold open) with integral shut-off valve, wallplate and chromium plated top entry flush pipe with pan connector and rubber buffer (code FJ2.210).	No	3		
	Ware 3				
	'Cobra Watertech' or equal approved light pattern angle regulating valves:				
82	15 x 15mm Chrome plated angle regulating valve (code 832-10).	No	3		
	Ware 3				
	'Cobra Watertech' or equal approved gate valves, check valves, strainers etc:				
83	22mm F x F 'Cobra' cast brass Fullway Gate valve Class 8 with non-rising spindle (code 1002-125-20).	No	2		
	Ext 2				
	SANITARY PLUMBING (CPAP WORK GROUP NO. 148)				
	uPVC pipes:				
84	40mm Pipes.	m	15		
	Ware 15				
85	50mm Pipes.	m	8		
	Ware 8				
86	40mm Pipes chased in walls.	m	15		
	Ware 15				
87	50mm Pipes chased in walls.	m	8		
	Ware 8				
88	110mm Pipes.	m	11		
	Ware 11				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 12
Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
	Extra over uPVC pipes for fittings:				
89	50mm Reducer. Ware 2	No	2		
90	40mm Bend. Ware 6	No	6		
91	50mm Bend. Ware 3	No	3		
92	110mm Bend. Ware 4	No	4		
93	50mm Junction. Ware 1	No	1		
94	110mm Pan connector. Ware 4	No	4		
95	40mm Access bend. Ware 8	No	8		
96	50mm Access bend. Ware 3	No	3		
97	110mm Access bend. Ware 4	No	4		
98	40mm Access junction. Ware 4	No	4		
99	50mm Access junction. Ware 2	No	2		
100	50mm Reducing access junction. Ware 2	No	2		
101	110mm 'GI Two-way' vent valve. Ware 2	No	2		
	Sundries:				
102	Testing waste pipe system. I 1	Item			
	WATER SUPPLIES (CPAP WORK GROUP NO. 148)				
	High density black polyethylene (HDPE) PN6.3 PE100 SDR26 pipes with and including compression fittings:				
103	32mm Piping laid in trenches not exceeding 1m deep. Ext 32	m	32		
	Extra over HDPE PN6.3 PE100 SDR26 pipes for polypropylene compression fittings:				
104	32mm Bend. Ext 4	No	4		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 12
Plumbing And Drainage

Item		Unit	Quantity	Rate	Amount
105	32mm 45 Degree bend. Ext 2	No	2		
106	32mm Tee. Ext 1	No	1		
107	32mm Male adaptor. Ext 4	No	4		
108	32mm Female adaptor. Ext 4	No	4		
109	32mm Reducing female adaptor. Ext 4	No	4		
	Sundries:				
110	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock. Ext 4	m³	4		
111	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock. Ext 3	m³	3		
112	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor. Ext 7	m³	7		
113	Unreinforced concrete in thrust blocks in trenches at bends, tees, etc. including extra excavation, formwork, etc. Ext 1	m³	1		
114	32mm Brass gate valve. Ext 2	No	2		
115	225 x 225 x 100mm x 10kg Cast iron stopcock box including brick chamber below 500mm deep internally. Ext 2	No	2		
	Chromium plated service pipes:				
116	15mm Braided flexible connector pipe 350mm girth. Ware 12	No	12		
	ELECTRIC WATER HEATERS (CPAP WORK GROUP NO. 148)				
	'Kwikhot or equal approved':				
117	10 Litre Prisma under-basin electric water heater. (code PRX-10-UB) Ware 1	No	1		
	TOTAL CARRIED TO BILL SUMMARY			**R**	
	Section No. 2 Bill No. 12 Plumbing And Drainage				

Item		Unit	Quantity	Rate	Amount
	TESTING (CPAP WORK GROUP NO. 148)				
	Testing:				
118	Testing water pipe system. I 1	Item			
	SLEEVES (CPAP WORK GROUP NO. 148)				
	Plastic sleeves for pipes not exceeding 100mm diameter.				
119	Sleeve exceeding 250mm and not exceeding 500mm long cast into concrete slab. Ware 3	No	3		
	Plastic sleeves for pipes exceeding 100mm and not exceeding 200mm diameter:				
120	Sleeve exceeding 250mm and not exceeding 500mm long cast into concrete slabs. Ware 3	No	3		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Bill No. 12
PLUMBING AND DRAINAGE
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Item		Unit	Quantity	Rate	Amount

SECTION NO. 2

BUILDING WORKS

Bill No. 13

GLAZING

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

TOPS, SHELVES, DOORS, MIRRORS, ETC (CPAP WORK GROUP NO. 150)

6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete:

1	Mirror 1290 x 535mm high. Ware 5	No	5		

TOTAL CARRIED TO SECTION SUMMARY **R**

Section No. 2
Bill No. 13
Glazing

Item		Unit	Quantity	Rate	Amount

SECTION NO. 2
BUILDING WORKS
Bill No. 14
PAINTWORK

Key:	Location Description:
Un/A	Unallocated
Ware	Warehouse
Refu	Refuse
I	Item Location (Auto)
Ext	External

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

SABS Specifications:

Matt or eggshell decorative paint for interior works : SABS 515.

High gloss enamel paint : SABS 630 Grade I.

Oil gloss enamel paint : SABS 631.

Primers for wood for external work : SABS 678 Type I.

.Primers for wood for internal work : SABS 678 Type III

Zink chromate primers for steel : SABS 679 Type I.

Undercoats for paints (except emulsion paint) : SABS 681 Type I.

Aluminium paint : SABS 682 Grade II.

Roof paints : SABS 683 Type B (Oil) SABS 940 (Emulsion).

Structural steel paint : SABS 684 Type B.

Wash primer (metal etch) : SABS 723.

Varnish for interior use : SABS 887 Type I.

Emulsion paints : SABS 1586.

TOTAL CARRIED TO BILL SUMMARY **R**

Section No. 2
Bill No. 14
Paintwork

Item		Unit	Quantity	Rate	Amount
	ON FLOATED PLASTER (CPAP WORK GROUP NO. 152)				
	Prepare surfaces and remove all loose material, apply one coat Professional Plaster Primer and two coats fully washable and stain resistant pure acrylic paint:				
1	On exterior walls.	m²	59		
	Ware 29 Refu 30				
	Prepare surfaces and remove all loose material, apply one coat professional plaster primer and two coats fully washable and stain resistant acrylic velvet sheen paint:				
2	On interior walls.	m²	622		
	Ware 601 Refu 21				
	ON SKIM COATED PLASTER TO SMOOTH CONCRETE (CPAP WORK GROUP NO. 152)				
	Prepare surfaces and remove all loose material, rinse, fill holes and cracks with flexible crackfiller, apply one coat plaster primer and two coats super acrylic paint:				
3	On ceilings and beams.	m²	82		
	Ware 82				
4	On interior walls.	m²	3		
	Ware 3				
	ON FIBRE-CEMENT, ETC (CPAP WORK GROUP NO. 152)				
	Prepare surfaces and remove all loose material, apply one coat professional primer and fully washable and stain resistant pure acrylic paint::				
5	Fascias and barge boards , including priming metal jointing strips.	m²	2		
	Refu 2				
	ON METAL (CPAP WORK GROUP NO. 152)				
	Spot priming defects in pre-primed surfaces with synthetic metal and apply one coat universal undercoat and two coats polyurethane enamel paint on steel:				
6	Columns, beams and rafters etc.	m²	368		
	Ware 368				
	Prepare surfaces and remove all loose material, dust, grease, salts and contamination with aquasolve degreaser GR1, rinse and apply one coat galvogrip metal primer, apply one coat universal undercoat' and two coats polyurethane enamel paint on galvanised steel or aluminium:				
7	Columns, beams, rafters, purlins etc.	m²	575		
	Ware 575				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 2
Bill No. 14
Paintwork

Item		Unit	Quantity	Rate	Amount
8	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area) Refu 8	m²	8		
	ON WOOD, WOOD BOARD (CPAP WORK GROUP NO. 152)				
	Two coats wood primer:				
9	On backs of frames, lining's, etc. not exceeding 300mm wide. Ware 63	m	63		
	Stop, fill, sand down and prepare wood surfaces and apply one coat oil wood primer' one coat universal undercoat and two coats polyurethane enamel paint:				
10	On doors. Ware 32	m²	32		
11	On door frames. Ware 11	m²	11		
	Stop, fill, sand down and prepare wood surfaces and apply three coats clear exterior polywax marine grade sealer:				
12	On doors. Ware 11	m²	11		
13	On door frames. Ware 4	m²	4		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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Bill No. 14 **PAINTWORK** **BILL SUMMARY**		
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SECTION NO. 2

BUILDING WORKS

SECTION SUMMARY

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Section No. 2
SECTION SUMMARY

SECTION NO. 3

EXTERNAL WORKS

Item		Unit	Quantity	Rate	Amount

SECTION NO. 3
EXTERNAL WORKS
Bill No. 1
WALKWAYS, PAVING AND PARKING

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item

SUPPLEMENTARY PREAMBLES

Roads and Paving:

Roads and Paving's are to be executed in accordance with SABS 1200DM, SABS 1200D, SABS 1200 DA 1979, SABS 1200M, SABS 1200ME, SABS 1200MF, SABS 1200MJ and SABS 1200MK as applicable. Where SABS specifications are referred to in these Bills of Quantities they only apply to the specification of the works and not the measurement of the works. All works described in these Bills of Quantities will be measured in accordance with the ASAQS Standard System of Measuring Building Works 6th Edition including amendments.

Nature of ground:

The nature of the ground is assumed to be earth, but possibly interspersed with 'soft rock' or 'hard rock'

Carting away of excavated material:

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site.

Roadwork:

All roadwork material to conform to TRH14.

TOTAL CARRIED TO BILL SUMMARY **R**

Item		Unit	Quantity	Rate	Amount
	ROADS AND PAVING ETC:				
	EARTH FILLING, ETC. (CPAP Work Group No 104)				
	Earth filling supplied by the contractor under parking areas, roadways, etc:				
1	Under floors, paving's, ramps, etc. of G9 base material in accordance with SABS 1200 DM compacted to 93% Mod AASHTO density.	m³	215		
2	Under floors, paving's, ramps, etc. of G7 base material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density.	m³	160		
3	Under floors, paving's, ramps, etc. of G7 base material in accordance with SABS 1200 DM compacted to 97% Mod AASHTO density.	m³	110		
4	Under floors, paving's, ramps, etc. of G5 base material in accordance with SABS 1200 DM compacted to 97% Mod AASHTO density.	m³	106		
5	Under floors, paving's, ramps, etc. of C4 base material in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density.	m³	64		
	Surface Preparation:				
6	Trim and level off surface of ground (excavated or filled under a previous Contract) to receive concrete or interlocking paving, including excavating or filling, ripping and scarifying as necessary and compacting the whole area for a depth of 300mm to a density of at least 93% Mod. AASHTO maximum density, part to falls.	m²	1 065		
	TESTS (CPAP Work Group No 104)				
	Prescribed density tests on filling:				
7	Modified AASHTO Density test.	No	30		
	CONCRETE, FORMWORK & REINFORCEMENT				
	CONCRETE (CPAP Work Group No 110)				
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)				
	30Mpa/19mm Concrete				
8	Ramps, paving, surface beds cast in panels	m³	5		
	Finishing top surfaces of concrete smooth with a wood float:				
9	Ramps, paving, surface beds etc., to falls.	m²	23		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 3
Bill No. 1
Walkways, Paving And Parking

Item		Unit	Quantity	Rate	Amount
	FORMWORK (CPAP Work Group No 111)				
	Smooth Formwork to sides (DEGREE OF ACCURACY II)				
10	Edges, risers, ends and reveals not exceeding 300mm high.	m	43		
	MOVEMENT JOINTS ETC (CPAP Work Group No 111)				
	Expansion joints with low density (33kg/m³), cross linked, closed cell, expanded polyethylene joint former, with tear off strip fitted to concrete surface with adhesive as per adhesive manufacturer's recommendation between horizontal concrete and brick surfaces:				
11	10mm Isolation joints not exceeding 300mm high.	m	16		
	REINFORCEMENT (CPAP Work Group No 114)				
	Fabric reinforcement:				
12	Mesh Ref 617 fabric reinforcement in concrete surface beds, slabs, etc.	m²	23		
13	Mesh Ref 617 fabric reinforcement in concrete surface beds etc., bent down into toe of edge beam.	m²	13		
	BOND AND INTERLOCKING CONCRETE BLOCK PAVERS (CPAP Work Group No 112)				
	Paving of 50mm thick natural grey concrete bond paver paving blocks Class 25, laid to falls on and including 25mm thick sand layer with joints filled in with dry filler sand swept and vibrated, compacted with a vibration compactor, including treatment with weed killer all laid on subgrade (elsewhere measured) conforming to SABS 1200MJ degree of accuracy I.				
14	Paving in herringbone bond to sidewalks and pathways to	m²	366		
15	Fair circular cutting and waste to paving	m	10		
	Paving of 60mm thick Natural Grey concrete paving blocks Class 35 Type S-A laid to falls on and including 25mm thick sand layer with joints filled in with dry filler sand swept and vibrated, compacted with a vibration compactor, including treatment with weed killer all laid on subgrade (elsewhere measured) conforming to SABS 1200MJ degree of accuracy I.				
16	Paving in herringbone bond to forecourt and parking areas to falls.	m²	896		
17	Extra over for straight edge blocks.	m	197		
18	Fair circular cutting and waste to paving	m	26		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	PRECAST CONCRETE KERBS (CPAP work group 112)				
	Precast concrete kerbing (complying with SABS 927) in 1m lengths, wet presses, placed in position, bedded and jointed in (3:1) cement mortar and flush pointed on exposed faces, including 15MPa/19mm unreinforced concrete haunching at back of each joint, excavation, backfilling, ramming, etc.:				
19	Kerb (Figure 10) 100 x 250mm high as detailed on Drawing No. 1745-004-RDS-001 Rev T0 Typical Road Details attached to these Bills of Quantities.	m	11		
20	Barrier Kerb (Figure 4) 150 x 250mm high as detailed on Drawing No. 1745-004-RDS-001 Rev T0 Typical Road Details attached to these Bills of Quantities.	m	99		
21	Barrier Kerb (Figure 4) 150 x 250mm high, circular on plan not exceeding 4m radius formed with 330mm lengths of straight kerb as detailed on Drawing No. 1745-004-RDS-001 Rev T0 Typical Road Details attached to these Bills of Quantities.	m	3		
22	Barrier Kerb (Figure 4) 150 x 250mm high, circular on plan exceeding 4m radius formed with 330mm lengths of straight kerb as detailed on Drawing No. 1745-004-RDS-001 Rev T0 Typical Road Details attached to these Bills of Quantities.	m	2		
23	Combination kerb comprising of a barrier kerb (Figure 4) 150 x 250mm high and a tapered kerb (Figure 14) 300 x 125mm high channel as detailed on Drawing No. 1745-004-RDS-001 Rev T0 Typical Road Details attached to these Bills of Quantities.	m	105		
24	Combination kerb comprising of a barrier kerb (Figure 3) 150 x 250mm high and a tapered kerb (Figure 14) 300 x 125mm high channel circular on plan not exceeding 4m radius formed with 330mm lengths of straight kerb as detailed on Drawing No. 1745-004-RDS-001 Rev T0 Typical Road Details attached to these Bills of Quantities.	m	5		
25	Combination kerb comprising of a barrier kerb (Figure 4) 150 x 250mm high and a tapered kerb (Figure 14) 300 x 125mm high channel circular on plan exceeding 4m radius formed with 330mm lengths of straight kerb as detailed on Drawing No: 1746-004-RDS-001 Rev T0 Typical Road Details attached to these Bills of Quantities.	m	16		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 3

Bill No. 1

Walkways, Paving And Parking

Item		Unit	Quantity	Rate	Amount
	DAMPPROOFING OF WALLS AND FLOORS (CPAP Work Group No 120)				
	One layer of 250 micron embossed polyethylene waterproof sheeting sealed at laps with pressure sensitive tape:				
26	Under paving etc.	m²	23		
	JOINT SEALANTS ETC. (CPAP Work Group No 120)				
	'Sikaflex Pro 3 WF2' or equal approved polysulphide sealing compound including backing cord, bond breaker, primer, etc:				
27	10 x 10mm In horizontal expansion joints including raking out expansion joint filler as necessary.	m	16		
	ON PRECAST CONCRETE PAVING BLOCKS (CPAP Work Group No 152)				
	Prepare surfaces by chemical measures, flush with clean water, remove all loose material leaving clean dry and dust free surface and apply one coat road marking paint:				
28	On exterior white demarcation lines 100mm wide.	m	74		
29	On exterior yellow demarcation lines 100mm wide.	m	39		
30	On exterior paraplegic parking symbol to in compliance with the National Road Traffic Act.	No	2		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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Bill No. 1
Walkways, Paving And Parking

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Bill No. 1

WALKWAYS, PAVING AND PARKING

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Item		Unit	Quantity	Rate	Amount

SECTION NO. 3
EXTERNAL WORKS
Bill No. 2
BOUNDARY WALL

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

View site:

Before submitting his tender the tenderer shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained

Explosives:

No explosives whatsoever may be used for demolition purposes unless otherwise stated

General:

Water supply pipes and other piping in ground that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings to the satisfaction of the principal agent

Unless otherwise described all materials are to become the property of the contractor and are to be removed from the site

Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item

DEMOLITIONS (CPAP Work Group No 102)

Taking down and removing:

1	Steel diamond mesh fence 2,0m high with steel posts and droppers.	m	61		
2	Palisade fence 2,4m high with steel posts.	m	6		

	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
3	Corrugated iron screen/ fence 2,4m with timber posts and cladding rails etc.	m	5		
4	Existing spikes and razor wire 500mm high from top of block wall.	m	60		
5	Double palisade gate 5000 x 2400mm high, including steel posts etc.	No	2		
	Demolishing and removing:				
6	M4 block boundary or yard walls 2,1m high with 500mm razor wire and pilasters at 3,0m centres.	m	129		
	PREPARATORY WORK TO EXISTING SURFACES (CPAP Work Group No 102)				
	Preparatory work:				
7	Prepare existing painted block wall to receive plaster finish.	m²	131		
	EXCAVATION OTHER THAN BULK (CPAP Work Group No 104)				
	Excavation in earth not exceeding 2m deep:				
8	Trenches.	m³	145		
	Extra over excavations other than bulk in earth for excavation in:				
9	Soft rock.	m³	44		
10	Hard rock.	m³	29		
	Extra over excavations other than bulk in earth for breaking up and removing:				
11	Brickwork	m³	22		
12	Unreinforced concrete	m³	22		
	Risk of collapse of excavations other than bulk:				
13	Sides of trench and hole excavations not exceeding 1,5m deep.	m²	387		
	CARTING AWAY. (CPAP Work Group No 104)				
	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):				
14	Off site to a dumping site to be found by the Contractor.	m³	107		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	EARTH FILLING, ETC. (CPAP Work Group No 104)				
	Filling with material from the excavations compacted to a density of at least 95% Mod. AASHTO maximum density:				
15	Backfilling to trenches, holes etc.	m³	38		
	Filling with approved G7 material in accordance with SABS 1200 DM supplied and carted on to site by the Contractor, compacted to 93% Mod AASHTO density:				
16	Backfilling to trenches, holes etc.	m³	38		
	KEEPING EXCAVATIONS FREE OF WATER (CPAP Work Group No 104):				
	Keeping excavations free of water:				
17	Keeping excavations free of all water other than subterranean water.	Item			
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)				
	15MPa/19mm Concrete:				
18	Blinding.	m³	7		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (CPAP Work Group No 110)				
	20MPa/19mm Concrete:				
19	Strip footings.	m³	36		
	TEST BLOCKS (CPAP Work Group No 110)				
	Test blocks:				
20	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes.	Sets	6		
	REINFORCEMENT (CPAP Work Group No 114)				
	Fabric reinforcement:				
21	Type 617 fabric reinforcement in concrete strip footings, etc.	m²	194		
	PRECAST CONCRETE COPINGS ETC (CPAP Work Group No 112)				
	Precast concrete finished smooth on exposed surfaces including bedding, jointing and pointing:				
22	430 x 60mm Thick overall copings weathered on top to 60mm thick along one edge, with drip groove in bottom along both edges	m	205		
23	Extra over for mitred angle block.	m	6		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	BRICKWORK IN BOUNDARY WALLS (CPAP Work Group No 116)				
	Brickwork of NFXE bricks (14MPa nominal compressive strength) in Class I mortar in loadbearing walls, etc.:				
24	Piers.	m^3	1		
25	330mm Hollow diaphragm walls of two half brick skins.	m^2	629		
	BRICKWORK SUNDRIES (CPAP Work Group No 116)				
	Brickwork sundries:				
26	Closing 110mm cavities of hollow walls horizontally with one course of brickwork.	m	194		
27	Closing 110mm cavities of hollow walls vertically with brickwork one brick wide.	m	120		
	Joint forming material in movement joints:				
28	10mm Expanded polystyrene (density 33kg per m3) 165mm wide with one tear-off strip, built in vertically through brick walls.	m	162		
	Brickwork reinforcement:				
29	75mm Wide reinforcement built in horizontally.	m	3 702		
	BLOCK WORK (CPAP Work Group No 116)				
	Block work in class II mortar:				
30	140mm (M6) Walls.	m^2	30		
31	Extra over 140mm (M6) hollow walls for internal stiffener piers 140mm wide (one block) projecting 250mm including filling cores solid with 15Mpa mass concrete.	m	10		
	BLOCK WORK SUNDRIES (CPAP WORK GROUP NO. 116)				
	Mortar filling including necessary formwork to soffits:				
32	To single hollow core of 140mm hollow block.	No	53		
	DAMPPROOFING OF WALLS AND FLOORS (CPAP Work Group No 120)				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):				
33	In walls.	m^2	64		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	JOINT SEALANTS ETC. (CPAP Work Group No 120)				
	'Sikaflex Pro 3' Silicone sealing compound including backing cord, bond breaker, primer, etc.:				
34	10 x 10mm In vertical expansion joints including raking out expansion joint filler as necessary	m	162		
	METAL WORK				
	HOT DIPPED GALVANISED STEEL GATES, SCREENS, ETC, (CPAP Work Group No 136)				
	Thermo hot dipped galvanised mild steel fencing including Marine Fusion Bond factory applied painted finish to specified colour:				
	Posts:				
35	152 x 152mm Gate post 2400mm high with UV stabilised polymer cap, 'locking Recess Mechanism' to secure panel edges and including 450 x 450 x 900mm deep cement concrete 25MPa/19mm stone) base including all excavation in earth, backfilling and ramming.	No	4		
	Gates:				
36	Double swing gate of in equal leaves, size 4600 x 1800mm high, each leaf comprising of vertical height covered with 76.2 x 12.7 x 3mm diameter wire, the panel reinforced with 4 x 50mm deep 'V' formation horizontal recessed bands (ridgity) secured to gate frame, gate frame, comprising horizontal bottom rail and vertical stiles of 76 x 76 x 3,0mm SHS hot dip galvanised steel with welded joints, one stile fitted with two 300mm long barrel bolts and two keeps in and including 300 x 300 x 300mm concrete anchor bolts, fitted to fence posts cost into and including 25Mpa footing size 200mm wide x 200mm deep, including excavation and formwork installed complete as per G03 on Drawing No. MDA-483D-G03 attached to these Bills of Quantities.	No	1		
37	Double swing gate of in equal leaves, size 5000 x 1800mm high, each leaf comprising of vertical height covered with 76.2 x 12.7 x 3mm diameter wire, the panel reinforced with 4 x 50mm deep 'V' formation horizontal recessed bands (ridgity) secured to gate frame, gate frame, comprising horizontal bottom rail and vertical stiles of 76 x 76 x 3,0mm SHS hot dip galvanised steel with welded joints, one stile fitted with two 300mm long barrel bolts and two keeps in and including 300 x 300 x 300mm concrete anchor bolts, fitted to fence posts cost into and including 25Mpa footing size 200mm wide x 200mm deep, including excavation and formwork installed complete as per G02 on Drawing No. MDA-483D-G02 attached to these Bills of Quantities.	No	1		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	EXTERNAL PLASTER (CPAP Work Group No 142)				
	Cement plaster on brickwork:				
38	On walls.	m²	1 079		
	Cement plaster on block work:				
39	On walls.	m²	161		
40	On narrow widths.	m²	1		
	ON FLOATED PLASTER (CPAP Work Group No 152)				
	Prepare surfaces and remove all loose material, apply one coat plaster primer and two coats super acrylic paint:				
41	On exterior walls.	m²	1 241		
	ON SMOOTH CONCRETE (CPAP Work Group No 152)				
	Prepare surfaces and remove all loose material, apply one coat plaster primer and two coats super acrylic paint:				
42	On copings.	m²	153		
	PREPARATORY WORK TO PREVIOUSLY PAINTED SURFACES				
	Generally:				
	All surfaces must be sound, clean and have a moisture content of less than 8% for walls generally and 3% for slabs/screeds etc.				
	Where surfaces of plaster etc are sandy / friable, the first coat must be replaced with 'Plascon Merit' plaster primer thinned 10% with turpentine.				
	Previously painted plastered surfaces:				
	Surfaces shall be thoroughly washed down to remove dirt and other contaminants and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with exterior filler, and sanded smooth. In the case of previously limewashed surfaces, completely remove all limewash if possible or at least wire brush and scrape down to achieve a 'grey state' exposure of the substrate and apply filler as indicated above.				
	Previously painted metal surfaces:				
	Surfaces shall be thoroughly rubbed and cleaned down to remove dirt and other contaminants and sanded lightly to provide a key for subsequent coats. Blistered or peeling paint shall be completely removed down to bare metal and any rust encountered shall be removed and bare metal areas cleaned, washed with sugar soap and spot primed with metal primer'.				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	Previously painted galvanised metal surfaces: Surfaces shall be thoroughly rubbed and cleaned down to remove dirt and other contaminants and sanded lightly to provide a key for subsequent coats. Blistered or peeling paint shall be completely removed down to bare metal and any rust encountered shall be removed and bare metal areas cleaned with galvanised iron cleaner and spot primed with galvogrip metal primer. **Previously painted wood surfaces:** Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with a filler as described and sanded smooth. In the case of previously varnished surfaces, all existing varnish must be thoroughly sanded off before new coats are applied. **ON FLOATED PLASTER (CPAP Work Group No 152)** **Remove any loose and flaking residue by means of wire brushing, wash with sugar soap or weak spirits of salts, open up cracks and make good with exterior filler sanded smooth, apply one coat masonry paint and two coats fully washable and stain resistant pure acrylic paint on existing water based paint surfaces in poor condition:**				
43	On exterior walls.	m²	162		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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Bill No. 2

BOUNDARY WALL

BILL SUMMARY

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	EXTERNAL WORKS				
	Bill No. 3				
	GRASSING				
	TRADE PREAMBLES				
	Trade Preambles:				
	For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.				
	NOTE:				
	Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item				
	GRASSING (CPAP Work Group No 104)				
	Ground preparation:				
1	Cultivation and preparation of areas to be planted	m²	294		
	Topsoil, compost, lime and fertiliser:				
2	Topsoil obtained from prescribed stock piles on site in plant beds, grassed areas and holes for trees, shrubs, etc.	m³	31		
	Garden soil filling supplied by the Contractor (not compacted):				
3	Topsoil supplied by the Contractor in plant beds, grassed areas and holes for trees, shrubs, etc.	m³	13		
4	Fertilize garden soil with 3:2:1 super phosphate spread at a rate of 1kg/10m2 including working evenly into top 20mm depth of soil.	m²	294		
	Grassing of rolls approximately 60mm thick:				
5	Kikuyu grass over site.	m²	294		
	Maintenance:				
6	Maintenance of grassed and ground covered areas for a period of 3 months (total area approximately 294m2) including regularly weeding and irrigating as necessary.	Item			
	TOTAL CARRIED TO SECTION SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	SECTION NO. 3 **EXTERNAL WORKS** **Bill No. 4** **TEMPORARY FENCING**				
	TRADE PREAMBLES				
	Trade preambles:				
	For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.				
	SUPPLEMENTARY PREAMBLES				
	Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item				
	TEMPORARY FENCING AND GATES (CPAP Work Group No 136)				
	NOTE: The Contractor will, throughout the entire period of the works, be responsible for the proper and adequate protection of property and the public and the tenant's personnel from damage or injury resultant from the works and for the proper security of the site at all times during the course of the works. Further, the Contractor must allow for all temporary hoardings, fans and walkways, etc. required by the Local Authorities, National Building Regulations. OHS Act and or demanded by his own requirements. Allowance must further be made for periodic adjustment of any hoardings/ temporary fencing and for their eventual removal and for making good. The following specific fencing is required. All other temporary fencing hoardings etc. Required must be priced for in the Preliminaries of these Bills of Quantities				
	NOTE: The prices of fencing shall be deemed to include site clearance and the preparation of ground as necessary, and the removal of the fencing after completion, filling in holes etc. and making good grass etc. where fence removed and the Contractor is to price accordingly.				
	Stout barrier fencing:				
1	Stout barrier fencing 1800mm high including, intermediate posts, straining posts, stays and end posts, straining wires, diamond mesh etc., covered with shade cloth, installed complete.	m	82		
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
2	Carefully take down and re-erect stout barrier fencing 1800mm high in new position including, intermediate posts, straining posts, stays and end posts, straining wires, diamond mesh, etc., covered with shade cloth, installed complete.	m	67		
3	Take down and remove stout barrier fencing 1800mm high including, intermediate posts, straining posts, stays and end posts, straining wires, diamond mesh etc., covered with shade cloth, installed complete, including removal after completion of the contract and making good etc.	m	82		
4	Pedestrian gate size 900 x 1500mm high, including providing gate posts, locking chains etc. and the removal of gate on completion.	No	2		
5	Double vehicle gate size 3800 x 1500mm high, including providing gate posts, locking chains etc. and the removal of gate on completion.	No	2		
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SECTION NO. 3

EXTERNAL WORKS

SECTION SUMMARY

Bill No.		Page	Amount
1	WALKWAYS, PAVING AND PARKING	99	
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Section No. 3
SECTION SUMMARY

SECTION NO. 4

ELECTRICAL INSTALLATION

Item		Unit	Quantity	Rate	Amount
	SECTION NO. 4				
	ELECTRICAL INSTALLATION				
	Bill No. 1				
	ELECTRICAL INSTALLATION				
	ELECTRICAL INSTALLATION				
	TOTAL TRANSFERRED FROM ELECTRICAL INSTALLATION BILLS OF QUANTITIES SUMMARY EXCLUDING VAT TO ITEM 1 BELOW				
1	Electrical Installation.	Item			
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3	Attendance on electrical installation.	Item			
	TOTAL CARRIED TO FINAL SUMMARY			**R**	

EASTERN CAPE DEVELOPMENT CORPORATION

ELECTRICAL AND ELECTRONIC SPECIFICATION

CONTRACT NUMBER: 1764.004
CONTRACT NAME: REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696, 14 TIMBER STREET VULINDLELA HEIGHTS – (MTHATHA CLUSTER G)
DATE: 08 FEBRUARY 2024

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1. SCOPE OF WORK

1.1 OVERVIEW OF THE WORKS

The project promises an exisitng warehouse that is being refurbished. The electrical installations will be removed and upgraded as well as a new fire detection and intruder alarm system to be installed.

The electrical installation includes the supply and install of the electrical and/or electronic installations as per the electrical installation specifications, annexures, drawings and schedules, which form part of the tender documentation, and updated documentation/drawings issued during the construction phase.

- The electrical contractor shall inform, in writing to the engineer of any deviations from the below-mentioned documentation and/or any contradictions to the latest revision/update of any regulatory standards/regulation.
- The commissioning and testing shall form part of the scope of work of the electrical contractor including the issuing of the certificates of compliance for the electrical installation.
- The electrical contractor shall inform the engineer once the work is completed to arrange a site inspection of the completed electrical installation as well as provide a date for site handover.

The following items/work broadly defines the work to be done by the electrical contractor:

- The existing electrical installation to be made safe prior to commencement of alterations and/or refurbishments.
- The electrical contractor must provide a site distribution board (including an electricity meter) for use during construction if the Client makes electricity available and will be metered.
- A valid certificate of compliance must accompany the above-mentioned site distribution board.
- Where the disposal of equipment is required of hazardous classification, disposal certificates to be issued as part of the environmental plan.
- The Client has the option to retain possession of any items/equipment to be removed which forms part of the demolishing and/or refurbishment of the electrical installation.
- The electrical contractor is responsible for any liaison and arrangement with the electricity supply authority and/or municipality.
- Where a new or upgrading of the electricity supply is required, the electrical contractor shall submit the electricity application.
- Installation of draw wires where required/applicable.
- Any trenching/excavations, backfilling and compacting where required.
- Where any wireways are required to be recessed installed, the electrical contractor shall conduct the chasing and making good afterwards.
- The electrical contractor will be responsible for the costs for any walls required to be chased, which has already been plastered.
- The electrical contractor to issue samples of all required equipment.
- Compile and issue record information documentation as well as technical, operation and maintenance manuals.
- The electrical contractor shall conduct a training session as part of close out of the project to the Employer/Client and/or End-user/Staff.
- The electrical installation includes a one-year comprehensive guarantee which includes repairs.

1.2 ELECTRICITY SUPPLY

1.2.1 EXISTING ELECTRICITY SUPPLY

The existing electrical installation must remain live as far as possible however the electrical installations shall be upgraded and also allow provision for a dedicated supply to the lighting and dedicated switched socket outlet circuits.

- Work will be carried out during normal working hours as agreed with the Client/End User.
- If any work is required to be carried out outside of normal working hours, the Client/End User shall be notified in advance with timeframes for notification agreed with the Client/End User.

There is an existing electricity supply with ratings of 400/230V, three-phase, four-wire, 50 Hz electricity supply from the nearest distribution board, kiosk or transformer.

1.2.2 ELECTRICITY APPLICATION

Unless specifically specified otherwise, the electrical contractor must apply to the local electricity supply authority for the upgrading of the existing electricity supply and arrange for the payment thereof by the contractor.

The electrical contractor must allow for attending and liaison with the electricity supply authority and ensure that the service connection is not delayed and is held responsible for the electricity application and the execution of the work.

- The terms “council” and “municipality”, where used, means the same as electricity supply authority.

1.2.3 ELECTRICITY SUPPLY AUTHORITY’S METERING

Unless otherwise specified, the electricity supply authority’s metering panel and/or equipment must be incorporated in the main distribution board or any other distribution board(s) as applicable and/or specified.

The electrical contractor must ascertain and establish the correct space and all other requirements of the electricity supply authority for the accommodation of their meter panel or equipment.

The electrical contractor must also provide the necessary links in busbars or any other requirements for metering CTs as well as all necessary cables, jumpers and connections between such metering equipment and the consumer’s equipment.

The electrical contractor must liaise with the electricity supply authority meter department on the requirements for the electricity supply on the erf boundary.

- If the information received contradict what is allowed in the electrical installation, the electrical contractor to inform the engineer in writing within seven days after the information was received.

2. LIST OF ABBREVIATIONS

A	-	Ampere
AC	-	Alternating current
ACB	-	Air circuit breaker
ADMD	-	After diversified maximum demand
AFFL	-	Above finished floor level
Ah	-	Ampere hour
BCE	-	Boer copper earth
CCTV	-	Close circuit television
CIBSE	-	Chartered Installation of Building Services Engineers
CoC	-	Certificate of Compliance
DB	-	Distribution board
DC	-	Direct current
e.g.	-	For example
HRC	-	High rupturing capacity
HVAC	-	Heating ventilation and air-conditioning
Hz	-	Hertz
IEC	-	International Electrotechnical Commission
IP	-	Ingress protection (distribution boards)
IP	-	Internet protocol (network services)
kA	-	Kilo Ampere
kV	-	Kilo Volt
kVA	-	Kilo Volt Ampere
kW	-	Kilo Watt
kWh	-	Kilo Watt hour
LED	-	Light emitting diode
LV	-	Low voltage
m	-	Meter
MCB	-	Miniature circuit breaker
MCCB	-	Moulded case circuit breaker
MDB	-	Main distribution board
MICC	-	Mineral insulated copper covered
mm	-	Millimetre
mm^2	-	Square millimetre
MV	-	Medium voltage
pf	-	Power factor
PFC	-	Power factor correction
PVC	-	Polyvinyl Chloride
UPS	-	Uninterrupted power supply
UV	-	Ultraviolet
V	-	Volt
VA	-	Volt ampere
VoIP	-	Voice over IP
W	-	Watt
RMS	-	Root mean square
SDB	-	Sub distribution board

3. APPLICABLE STANDARDS

All work shall be carried out in accordance with the applicable standards, codes and regulations. The contractor shall review the specifications and drawings. If any section of the specifications contradicts the current/latest editions/revisions of standards, codes and regulations listed and/or as applicable, the engineer shall immediately be informed in writing for review and a formal response.

No claims for extra and/or alteration to work completed as a result of the contractor failing to inform the engineer of contradictions changes in the above standards, codes, and regulations will be considered/entertained.

The complete installation including the electrical, fire, Telkom, intercom, communications, and data/IT systems shall comply with the current/latest editions/revisions of the relevant and applicable standards, codes, and regulations.

3.1 GENERAL STANDARDS

- Occupational Health and Safety Act No. 85 of 1993
- SANS 10400 - National Building Regulations
- The relevant SANS and NRS Specifications
- The Municipal Bye-Laws and any requirements of the local and supply authorities of the area
- All the Specifications within the Contract Document
- All the drawings forming part of the Contract Document
- Other, as relevant and applicable

3.2 ELECTRICAL STANDARDS

- SANS 10142-1 - The Wiring of Premises Part 1: Low-voltage installations
- SANS 10142-2 - The Wiring of Premises Part 2: Medium-voltage installations above 1kV AC not exceeding 22kV AC. and up to and including 3,000 kW installed capacity.
- SANS 10114 - Interior lighting Part 1: Artificial lighting of interiors
- SANS 10313 and 62305 - Protection against Lightning – Physical damage to structures and life hazard.
- SANS 1973-1 - Low-voltage switchgear and controlgear ASSEMBLIES Part 1: Type-tested ASSEMBLIES with stated deviations and a rated short-circuit withstand strength above 10 kA
- SANS 1973-3, Low-voltage switchgear and controlgear ASSEMBLIES – Part 3: Safety of ASSEMBLIES with a rated prospective short-circuit current of up to and including 10 kA
- SANS 1473-1, Low-voltage switchgear and controlgear ASSEMBLIES – Part 1: Type-tested, partially type-tested and specially tested assemblies with a rated short-circuit withstand strength above 10 kA
- SANS 1973-8, Low-voltage switchgear and controlgear ASSEMBLIES – Part 8: Safety of minimally tested ASSEMBLIES (MTA) with a rated short- circuit current above 10 kA and a rated busbar current of up to and including 1 600A AC and DC
- SANS 60439-4/IEC 60439-4, Low-voltage switchgear and controlgear assemblies – Part 4: Particular requirements for assemblies for construction sites (ACS)
- SANS 60439-5/IEC 60439-5, Low-voltage switchgear and controlgear assemblies – Part 5: Particular requirements for assemblies for power distribution in networks
- Other, as relevant and applicable

3.3 FIRE STANDARDS

- Local Fire Department Regulations
- SANS 10139 - Code of practice for design, installation, commissioning and maintenance of fire detection and alarm systems in non-domestic premises

3.4 OCCUPATIONAL HEALTH AND SAFETY

The contractor shall work safely and in accordance with the provisions of the OSH Act. The contractor is required to appoint a full-time safety co-ordinator on site who shall take responsibility for safety on site and liaise with the Main Contractor/Employer on matters relating to safety.

Should any hazardous situation arise during construction and/or from the work being performed/undertaken, the contractor shall immediately inform the Main Contractor/Employer/Architect/Engineer of such situation, as well as what action he is taking to rectify this situation, alternatively what assistance/action he may require from the Main Contractor/Employer in this regard.

The Main Contractor/Employer reserves the right to take whatever action as may be required to enforce safety standards should the Main Contractor/ Employer/ Architect/ Engineer discover that the contractor is working unsafely. No claims for extras in respect of failure by the contractor to comply with any of the regulations will be considered /entertained.

3.5 OTHER RELEVANT STANDARDS

- Regulations of Telkom
- Plant and Equipment Manufacturer's Specifications
- SANS 10061 Part 1 - The installation of communal and single antenna systems for the reception of television and sound broadcast transmissions – VHF and UHF television and VHF sound antenna
- SANS 10061 Part 2 - The installation of communal and single antenna systems for the reception of television and sound broadcast transmissions – Satellite antenna systems.
- SANS 10086-1 - The installation, inspection and maintenance of equipment used in explosive atmospheres
- SANS 10108 - The classification of hazardous locations and selection of apparatus for use in such locations
- SANS 1252 - Passive antennae for the reception of VHF and UHF television and VHF sound transmissions
- SANS 1611 - The mechanical requirements for satellite television receiving antennas.
- SANS 60079 - Classification of areas: explosive gases and dusts
- Green Buildings Council South Africa – Green Star
- CIBSE Commissioning Codes
- Other, as relevant and applicable

4. PRECEDENCE OF CLAUSES

Precedence of clauses as follows:

- Applicable and specified National and Local standards/codes/regulations
- Project drawings, specifications and Annexures
- General specification

The engineer shall be informed in writing of any uncertainty regarding any precedence of clauses/requirements and/or contradictions, for clarification and/or a ruling.

5. GENERAL SPECIFICATION

This general specification covers the general requirements regarding material, equipment, installation, testing and commissioning of the installations and shall be read in conjunction with the conditions of tender, conditions of contract, the project specifications and annexures, and drawings. The completed installations shall comply with the requirements of this specification and good practice. Should any differences and/or contradictions exist between this general specification and the specification for specific installation(s), these should be pointed out to the engineer for clarification and a ruling.

Any items not specifically specified, but reasonably required/assumed to be necessary, for the proper completion of the works to recognized standards of workmanship and good practice, shall be deemed to be included in the contract. All work shall be executed and finished in a permanent and neat manner by competent workmen, incorporating accepted methods in recognized practice and in conformity with the various standards and codes of practice and regulations.

Drawings indicating general arrangement for equipment and construction illustrative detail are included in this part of the specification. Where information/requirements on these drawings differ from the project drawings, the information/requirements on the latter drawings shall take precedence. Information/requirements on the project drawings shall in general take precedence over any conflicting requirements specified in this general specification but shall never there less be clarified with the engineer.

Where deviations to contract drawings/specifications are made during the execution of the works, marked up drawings showing the changes as-built, must be submitted to the engineer before the final acceptance of the works.

The scaled dimensions to the centre of the symbol shall be taken to the centre of the outlets in the absence of specified dimensions on drawings. The contractor is responsible for checking with the main contractor, by reference to the drawings on site, the positions where panelling, tiling, tile edging or dadoes, etc. may affect the electrical equipment/installation(s).

Before final connections are made, the phases in the relevant distribution boards shall be checked for “out of balance” and connections made to the phase or phases with the lowest reading so that the loads shall be balanced over the phases.

The contractor is responsible to maintain progress of work, so that the main contractor/other contractors are not obstructed and/or delayed in completing the contract works timeously, in sequence and on program. Extension of the contract completion date required due to variations to the contract will be in accordance with the conditions of contract used/applicable, as provided/specified by the Employer or the main contractor.

The contractor shall make good damage to surfaces necessitated by the execution of the installation, unless expressly stated as an exception elsewhere. The contractor will be responsible for the condition of the surfaces and the finishes of all electrical equipment installed. Any such equipment shall be repaired by the contractor in such a way as to match the original finish as supplied by the manufacturer and as specified/intended.

The contractor shall regularly remove his accumulated debris from/off site. In production related areas, the debris shall immediately be removed from/off site. The site shall remain neat and tidy and accessible.

All defects found/identified during the first delivery inspection shall be rectified as soon as possible, and within program. The contract works will not be deemed to be complete until the engineer's final inspection evaluation/report is issued and the electricidal certificate of compliance is issued by the contractor and reviewed/accepted by the engineer.

All metal exposed to the elements and/or corrosive atmospheres/environments, to be built-in and/or installed underground and/or in service trenches, shall be hot dip galvanized (or otherwise protected) unless specified or approved otherwise.

The contractor shall notify the engineer and/or his duly designated representative when the installation(s) reach various stages of completion so that the engineer may inspect the installations and point out defects and clarify issues as raised or identified on site.

These inspections will be informal and under no circumstances will they partly and/or wholly invalidate or over-ride the requirements of the specifications. Any costs incurred in correcting defects shall be for the contractor's account.

Where specific makes of equipment are referred to in this document the intention is to establish standards and/or specific requirements pertaining to such equipment. Tenderers may offer similar and equal equipment but must obtain written approval from the engineer prior to ordering/use/installation of such equipment.

As part on ongoing work during the construction phase of the project, the contractor to provide monthly progress reports to be issued on the last Tuesday of each month. The progress report to be accommodated with a financial report or final estimated quantities.

5.1 COORDINATION

Prior to setting out of wireways, outlets and/or equipment, the contractor shall arrange a co-ordination meeting with all service providers and/or contractors, to review the drawings and co-ordination requirements. Prior to any wireways, outlets and/or equipment being installed, the services shall be coordinated and any clashes shall be identified and issued to the engineer in writing for clarification/rulings.

Extra costs/expenditure as a result of failure to complete the above-mentioned service co-ordination requirements impacting on the contractor's work will not be considered/entertained. If any additional equipment is required as a result of the service co-ordination meeting, which was not specified in the contract, the engineer shall be informed in writing for a formal response/ruling.

Where existing equipment is indicated on the drawings, this is only indicative, and the contractor must confirm exact details/positions prior to any work being carried out which might impact the works.

Should already plastered walls be chased without permission, the repair cost will be for the account of the contractor.

5.2 MATERIALS

The contractor shall ensure that all materials and equipment used for/on the project comply with the South African National Standards. All material and equipment shall bear the SABS/SANS mark and where the code does not apply or one does not exist, the applicable British Standard or International Electrotechnical Commission standard shall apply, and the applicable standards mark must be present. The contractor, at no additional cost, shall provide, if required, the proof of compliance with standards and the supporting documentation.

The contractor shall supply and install equipment, supports and fixings suitable for use together and for the specific environment were located and shall these be corrosion proof. All screws/fixings in areas where damp/water is present, shall be stainless steel.

Special attention shall also be paid to the combination and finishes of materials so as to avoid electrolysis/electrolytic interactions and corrosion.

Interchangeability of equipment: similar and equivalent equipment shall be identical in all respects and to the smallest detail such as contacts, fuses, coils, methods of wiring, wiring numbers, instruments, indicating lights and other accessories. It shall be possible to replace any piece of equipment with any similar and equivalent item of equipment under the same contract/subcontract.

Where a certain manufacturer's material or apparatus is mentioned/specified in the drawings or specifications, such materials or apparatus shall be provided as specified, except where an alternative to this condition is allowed in the specifications. Where a specification for material or apparatus is not provided, it shall be understood that all normal requirements for the use of such material or equipment shall apply.

5.3 DRAWINGS

The Installation is specified on the drawings as listed in the DRAWING REGISTER. The Contractor shall also consult the architectural, civil, structural, mechanical and other services drawings.

Workshop drawings shall be provided of the following:

- Distribution boards: electrical, telephone, IT/computers, security, access control, fire alarm, CCTV and communication
- Builder’s works required for the services installation, e.g. plinths, holes, openings, etc.
- Powerskirting and fittings/accessories layouts and details
- Cable ladders/trays and fittings/accessories layouts and details
- Wiring trunking/ducting layouts and details
- UPS and/or standby generator

These must be submitted timeously to permit enough time for scrutiny, adjustment and resubmission and such that no delivery problems are caused.

The Engineer's scrutiny of shop drawings or samples shall not relieve the Contractor of responsibility for any deviation from the requirements of this Contract, unless the Contractor has informed the Engineer in writing of such deviations at the time of submission of shop drawings or samples and the Engineer has given written approval for the specific deviation, nor shall this relieve the Contractor of responsibility for errors or omissions in the shop drawings or samples.

As-built drawings of all drawings for which workshop drawings were submitted, as well as of the cable routes in the ground with location dimensions, shall be provided.

5.4 LABELLING

All labels shall be permanent type where visible. Permanent is defined as having to use a tool or a key to fix in position or remove the label.

No adhesive type (sticker) label may be used unless it is used for labelling inside outlet boxes or the back of cover plate, thus not visible/exposed.

5.5 MAKING SAFE AND REMOVING

Prior to any work commencing, the contractor shall ensure that any existing electrical installation is safe and provide written confirmation of this to the engineer and the main contractor. Any electrical materials and/or equipment removed during the project remains the property of the Employer. The contractor may only remove from site and discard the materials/equipment removed once confirmation/approval has been issued by the engineer, after liaison with the Employer.

Where any material/equipment removed has any environmental impact, the Health and Safety Agent shall be contacted and confirm that the steps to be taken by the contractor are the appropriate measures to mitigate any environmental impact.

An example is lamps: these must be removed off site and be correctly disposed of, and the disposal certificate must be submitted to the engineer to confirm correct disposal.

An inventory of all material/equipment removed from site must be issued monthly by the contractor to the engineer. Failing to issue the inventory list shall result in no payment against/for the claimed items.

5.6 BUSBAR TRUNKING

5.6.1 GENERAL

Busbars shall be rated in accordance with the drawings, shall be braced for the fault currents specified. and shall comply with SANS 1195. Detail manufacturer’s drawings of the busbar runs with fixing and accessories shall be submitted to the engineer for scrutiny prior to fabrication.

5.6.2 CONSTRUCTION

Busbars shall be of rectangular section, manufactured copper, complying with SANS 1195 and be suitable for flat/horizontal or vertical mounting.

Horizontal busbar runs shall have a minimum clearance of 2400mm above the finished floor level, except where the busbar enters or leaves distribution equipment.

Access to busbar trunking shall be maintained at all points except were passing through floors, walls partitions and as otherwise specified and/or approved. Busbar location relative to other trades/services shall be coordinated on site.

Busbar enclosures and covers shall be manufactured from galvanised sheet steel in accordance with SANS 1195, except where otherwise specified and/or approved.

All joints in the busbars shall be properly cleaned and shall be firmly clamped together with suitable clamps and high tensile steel bolts, washers and nuts.
Clamped joints shall be designed to maintain contact pressure permitting rated current at rated temperature and thermal expansion without buckling of busbars. Joints shall not loosen under vibration and/or long-term use.

The manufacturer shall specify the tightening torque to be applied to bolted or screwed joints in busbars.

Maximum temperature rise for plated joints shall not exceed 50ºC above 30º ambient.
All busbars shall be carried/supported on insulated supports placed at intervals not exceeding 600mm.

All current carrying parts, connecting strips, collector bars, etc. shall be adequately marked in phase colours with heat shrink PVC sleeving or be painted and colour coded. The colour yellow shall not be associated with any conductor which is not at earth potential.

Connecting strips and connector bars shall be of sufficient cross-sectional and contract area to carry full rated current of the switches served, irrespective of the fuse or trip rating.

At openings through floors, the building contractor shall provide 100mm x 100mm concrete kerb/upstand or approved equivalent, to prevent ingress of water down into the shaft. The contractor shall close the openings through the floor with approved non-combustible fire barrier/proofing material fitted closely around the busbar.

Non-ferrous drip pans, extending 300mm beyond the sides of the busbars, shall be provided under water, steam, sewer, sprinkler, etc. pipes where such pipes are routed over busbars.

Built-in fire barriers shall be provided at every floor level on vertical runs and at locations where busbars go through fireproof barrier walls. Busbars shall be provided/installed with approved clamped joints above and below/before and after fire barriers for easy removal of busbars.

Nameplates/Labels shall be provided on busbars in all LV switch rooms, risers etc.so that it is easily identifiable anywhere along its route.

5.6.3 BUSBAR INSULATORS

A laboratory report shall be submitted, confirming the material content, physical properties and electrical characteristics of the insulators, if required.

Busbar insulator material shall be Tufnell, or approved equivalent, shaped and spaced to provide protection against tracking, flashover and warping of busbars.

Busbar insulators, supports and clamps shall prevent deflection during short circuits.
Provision shall be made for expansion of/adding to the busbars.

5.6.4 EARTH BARS

A copper earth bar shall be provided, running the full length of the busbars. It shall be fastened to the outside of the busbar enclosure at intervals not exceeding 1500mm, and shall be rated as specified, but in any case not smaller than 50% of the phase busbars.

5.6.5 ENCLOSURE

The busbar enclosure shall be of galvanised sheet steel of thickness in accordance with the relevant SANS code and shall adequately protect the busbars whilst providing adequate ventilation and vermin proofing.

The enclosure shall be treated inside and outside with an approved rust inhibitor and finished in an approved electric orange, unless otherwise specified or approved.

5.6.6 PLUG-IN SWITCH AND CIRCUIT BREAKER UNITS

The circuit breaker units shall be completely enclosed in sheet steel housings with hinged covers. Adequate knockouts and attachments shall be provided on the busbars. High contact pressure silver plated stubs to engage the busbars shall be provided, totally enclosed in shock-resisting thermosetting plastic insulators. All load terminals shall have solderless lugs.

5.6.7 GUARANTEE

The contractor shall provide/include a twelve (12) month guarantee to replace, free of charge, any portion of the busbars installation in which manufacturing defects may be identified/develop during that period. Such period shall commence from the date on which the installation including the busbars are taken over by the employer.

5.7 DISTRIBUTION BOARDS AND KIOSKS

5.7.1 GENERAL CONSTRUCTION

The contractor shall issue factory acceptance certificates including “as-build” workshop drawings to the engineer prior to any power being connected to any distribution board and/or kiosk.

5.7.1.1 DISTRIBUTION BOARDS

Standard, approved manufacture, SABS/SANS approved, and type tested as per SANS/SABS distribution boards, complete with doors where specified, shall be used.

Distribution boards of 150A and larger shall be certified. Certificates are required with the workshop drawings and again on delivery of the boards and for the record/as-built documents/manual.

Type tests are not required, unless specifically specified.

All distribution boards shall comply with the requirements of the Electricity Supply Authority and shall have the necessary space and/or equipment per their normal requirements, e.g. for metering, pre-payment meters, current demand circuit breakers, as well as space for the necessary equipment for the switching of water heating equipment by means of ripple relay, etc. Workshop drawings of distribution boards must be submitted timeously for comment.

Distribution boards shall consist of a deep architrave frame which shall carry the equipment chassis panel and door. A bonding tray shall be provided onto which the architrave frame is secured.

Bonding trays shall be designed to be built into the wall. Expanded metal, the size of the tray, shall be spot welded to its rear surface.

The tray shall be constructed of minimum 1.6mm galvanised sheet steel suitably braced by means of gussets. It shall be suitably sized to accommodate the specified equipment without congestion. At least 30% spare capacity/space shall be provided for future expansion.

An architrave frame, constructed of minimum 1.6mm sheet steel, suitably braced and formed with beveled edges, shall accommodate chassis panel and door(s). The frame shall be fixed to the tray in such a manner as to allow for depth and out of plumb adjustment.

Doors shall be of smooth flat finish, suitably braced to ensure rigidity, and recessed flush in the architrave.

A chassis, of rigid construction for mounting of equipment, shall be fixed to the architrave or tray.

Each distribution board shall be provided with neutral and earth bars of solid brass or copper with one way for each conductor. Double pinching screws of brass shall be provided per way. Sufficient spare ways shall be provided to accommodate at least 30% expansion.

Each busbar shall be accessible from the front. Large terminals shall be provided on each busbar for the main conductor/s.

Wiring shall be carried out from the sides and in front of the chassis, where possible. Conductors shall be straight, neatly arranged in horizontal and vertical rows and shall be bound together.

Where distribution boards are surface mounted in cupboards specifically provided, conduits entering the boards may be terminated in wiring trays which may be fixed to the top and/or bottom of the boards.

All wiring trays shall be bonded to the distribution board earth bar by means of a copper earth conductor.

Vermin proofing is required for all distribution boards.

As a precondition for completion and hardcover, as part of record information, the contractor shall obtain the workshop drawings from the distribution board manufacturer and issue these to the engineer electronically in CAD (.dwg) and .pdf.

5.7.1.2 KIOSKS

Standard, approved manufacture, SANS approved, and type tested as per SANS code kiosk, complete with doors where specified, shall be used.

Kiosks of 150A and larger shall be certified. Certificates are required with the workshop drawings and again on delivery of the kiosks and for the record/as-built documents/manual. Type tests are not required, unless specifically specified.

Workshop drawings of kiosks must be submitted timeously for comment.

The kiosks shall also comply with the following:

- Manufactured from glass fibre by Golnix.
- Suitable for outdoor use i.e. weather and rust proof and UV-resistant.
- The kiosk shall be prewired in the factory.
- All non-current carrying metal parts and equipment must be connected to the earth bar.
- All metal parts must be treated against corrosion e.g. heavy duty galvanised, etc.
- The kiosk shall be suitable for a 400 V, 3 phase, 4 wire, 50 Hertz system with separate earth.
- The kiosks busbars and equipment shall be suitable for minimum 6kA fault level.
- The equipment in the kiosk shall be surface mounted on a 25 mm thick board on an angle iron frame.
- All equipment shall be labelled with the name of the board(s)/consumers that it supplies.
- All outgoing circuits shall be connected directly to the switchgear by means of bolt type terminals.
- The switchgear terminals shall not be nearer than 200 mm from the cable gland plate.
- The cable gland plate shall consist of a 3mm galvanised steel plate, galvanised after drilling the holes, with the correct number and size gland holes for the cables, with spare holes for future cables.
- The cable gland plate may also be manufactured of 3CR12.
- The cable gland plate may not be painted.
- The kiosk busbars shall be suitable for at least 250A with minimum 6kA fault level.

- The feeder circuit breakers must be similar to Heinemann, curve 1.
- The following name labels, white letters on black, are required.
    - kiosk name
    - circuit breaker names
    - equipment names

- The kiosk shall be fitted with a legend card.
- The kiosk shall be installed on a root type base approximately 75mm to 120mm above finished ground level.
- The top part of the kiosk shall be removable.
- The kiosk must be placed with minimum free spaces to buildings and roads: 600mm.
- All cable ends shall be protected against damp/water by means of Densal tape.
- The kiosk root base shall be filled with sand with a 50mm topping of 10:1 sand cement mixture, after installation of the cables.
- The kiosk shall be lockable by means of padlock.
- The kiosk padlock shall be supplied and installed and two (2) keys per lock shall be handed over to the Employer.
- Padlock master keys: Required
- Danger sign on door: Required
- Door restraining strap: Required
- Earthing cable armour: Required
- Earth at kiosk and earth test: Required

Where an integrated Golnix type plinth is part of the kiosk structure, all the cables to be installed prior to the placing of the kiosk.

- The integrated plinth must be installed to allow 50% of the plinth to be under the ground level.
- A light cement mixture to be be used in the backfill and compaction process.

If the kiosk is not manufactured with a plinth, the contractor to provides details of the plinth and shall be verified by the structural engineer.

- Prior to casting of the plinth, the contractor shall install the required wireways/kickpipes.

5.7.1.3 TELEPHONE, IT/DATA, SECURITY, ETC BOARDS

Telephone, IT/data, security, access control, fire alarm, CCTV, communication, etc boards shall be manufactured to the same standard as for electrical distribution boards, to Telkom requirements, with hinged doors with handles and Telkom approved locking, soft wood backing, interconnection openings between compartments and name labels.

All telephone, data, security, access control, fire alarm, TV, communication, etc. boards and drawboxes larger than 100 x 100 shall be labelled as such.

Locations, sizes, surface/recessed and compartments specified on the drawings.

5.7.2 LABELLING

All labels shall be the permanent type, including the ratings plates and cascading labels, where applicable.

All distribution boards shall be numbered using suitable ivorine or plastic labels. Lettering shall be a minimum of 15mm in height.

All circuit breakers shall be numbered using suitable ivorine or plastic labels. Lettering shall be a minimum of 12mm in height.

A legend card, covered by a removable transparent acrylic plastic (Perspex) or equal panel shall be installed on the inside of the door of the distribution board. The legend card shall depict the number and corresponding description of each circuit. The legend card shall be completed in bold type of 10mm minimum height. Handwritten legend cards are not acceptable.

A duplicate of the legend card shall be provided on project completion, as part of the record/as-built information.

5.7.3 PAINTING

Distribution boards shall be painted using epoxy powder coating. Hammer tone finish is not acceptable.

Unless otherwise specified, colour finishes shall be Electric Orange with fascia's being:

- White for non-essential/normal circuits
- Red for essential/standby power circuits and
- Blue for UPS/isolated circuitry

Touch up paint from the same batch as the original coat shall be provided with each distribution board.

5.7.4 STEEL

All non-galvanised steel shall be thoroughly de-rusted.

Where galvanised steel is specified/used it shall be thoroughly degreased and then treated as follows:

- One (1) coat of calcium plumbate
- One (1) coat of white undercoat
- One (1) coat of gloss enamel, the colour of which will be detailed in the specification

5.7.5 SHORT CIRCUIT CURRENT RATING AND LOADING

The short circuit ratings specified in the drawings' schedules shall apply to the switches and to all other component parts on each distribution board. All components shall withstand, for three seconds, a symmetrical current in RMS values corresponding to the short circuit rating specified.
The maximum continuous working loads which can be carried shall be as specified.

5.7.6 WIRING

Distribution boards must be pre-wired by the distribution board manufacturer prior to delivery to site, unless it is an existing distribution board where alterations are required.

- Bootlace ferrules shall be used on all stranded conductors unless the conductor is crimped with a lug.

Secondary wiring shall consist of suitably rated, high conductivity stranded copper conductors, insulated with PVC in the appropriate phase colours and shall be cleated to approval within the switchboards. All conductors shall be numbered at both ends, in accordance with the markings shown on the schematic and wiring diagrams on the contract and workshop drawings.

The connections from all dual ratio current transformers shall be brought out to approved, easily accessible link boards to facilitate change of ratio and an approved clear engraved plate, showing the ratio, in each position of the links, shall be fixed to the link board.
The secondary wiring earth leads shall be brought to marked, easily accessible links for insulation resistance testing purposes. All secondary fuses shall have approved spring-type fuse holders and cartridge fuses.

5.7.7 PHASE ROTATION

The markings of conductors and terminals of power and secondary circuits shall show the phase sequence.

5.7.8 EARTHING

An approved copper earth bar shall be provided along the entire length of each switchboard, inside the switchboard on top of or near the gland plate, to which each panel of the sheet metal enclosure and each gland earth tag and each cable box armour clamp shall be bonded. The earth bar shall not be less than 25mm x 3mm in section and shall be drilled at each end and provided with size M10 bolts for the attachment of earth conductors entering from the cable trench.

For busbars smaller than 25mm x 3mm, the earth bar shall be at least the size of the busbar.

5.7.9 SPACE RESTRICTIONS

When sizing switchboards, cognizance shall be taken of the sizes of the access routes/openings through which the switchboards must pass and where they will be installed. The contractor must ensure that workshop drawings are checked in accordance with the layout drawings.

- If any conditions on site limit the bringing in and or installation of the distribution board, it remains the responsibility of the contractor to provide such information/detail to the distribution board manufacturer to consider and resolve prior to manufacturing.

No claims for extras in respect of failure by the contractor to comply with the above will be considered/entertained.

5.7.10 COMPONENTS

The components provided in the distribution boards shall meet the requirements of the schedules.

All moulded case circuit breaks shall be equipped with insolating phase barriers.

Fault levels of equipment shall be as appropriate/specified, but in no instance less than 6kA.

5.7.11 BUSBARS AND CONNECTIONS

Busbar and busbar connections and risers shall be insulated and shall conform to the requirements of BS EN 61439. Clearances from phase to earth and between phases shall be in accordance with BS EN 61439 and shall not be less than 19mm.

Busbar support insulators shall be suitable for use under damp conditions, made of porcelain, or synthetic resin bonded materials of a non-moisture absorbing type, which provide a minimum creepage distance of 25mm to earth and 38mm between phases.

All connections from busbars shall be supported on insulators to provide the same spacing between phases and to earth as the busbars, up to the point of entry into HRC fuse or circuit breaker. This applies also to connections for voltmeters, kWh meters and control circuit supplies.

5.7.12 PVC INSULATED CABLES

Glands for PVC insulated cables shall be suitable for general purpose grade cables manufactured to SANS 1411-1 of the sizes and types specified. The glands shall be of approved type, machined from non-corrodible material and shall incorporate approved sealing washers, shrouds, bushes, locknuts, earthing tags and compression nipples and one type of wire armour clamps and shall be water-tight, if specified or dictated by the installation circumstances.

5.7.13 DOORS, FACEPLATES, AND INNER PANELS

All doors shall have door handles with locks and concealed hinges and hinges flush with the architrave of the distribution board. No doors, faceplate and/or inner panels may be removable: all must be equipped with hinges.

All hanged doors and panels shall be earthed by means of braided copper or pigtail style strap.

5.7.14 DISTRIBUTION BLOCKS

The use of distribution blocks is not permitted without prior written request to the engineer and after formal written approval is granted.

5.7.15 CASCADING

In circumstances where cascading is used to reduce the prospective short circuit current, the contractor shall provide documentation confirming that cascading is achieved. No circuit breaker may have a prospective short circuit current of less than 6kA.

5.7.16 DRAWINGS

The contractor shall submit the following drawings as soon as reasonably possible to minimize any delay in the ordering/manufacturing process of the distribution boards/kiosks,

- General arrangement drawings showing the overall dimensions of the boards/kiosks and switchgear, the space required for the opening of doors, lids and withdrawal of circuit breakers and sizes and positions of holding down bolts related to the cable trench. Any projection affecting the passage of boards through doors shall be shown
- Sectional drawings showing positions of switchgear, components, busbars and riser connections, contactors, and cable end boxes/plates.
- Schematic diagrams on which all terminals and wires are shown and numbered to correspond with the circuits/equipment, and in which ac and dc circuits are shown separately. The diagram shall show the internal connections inside all apparatus such as for kWh meters and relays.
- Prior to the drawings being issued to the engineer for review, the contractor shall preview the drawings and provide comments where applicable,

The engineer will also scrutinize the workshop drawings and provide comments where applicable. If any of the engineer's comments provided limits and/or restricts the contractor from ordering and/or subsequently installing the distribution board(s), the engineer must be notified in writing to scrutinize and provide timeous feedback to the contractor, as the distribution board, its compliance to SANS 10142 and approval thereof are the responsibility of the contractor.

The contractor signs the electrical certificate of compliance and thus is the responsible person for the entire installation including the approval of the workshop drawings.

5.7.17 INSPECTION OF DISTRIBUTION BOARDS/KIOSKS

Prior to delivery to site of the distribution boards, the engineer must be invited to, and may request to inspect the distribution board at the manufacturer's premises. At least three days prior notice shall be provided by the contractor.

5.7.18 TESTING OF DISTRIBUTION BOARDS/KIOSKS

All distribution boards delivered to site must be accompanied by a Type or Semi-type tested certificate and factory acceptance certificate.

5.8 EARTHING AND BONDING

Main earth, earthing and bonding of electrical systems and equipment and structure by contractor.

Earthing and bonding shall be carried out in accordance with the Wiring Code and as specified. All cables and circuits wiring shall have a separate earth conductor: Refer DB-SCHEMATIC and DB-SYMBOLS drawings.

A common earth may be installed in cable ducts, cable trays, wiring channels, power skirtings and floor ducts T-ing off from this to DB's, outlets, etc. when more than one cable/circuit are drawn in together.

D-Pin socket outlets circuits are "dedicated clean power" circuits for computers: no earth leakage protection and separate PVC insulated earth conductor. The entire installation shall be properly and effectively earthed and bonded as prescribed in the SABS/SANS Code of Practice for wiring of Premises, Code SANS 10142. Self-tapping screws are not acceptable as means of securing earth conductors. All equipment shall be earthed at the earthbars which in turn shall be connected to the main earth system.

Cable armouring's shall be earthed via cable glands. All luminaires shall be earthed. Earth conductors shall loop into the kiosks and shall be connected in such a way that disconnection from the earth busbar or terminal does not break the continuity of the earth conductor.

Jointing and T-off's of lengths of earth conductor shall be performed by means of suitable line taps Cadwelding or Silbralloy welding. An overlap of minimum three times the width of the conductor shall be used.

Where lugs are used for terminating stranded earth conductors, the lugs shall be crimped with an approved type of crimping tool. The lug stud size shall correspond to the fixing bolt and the lug shall be so positioned that the full contact area of the lug is utilised.

All bolts and screws used for the earthing shall be high tensile steel, brass or cadmium plated mild steel bolts. The cable armour shall be bonded to earth at all terminations of cables.

5.9 TRENCHES

5.9.1 TRENCHING

Unless specifically specified otherwise elsewhere, all low voltage cable trenches shall be at least 450mm wide and 600mm deep, and all medium voltage cable trenches shall be at least 450mm wide and 1000mm deep.

Prior to excavation of trenching, the cable routes shall be confirmed on site if, during the excavations of the trenches the contractor encounters hard rock, the engineer shall be informed in writing to conduct an inspection and issue formal feedback. If hard rock is identified/confirmed the contractor will be compensated from an extra over allowance in the bills of quantities.

The engineer shall provide the contractor with the relevant construction drawings and the contractor shall ensure that the installation of all ducts is carried out in accordance with these drawings and the relevant conditions stipulated by the Authorities. The contractor shall carefully examine the drawings and resolve any inaccuracies, discrepancies and/or inconsistencies with the engineer before commencing the necessary work. These drawings shall be updated by the contractor to record the exact/as-built positions of installations on completion of the works and shall be returned/submitted to the engineer.

Should the positions of existing services be shown on the construction drawings as issued by the engineer, the accuracy thereof is not guaranteed. The contractor shall verify positions of existing services and any discrepancy in the information provided shall not be accepted as the basis of a claim. Ducts shall be of the type and manufacture as specified and shall comply with the following SANS Codes:

- SANS 819, Fibre-cement ducts and accessories
- SANS 791, UPVC ducts and accessories

The contractor remains solely responsible for contacting and liaising/cooperating with the relevant Authorities, whenever any work on or in the vicinity of existing services is required. The contractor is responsible to lay the ducts in accordance with the technical specifications of the relevant Authorities.

Trenches for the cable ducts shall generally be excavated in a straight line between manholes/end points in accordance with the relevant construction drawings, except where obstructions or other conditions require deviations/bends, as permitted, and approved by the engineer.

The contractor shall ensure that a minimum period of seven (7) clear days' notice is given to any Authority which is responsible for any aspects of the cable laying or duct installation (if this responsibility is not that of the contractor as may be specified elsewhere in the document).

5.9.2 BACKFILLING

Backfilling shall be compacted in layers of not more than 200mm at a time. Filling around and over cables and ducts to a depth of ± 50mm shall be carefully carried out with fine materials and the contractor shall ensure that the cables and ducts are not damaged in any way by such backfilling and compaction.

Where, in the opinion of the engineer, there is no excavated material suitable for use (even after screening) as bedding and the first layer of backfill, the contractor shall obtain suitable material and deliver to site. The onus shall be on the contractor to prove to the satisfaction of the engineer the actual need for, as well as quantities necessary and used.

All surplus soil from any excavation that cannot, in the opinion of the engineer, be spread evenly over the surface, shall be removed from site at no extra cost to the employer.

Warning tape shall be placed over/above all cables with a 200mm clearance above the top of the cables to the warning tape.

5.10 CABLES

5.10.1 GENERAL

600/1000Volt PVC SWA PVC Cable shall comply with SANS 1411. Borehole/Submersible cables shall comply with SANS 1574

The conductors shall be stranded and of high conductivity copper. Aluminium conductor cables shall only be used where specified and/or specifically approved by the engineer in writing.

Prior to excavation for cables, the cable routes shall be confirmed on site and these shall be known/confirmed prior to cutting of any cables.

All wire ends of stranded conductors shall be boot laced ferruled unless the conductor is crimped with a lug. This also applies to distribution boards and to all power and lighting outlets. Where exposed cables may be subject to mechanical damage, they must be protected in galvanised kickpipe.

5.10.2 INSTALLATION

Glands shall be suitable for PVC SWA general purpose 600/1000 Volt cables. Glands shall be correctly sized, as specified by the manufacturer, to fit the specified cable types and sizes.

The glands shall be Pratley, or equivalent standard, and shall include waterproof shrouds. The shrouds shall be made of non-deteriorating neoprene or synthetic rubber and shall be resistant to water, oil and sunlight. The glands shall fit tightly around the gland and cable.

Cable splicing or jointing is not recommended and shall be approved by the engineer. Where necessary, splicing/cable jointing kits shall be of the epoxy - resin moulded type and shall be of Scotch-Guard, 3M or approved similar and equal manufacture. Splicing/cable jointing shall be carried out strictly in accordance with the manufacturer's instructions.

Conductors shall be terminated using crimped or soldered lugs, unless otherwise approved. The earth terminal shall be connected to a separate "way" on the earth bar using a suitable earth conductor/bonding strip and crimping lug or bootleg ferrule.

5.10.3 CABLE SUPPORT AND FIXING

Where cables are surface mounted, they shall be run on suitably sized heavy or medium duty galvanised cable tray or cable ladder, depending on the weight of the cable, or as specified on P2000 batons at 500mm intervals. All the necessary bends, splices, reducers, fixings, and fittings required to neatly complete the work shall be provided. Purpose-made cover plates shall be fitted where cables run on the floor.

Where cables are run in sleeves, the sleeve ends shall be sealed with an impervious foam once the cables have been installed. Spare/Unused duct/sleeve and shall also be sealed.

Cables shall be properly fixed onto the cable ladder with a distance/spacing of at least one cable diameter between them. Sundry control cables shall also be fixed to the cable ladder or run-in galvanised conduits. Cables shall be run in galvanised conduits from sliprings to motors on bridges.

5.10.4 CABLE IN AND/OR ON WIREWAYS

Cables laid in cable trays or ladder racks shall be secured with approved locking cable ties or pre-galvanised steel strapping with locking clips at intervals not exceeding 300mm for vertical and horizontal hanging and 500mm for horizontal lay-in mounting.

Wire binders will not be permitted/accepted. Cables shall be installed and strapped/secured such that, in the event of a cable requiring replacement, the remainder of the cables are not disturbed. Where practical, cables shall be laid at least one (1) cable diameter away from each other to provide a suitable air gap.

Where cable ties are used on exterior installations, only ultra-violet treated/resistant exterior ties shall be used.

Cables rising vertically and fixed to concrete or masonry shall be secured using approved, and correctly sized cable clamps located into cleats of galvanised "Unistrut" or approved equal.

Cleats shall be fixed at intervals not exceeding:

- Cable diameter exceeding 35mm - 1 000mm
- Cable diameter less than 35mm - 500mm

5.10.5 CABLE MARKERS

Cable markers shall consist of a concrete block in the shape of a truncated pyramid, approximately 300mm (deep) x 150mm x 150mm at the top and 230mm x 230mm at the bottom. An Aluminium indicator plate shall be cast onto the top of the marker with the following stamped inscriptions:

‘’ CABLE/CABLE SLEEVES”
“ INDICATE NUMBER AND SIZE”

Markers for cable joints shall have the following stamped inscription on the indicator plate:

“CABLE JOINT No……..”

Markers shall be placed at regular intervals along the cable routes, approximately fifteen (15) meters apart and also at all joints, changes in direction and road crossings with arrows indicating route/direction of cable.

A sample of the proposed markers shall be submitted to the Engineer for approval before they are manufactured.

The as-built positions of the cable markers shall be recorded on the record drawings submitted to the engineer.

5.10.6 WIRING IN CONDUIT

Where circuits are wired for power and lighting, all cables/wiring/conductors shall be in conduit unless in a main run wireways and power/or skirting. No cables may be exposed, even in ceiling.

The only exception to this is the supply cable/lead to luminaires fed from a 5A socket outlet.

5.11 WIREWAYS

5.11.1 GENERAL

Unless otherwise specified elsewhere in this document, wiring channels, trunking and covers shall be equivalent to Cabstrut support systems.

5.11.2 TRUNKING

Trunking sizes shall be as specified on the drawings, or as approved. Trunkings shall be of galvanized steel, mechanically continuous throughout and, covers shall be PVC.

PVC trunking is only permissible where specified and with fixing/support intervals per SANS
The contractor shall plan and co-ordinate trunking layouts in conjunction with the other trades and no work shall commence until positions are coordinated and agreed with the main contractor.

Trunking shall be securely fixed with brackets at regular intervals as specified by the manufacturer, with additional fixings provided at bends, tees, and intersections.

Splices shall be adequately fixed using manufacturer’s recommended methods/accessories.

Where trunking is damaged or cut, filed or shaped, the affected portion shall be cleaned and touched up with cold galvanising paint.

5.11.3 CABLE TRAY

Cable trays shall be of perforated mild steel in standard sections and lengths, the width not being less than 110mm wide and the flange not less than 12mm. The metal thickness shall not be less than 2.5mm.

Cable trays shall be mechanically continuous throughout and shall be hot dipped galvanised to SANS 121 and continuity of bonding shall be ensured.

The design and construction of the cable trays shall be such that a deflection on a two (2) meter span shall not exceed 7mm in mid - span under a mid - span load of 100kg.

Cable tray accessories shall be compatible with the cable trays and shall be used for all bends, tees and reducers, supports and fixings.

The contractor shall plan and coordinate the cable tray layout/s in conjunction with the other trades and no work shall commence until the contractor has verified that the trunking will not clash with the services of the other trades and agreed with the main contractor.

Cable trays shall be securely fixed with brackets at not more than 1500mm intervals, with additional fixings at bends, tees, and intersections.

Mushroom headed corrosion resistant bolts and nuts shall be used on all joints and for fixings to brackets. There shall be at least two bolts per joint.

Where a tray is damaged or cut, filed or shaped, the affected area shall be cleaned and painted with cold galvanising paint.

5.11.4 WIRING

Circuit wiring to the switched socket outlets must only be drawn into the electrical compartment, i.e., the top or centre compartment of the channel/trunking/power skirting (but NOT the bottom channel unless so approved).

Under no circumstances shall wiring joints be made in the channel/trunking/power skirting other than at junction boxes and inside pedestals.

It is essential that the contractor adheres to the rotation of telephone, electrical intercom and IT/Data compartments, and maintains their integrity.

When wiring the channel, the contractor shall allow slack/loops wiring for the (future) installation of a switched socket outlet pedestal at every 1500mm module (unless otherwise specified), irrespective of whether a switched outlet socket pedestal is currently specified.

In order to make these provisions, the covers over the channel openings (electrical compartment only) must be removed during wiring and a loop of sufficient length to connect directly onto the terminals of the switched socket outlet must be left in the wiring and pushed back into the channel.

5.12 CONDUITS

5.12.1 GENERAL

Conduit shall be galvanised steel conduit to SANS 60614 or shall be PVC conduit to SANS 950, as specified. No conduit smaller than 20mm overall diameter shall be used. No horizontal chasing longer than 400mm shall be allowed.

IT/Computers, Telephone and Electronic Services conduits and cables/conductors shall not be run parallel and directly adjacent to electrical conduits or cables. A clear gap of 200mm minimum shall be left between these and electrical conduits and cables/conductors where these are installed near or parallel to each other. No conduit smaller than 25mm overall diameter shall be used for the above services.

5.12.2 CONSTRUCTION

Heavy duty galvanised (threadless) conduit shall be used:

- Where conduit is run exposed on external wall surfaces or rises free from floors
- Where exposed to the weather, and
- In return air plenums of air conditioning plant
- Where specified

All flexible conduit lengths shall be of galvanised construction with a PVC sheath, commonly known as “Copex”.

PVC conduit shall be used in ceiling spaces and recessed in walls or cast in concrete.

- All conduits shall as far as possible be recessed, unless otherwise specified or approved.

The contractor shall apply plaster to ensure conduits are firmly mounted/installed where chased in.

5.12.3 INSTALLATION

Conduit must butt firmly together at joints and hard against the shoulders of conduit box spouts and other conduit fittings. The ends of cut lengths must be beveled internally and all burrs removed with a burring reamer.

All conduits shall be installed in straight lines and mounted at right angles to building elements
Except where otherwise specified all conduits shall be concealed by laying in concrete, chasing into walls or running in roof spaces. The contractor shall be responsible for chasing for the conduits and subsequent plaster to ensure conduits are firmly mounted/installed. Where conduits are chased in, the contractor shall fix the conduit in place and allow “chicken mesh” to cover the conduits.

Should already plastered walls be chased without permission, the repair cost will be for the account of the contractor.

Drops to wall outlets shall be from ceiling level, unless otherwise specified. Conduits shall be looped from point to point and no draw-in boxes which are not in themselves outlets shall be permitted, unless specifically approved.

Draw-in boxes shall be installed where it is necessary to draw cables round more than two 90 degrees bends or where conduit runs exceed twenty (20) meters. Draw-in boxes in ceilings shall have flat metal covers and counter sunk screws so as to be flush with the ceiling. Cover plates shall overlap boxes by 12mm on all sides and be painted to match surrounding finishes.

In roof spaces conduits shall be run along or at right angles to the direction of the roof trusses.

Conduits running parallel to ceiling joists or tie beams shall be fixed to the sides and not on the top of such timbers. In roof spaces and on surfaces installations, conduit runs, where possible, shall be grouped together and conduits shall be kept at saddle distances apart and fixed with saddles at spacing not exceeding 2000mm.

In surface installations, conduit shall be supported on spacer saddles to approximately 5mm clearance behind the conduit and shall be fixed at spacings not exceeding 1500mm. Except for surface installations, outlet boxes for ceiling fittings shall be finished flush with the underside of the ceiling.

Where conduits enter boards, trays and outlet boxes, couplings and male bushes shall be used. Conduits laid in concrete shall be laid above the reinforcing bars, where possible, and shall be tied to the bars.

Conduits chased into brick walls shall be secured at spacings not exceeding 2m. No conduits shall be installed within 75mm of hot water pipes or appliances.

Galvanised steel drawwires for use by others shall be provided by the contractor in each conduit in which permanent wiring is not installed.

Conduits serving outlets in cold rooms shall be run outside these rooms and enter only at the service points.

Surface mounted conduits shall be installed parallel with or at right angles to the building walls/elements, and shall be supported adequately by saddles, or by other approved methods. Conduits in suspended ceilings shall be located, when practicable, between the concrete slab and the ceiling and shall be supported from/fixed to the concrete slab.

No wiring shall be carried out until the installation wireways/conduits/etc have been installed and fixed in position.

No conductors/wiring shall be drawn in/through before the conduit has been thoroughly cleared of all debris and moisture.

Unused switch or plug outlet boxes shall be closed/covered with blank metal cover plates. Where conduits cross expansion joints, approved type draw boxes shall be provided.

5.13 CONDUIT ACCESSORIES

5.13.1 GENERAL

The locations of all specified outlets boxes, switched socket outlets, switches, etc shall be confirmed on site. Conduit accessories installed in walls shall be flush mounted, with no more than 30mm offset into the wall after plaster finishing.

5.13.2 CONSTRUCTION

Outlet boxes, junction boxes, conduit hangers, rods, inserts, and supports shall be either hot dip galvanised or finished to match surrounding equipment, conduit and trunking.

The height of outlets from finished floor level to underside of outlet box shall generally be as below to the nearest brick course.

- Consistency of height shall be maintained throughout the installation.
- Wall switches, general - 1100 mm
- Socket outlets, general - 300 mm
- Telephone outlets, general - 300 mm
- IT outlets, general - 300 mm

Exceptions are as follows:

- Where outlets would occur in moulding, break in wall surface or unsuitable location in tile, wood, face brick or similar finish
- In removable metal partitions
- Socket outlets in kitchens shall be mounted at a minimum height of 200mm from the worktop or where the worktop height is not known, at a minimum height of 1100mm from finished floor level
- As instructed otherwise.

5.14 POWERSKIRTING

The make and model of the power skirting shall be as specified or approved, with the finish/colour selected from the manufacturer's standard range.

- Submit colour samples selection

Systems shall comprise a trough/wiring channels and cover of PVC with minimum mass of three (3) kilograms per 3000mm length.

Separate compartments shall be provided for power, data and telecommunications. (minimum two (2) main channels). The power channel shall be the upper channel (NOT the bottom one). Separate pre-punched covers shall be provided for each of the services described in the specification and/or shown on the drawings.

Covers shall be provided in modular lengths to avoid unnecessary cutting and random lengths.
Power skirting shall be fixed to the perimeter wall, partition, or other medium with inserts and screws, or with expanding spring toggle screws into dry wall panels, at centres not exceeding 1250mm. Skirting shall be set level.

Rear entry to the power skirting shall be by means of rear entry modules or cut-outs suitably sized for 100mm x 100mm or 100mm x 50mm conduit boxes.

Switching devices shall be provided with suitable mounting brackets which clamp or screw into the flanges of the relevant power compartment.

Bottom entry boxes set in the screed or cast in the concrete shall be set with the front edge of the box behind the front edge of the power skirting, and similarly, back entry boxes shall also fit behind the power skirting.

All metal power skirting runs shall be continuously earthed. Each section shall be fixed to the other using bolted brackets.

Full-length common earth conductors shall be installed in the powerskirting and earthing of outlets shall be T'd-off with an own earth conductor; 4mm² BCE for normal power and separate 4mm² insulated for dedicated clean power circuits.
Every length/butt/joint in metal skirting/trunking shall be bonded/bridged together with minimum 4mm² earth conductor screwed/bolted to the metal and every 4th length/butt/joint shall be bonded to the common earth conductor in the skirting/trunking.

5.15 SMALL POWER AND LIGHTING

5.15.1 LUMINAIRES

All luminaires must be supplied, installed, connected, and commissioned complete with lamps, poles and accessories per the lighting schedules and layout drawings, and positions scaled from the drawings unless dimensions or grids are specified.

Flood, area, street, exterior and feature lighting shall be subjected to night tests in the presence of the Employer/Engineer to ensure that the settings, coverage, etc. are adequate and acceptable emergency lighting shall be fed via a 3000VA pure sine Wave invertor with enough battery capacity to run all the emergency lights for three (3) hours and maximum drain on the batteries of not more than 50% during the three (3) hours.

Where luminaires cannot be installed per the lighting layout drawings due to beams, close proximity to walls, other services located in the same place, etc., the engineer shall be informed in writing immediately to review and make changes, if required.

No through-luminaire wiring is allowed unless silicone wiring is used and will be for the contractors account if silicon wiring is used.

The installation cost for luminaires shall be inclusive of holes to be cut and/or mounting/equipment/ materials.

Unused light outlet points shall be blanked off with the wiring terminated in a connector block. The luminaires shall be per the Schedule of Luminaires issued or alternative similar and equivalent product.as approved by the engineer. The sample procedure shall be followed for approval of alternative equipment/luminaires.

5.15.2 LIGHT SWITCHES

Light switches shall be single pole with a minimum voltage rating of 240V and current rating of 16A and bear the SABS mark.

5.15.3 MOTION DETECTORS AND PHOTOCELLS

The motion detectors are referenced/specified in the Schedule of Luminaires. Unused light outlet points shall be blanked off with the wiring terminated in a connector clock.

5.15.4 BELLPUSH

Bell press switches shall have a minimum voltage rating of 240V even if used for low voltage installations.

5.15.5 SWITCHED SOCKET OUTLETS

Switched socket outlets shall have a minimum voltage rating of 240V and current rating of 16A, shall comply with SANS 164 and bear the SABS mark.

5.15.6 ISOLATORS

Isolators installed/mounted inside buildings shall be of the double or triple pole light switch type. Any isolators mounted/installed on the outside of the building shall be the lockable rotary type and weatherproof and UV resistant.

5.15.7 OUTLET BOXES, DRAW BOXES AND COVER PLATES

All outlet boxes, draw boxes and inspection boxes shall match the conduits installed and comply with the requirements of SABS 162 and shall be provided with metal cover plates and rust-free screws. All cover plates shall be White to SANS 1091.

Telephone and IT outlets shall be provided with coverplates and cradles, which can accommodate a RJ11 and RJ45 outlet.

Install blank cover plates on the unused electrical drawboxes and outlets and on telephone, IT/Computers, security, access control, fire alarm, CATV, CCTV, communication and other electronic services outlets and drawboxes. Use oversize coverplates on all round outlet boxes.

All conduits in ceiling to be surface mounted, properly fixed to the underside of the slab/structure.

- **In wet/damp areas: Screws on faceplates of switch sockets, outlets, switches, etc shall be plastic with plastic covers (or stainless steel but not chromed steel).**

5.15.8 PLANTING OF POLES AND/OR BOLLARDS

Prior to any excavating and/or digging holes for poles, the pole positioned will be pegged on site and the engineer notified to inspect and approve the position of the poles.

Planting of poles will be done to the manufacturer specifications. If no manufactures specification is available, the contractor shall plant the pole at least one sixth of the pole length underground.

The contractor shall ensure that the backfill to the pole holes are compacted. A sand and cement mixture shall be utilised to add additional stability.

5.16 INSTALLATION AND CONNECTION OF ELECTRICAL APPLIANCES/EQUIPMENT

Electric Water Heaters: supplied and installed by others, unless otherwise specified. The contractor shall be responsible for the final connections to the water heater terminals.

Electric Cooking Appliances: supplied and installed by others, unless otherwise specified. The contractor shall be responsible for the final connections to the appliances.

Machine or Motor Outlet Points: Supplied and installed by others, unless otherwise specified.

Air-conditioning Units: supplied and installed by others, unless otherwise specified. The contractor shall be responsible for the final connections to the appliances.

Extract Fans: supplied and installed by others, unless otherwise specified. The contractor shall be responsible for the final connections to the appliances.

Security: supplied and installed by others, unless otherwise specified. The contractor shall be responsible for the final connections of the power supply.

Fire detection and alarm: supplied and installed by others, unless otherwise specified. The contractor shall be responsible for the final connections of the power supply.

Telephones/PABX: supplied and installed by others. The contractor shall be responsible for pointing out conduit routes.

CCTV: supplied and installed by others. The contractor shall be responsible for pointing out conduit routes.

Communication/Intercom: supplied and installed by others. The contractor shall be responsible for pointing out conduit routes.

IT/Computers: supplied and installed by others. The contractor shall be responsible for pointing out conduit routes.

5.17 PLANT/FIELD-MOUNTED CONTROL AND SWITCHING EQUIPMENT

Plant/Field-mounted equipment shall be mounted:

- As recommended by the Supplier, and/or
- As specified, and/or
- As approved by the Engineer

Equipment housings, mounting and fixing materials shall be selected for the environment they will be required to operate in. All circuits, equipment and mountings shall be earthed.

All equipment shall be identified by means of labels. The contractor shall submit workshop drawings of mounting details for scrutiny by the Engineer.

5.18 SAMPLES

The contractor shall free issue, at no cost to the Employer as reasonably possible, samples of all electrical and electronic plant and equipment, and samples of colours, specified to be used on the project.

Once the Employer and the Architect have reviewed the samples for approvals, the samples will be returned to the contractor.

All equipment used shall bear the SABS mark and supporting documentation shall be made available, as required and/or requested.

Where alternative equipment is offered, the contractor shall submit samples for approval together with the following:

- Provide samples and documentation of plant/equipment/materials per the tender requirements AND of the alternative equipment offered.
- Provide the cost savings for each item and for the total installation.
- Demonstrate that the alternative equipment is of similar and equivalent or better quality than the equipment specified in the tender.

Where equivalent equipment is offered, the following information is also required to be issued to the engineer for review/consideration:

- Demonstrate that the offered equivalent equipment conforms to the relevant SANS documents and is of equivalent standard and quality and application.
- Where computer aided software/programs, such as Relux (for light level calculations) are required, the .rdf file of the project shall be issued to the engineer, including the lighting reports.

Where alternative and/or equivalent equipment are proposed, no extension of time will be granted for the review of the equipment by the engineer, ordering and procurement, as well as the installation of the equipment.

No ordering of alternative and/or equivalent equipment shall be done/finalised without the formal approval for the engineer.

- The contractor shall plan/afford enough time for the engineer to review and provide feedback for review/consideration of alternative and/or equivalent equipment offered.

The Engineer's scrutiny of shop drawings or samples shall not relieve the contractor of responsibility for any deviation from the requirements of this contract, unless the contractor has informed the Engineer in writing of such deviations at the time of submission of shop drawings or samples and the Engineer has given written approval for the specific deviation, nor shall this relieve the contractor of responsibility for errors or omissions in the shop drawings or samples.

5.19 LIGHTING REPORT

The contractor shall obtain a luminaire report from the supplier of the luminaires on the project. On completion or at any stage during the project, when power is supplied to luminaires in that area/room, the supplier of the luminaires shall measure the light levels in accordance with the method(s) provided in SANS 10114. The measurements shall be done with an instrument that has a calibration certificate no older than twelve (12) months.

The luminaire report shall indicate the average light levels, the minimum maintained lux level for each area/operation and shall be issued as part of the record information and user manual to the engineer

5.20 TESTING, INSPECTION AND TRAINING

The contractor shall provide all labour, tools, and material required for inspections, testing and recording.

The contractor shall ensure that all installed equipment is commissioned and tested prior to practical completion and handover. The engineer shall be informed when testing will be done and for which areas and equipment.

The Contractor shall assist the Employer/ Engineer during any test carried out and must supply and operate/handle equipment, tools, instruments, and consumables for testing purposes.

All labour, power, fuel, dummy and test loads and all instruments and appliances that may be required for the tests and commissioning, shall be provided by the contractor.

The contractor shall provide dates for Employer/User training two weeks in advance to allow enough time for the engineer and Employer representative to arrange to attend the training.

Records shall be kept of all installation tests done, as well as of the training done and a signed attendance register of all who attended the training. and this shall be included in the manuals.

5.21 CERTIFICATE OF COMPLIANCE

The contractor timeously inspect/test and shall issue complete/valid certificates of compliance for the electrical installations, on completion of the works.

The installation shall not be deemed completed and ready for handover unless the certificates of compliance have been issued.

All electrical certificates of compliance shall be completed in accordance with the Electrical Installations Regulations of 2012 and the Test Report in accordance with SANS 10142.

5.22 MANUALS

5.22.1 GENERAL

The Contractor shall on completion, prior to handover, handover three (3) hardcopy/printed sets, and one electronic copy/set, of operating and maintenance manuals to the engineer.

The purpose of the manuals is to guide and assist the Owner/User/operator of the facility with operation/use, fault finding and maintenance.

Documentation shall include, but not limited to the following:

- Technical details and data sheet of the equipment used/installed.
- Maintenance requirements and manufacturer's documentation.
- List of manufacturers including contact details.
- Use and operations instructions.
- Record information and drawings including as-built marked-up cable routes and duplicates of distribution board legend cards.
- Factory acceptance tests certificates.
- Site test reports, including CoC's
- Certificates of compliance.
- Warrantees, guarantee periods

The contractor shall submit a draft operating and maintenance manual for review by the engineer prior to the submission of the final (updated) document (3x hardcopy/one electronic) which the engineer will issue to the Employer.

5.22.2 PREPARATION OF MANUALS

The manuals shall be prepared within the contract period and shall be custom for/particular to the project. All charges that may be required by the manufacturers, suppliers and/or license holders for the provision of information and literature shall be included in the contract price.
The manuals shall be arranged with an index and referencing system. A matching flysheet will specify the names, addresses and contact details of the principals involved on the project.

5.22.3 CONTENTS OF OPERATION AND MAINTENANCE MANUALS

The format of the manual shall be in accordance with the following sections, after the preface and index.

5.22.3.1 SECTION 1

This section shall comprise the introduction, abbreviations and any advice/qualifications/warnings that may be required by the Occupational Health and Safety Act, Local Authorities and other such bodies.

5.22.3.2 SECTION 2

A full description of each installation section, together with the main plant/system components and locations, plus the mode of operation of automatic control systems associated with such system, shall be reflected in this section.

5.22.3.3 SECTION 3

This section shall comprise the complete plant technical data of each item of equipment (e.g. manufacturer’s names and addresses, types and sizes of units, serial numbers, bearing, pulleys and belt details, unit performance and duty details.)

This information shall be derived from a site inspection of identification plates, together with information obtained from the manufacturers.

5.22.3.4 SECTION 4

This section shall describe in detail the operating procedures necessary for normal use, e.g. starting up, running and shutting down each individual system. This shall include the control panel, starter and selection facilities together with any alarm and safety interlocks as identified on the control panels.

5.22.3.5 SECTION 5

This section shall comprise the maintenance operations/duties to be undertaken on a daily, weekly, monthly, yearly, etc. basis for each item of plant/equipment. The preparation of this section shall be carried out by obtaining from the manufacturer, advice and recommendations for lubrication, adjustment and routine maintenance.

5.22.3.6 SECTION 6

This section shall comprise the emergency procedures to be adopted/implemented by personnel engaged on the operation and maintenance of the mechanical and electrical services, with respect to fire, first aid, general failures to water and electrical systems, gas lines, chiller refrigerant pipework, and call-out procedures for maintenance personnel during normal working hours, as well as after hours.

5.22.3.7 SECTION 7

A recommended action on plant malfunction shall be detailed in this section. This is to assist both the user and maintenance engineer in the event of a fault developing in a system, by indicating the nature of the fault and the recommended fault finding and safety/precautionary action and procedures.

5.22.3.8 SECTION 8

This section shall comprise a list of recommended spares and lubricants. The preparation of this section shall be carried out by obtaining and including the manufacturer's recommendations and also by incorporating the Employer's/User's requirements regarding spares.

5.22.3.9 SECTION 9

A schedule of the records, or record drawings, together with reduced copies (A4 size) of the record drawings, inserted in numerical order in this section.

5.22.3.10 SECTION 10

This section shall comprise the certificates of compliance, warrantees and guarantees, test certificates and commissioning reports. It shall also give the manufacturer's list of (or their local representatives) names, addresses and telephone numbers.

5.22.4 PRINTED AND ELECTRONIC INFORMATION

In addition to the hard copies/printed record information and drawings required for the manuals, one electronic set of all information and drawings shall be provided within the manuals in the form of a USB memory stick with word, pdf, .dwg and .rvt document and drawing files.

C5 ANNEXURES

Annexure A	Schedule of Luminaires
Annexure B	Fire Detection

ANNEXURE

SCHEDULE OF LUMINAIRES

TYPE	PICTURE	DESCRIPTION & FEATURES	IDENTIFICATION
A2		Recessed mounted 600x600 luminaire complete with three-meter cabtyre lead and five-amp plug. High colour rendering index CRI > 80. Colour temperature 4000K. Small colour tolerance - MacAdam 3. Tridonic LED module and driver. Rolled mild steel body with a matt white epoxy powder coated finish. Rolled mild steel back reflectors with a matt white epoxy powder coated finish. High transmission optic hides the LEDs. Minimum of five-year warrant. LED driver average rated life of minimum 100 000 hours and LED life of minimum 60 000 hours.	LASCON RCM-34W
V2		Surface mounted 1200mm x 100mm LED luminaire Complete with mounting accessories. High colour rendering index CRI > 80. Colour temperature 4000K (3000K and 5000K on request. small colour tolerance - MacAdam 3. Tridonic LED module and driver. Self-extinguishing polycarbonate body. UV stabilised, self-extinguishing polycarbonate diffuser with photoengraved interior and smooth outer surface. Anti-tamper polycarbonate snap-lock latches (stainless steel on request). Hinge-able gear tray. Minimum of five-year warrant. LED driver average rated life of minimum 100 000 hours and LED life of minimum 60 000 hours.	LASCON C10-HE-34W
D2		Recessed mounted luminaire with 80mm ceiling cutout. High colour rendering index CRI > 80. Colour temperature 4000K and 3000K available. Tridonic COB and driver. Minimum of five-year warrant. LED driver average rated life of minimum 50 000 hours and LED life of minimum 50 000 hours.	LASCON FUT1-11W
E1		Surface mounted emergency exit luminaire with two-hour emergency lighting duration completed with test button and complying to relative SANS documentation. Minimum of two-year warrant. LED life of minimum 60 000 hours.	LASCON E10-14W-EMG
F3		Weatherproof (IP65) surface mounted luminaire. High colour rendering index CRI > 80. Colour temperature 4000K. Vossloh Schwabe main voltage LED module and driver. LM6 marine grade aluminium. Opal polycarbonate diffuser. 316 stainless steel screws with heli-coils. Chemically treated and epoxy powder coated. Five-year anti-corrosion warranty. Minimum of five-year warrant. LED driver average rated life of minimum 50 000 hours and LED life of minimum 50 000 hours.	LASCON L12-50W

ANNEXURE

FIRE DETECTION SYSTEM

PROJECT SPECIFIC SPECIFICATION – FIRE DETECTION SYSTEM

1. GENERAL

This document sets out the minimum requirements for the fire detection system. The fire detection contractor shall submit a detailed project plan that shall describe in detail how the project shall be approach, from inception to finalisation.

The plan must include at a minimum the following information:

- Project staging
- Project management
- Equipment schedules
- Installation timelines
- Other trade requirements
- Final acceptance testing
- Personnel resumes
- Progress report sample

All equipment and components shall be installed in compliance with each manufacturer's recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc. before beginning system installation. Refer to the manufacturer’s riser/connection diagram and details for all specific system installation/termination/wiring data.

The fire detection system shall include all materials, equipment and wiring required to install the complete fire detection and alarm system. The fire detection system shall include but not be limited to one or more control panels, repeater panels, and sensors, call points, audible and visual alarm indicating devices and relays.

The fire detection system may consist of a network of fire detection control panels with associated field devices. The fire detection system shall be distributed and modular in design with software configuration options to ensure flexibility and reliability. The ability to quickly, easily and economically reconfigure and adapt the system to ever changing site requirements is essential.

The equipment and installation shall comply and be certified where applicable with the current provisions of the European product and installation directives, standards and guidelines, in addition to any further national or local standards or provisions specific to the project.

A fire alarm panel continuously monitors the status of all fire detection and initiating devices and on determining a fire alarm condition shall indicate the source of the fire and automatically initiate pre-programmed alarm and control actions.

All fire alarm control panels shall be network capable to enable them to be interconnected to operate as a single fire alarm system. Network functionality must never impair the ability of any panel to operate as a standalone system together with its associated field devices.

The fire alarm control panels and fire detection devices shall all be from a single manufacturer in order to achieve a single source of responsibility for equipment performance and compatibility. Two or more providers of installation, commissioning and maintenance services must be available in addition to (or instead of) the manufacturer and have the full support, training and authorisation of the manufacturer in this respect.

2. ABREVIATIONS

- BOSEC - Belgian Organisation for Security Certification
- BS - British Standard
- CEN - European Committee for Standardization
- CENELEC - European Committee for Electro technical Standardization
- Class A - Electrical circuit going from equipment A to other equipment and back to equipment. A making a closed loop (or return) to ensure redundancy, which is the safest solution.
- Class B - Electrical circuit going from equipment A to other equipment without making a closed loop. This is not a safe solution.
- CIE - Control and Indicating Equipment (fire alarm and notification panel)
- CPD - Construction Products Directive (includes fire detection and alarm equipment)
- CPU - The central computer/processor of a fire alarm or voice command control system
- EFTA - European Free Trade Association
- EN - European Norm
- EMC - Electro Magnetic Compatibility
- LCD - Liquid Crystal Display
- LED - Light Emitting Diode
- LVD - Low Voltage Directive
- MCP - Manual Call Point (break glass unit)
- mm - millimetre
- NBN - Bureau voor Normalisatie / Bureau de Normalisation
- PC - Personal Computer
- PSU - Power Supply Unit
- RoHS - Restriction of Hazardous Substances
- USB - Universal Serial Bus
- WEEE - Waste Electrical and Electronic Equipment
- Zone - Combination of one or more circuits or devices in a defined building area, i.e. ten (10) devices on a floor combined to form a single zone.

3. DRAWINGS

The drawings are issued for tender purposes and to be read in conjunction with the bills of quantities and general specifications. Any discrepancies found are to be brought to the attention of the engineer prior to the submission of the tender.

The fire detection contractor shall read the drawings in conjunction with the Architects and other engineers' drawings to ensure the correct positioning of outlets, plant and equipment.

4. SAMPLES AND SUBMITTALS

The fire detection contractor shall not purchase any equipment for the fire detection system specified herein until the engineer has approved the project submittals in their entirety and has returned them to the fire detection contractor. The approval of samples process is provided in the general specifications.

All drawings and diagrams shall include the fire detection contractor's title block, complete with drawing title, fire detection contractor's name, address, date including revisions, and preparers and reviewers' initials.

Datasheets shall have the printed logo or trademark of the manufacturer for all equipment. Indicated in the documentation shall be the type, size, rating, style, and catalogue number for all items proposed to meet the system performance detailed in this specification. The proposed equipment shall be subject to the approval of the engineer.

A complete set of shop drawings shall be supplied. The shop drawings shall be reproduced electronically in digital format. This package shall include but not be limited to:

- Fire alarm CIE wiring and interconnection schematics
- Complete point to point wiring diagrams
- Riser diagrams
- Complete floor plan drawing locating all system devices and a scale plan and elevation of all equipment in the control room. Including showing the placement of each individual item of fire alarm equipment as well as cable tray / trunking / conduit size and routing, junction boxes, and conductor size, quantity, and colour in each cable tray / trunking / conduit
- Detailed system operational description. Any Specification differences and deviations shall be clearly noted and marked.
- Complete system bill of material.

All drawings shall be reviewed and signed off by an individual having a minimum of a NICET certification in fire protection engineering technology, subfield of fire alarm systems.

Complete calculations shall be provided which show the electrical load on the following system components:

- Each system power supply, including standalone power supplies
- Each backup power supply (batteries)
- Each notification circuits
- Each auxiliary power circuit that draws power from any system power supply.

Proof shall be provided via a cross-check calculation that the proposed fire detection system and loop load with the proposed batteries that the standby and alarm time is met. Loop wire specification, load spread over the loop, output loads, and specific variations of the fire alarm CIE (modular options) shall be all taken in consideration doing the cross-check calculation.

The preferred manufacturer/makers of equipment and/or material are either as described in the general specification, the project specific specifications and/or as listed in the bills of quantities.

The Client reserves the right to specify the equipment and/or materials to be utilised for this installation.

5. INTEGRATED CONTROL AND FLEXIBILITY

The fire detection system shall provide the following services in a single coherent integrated control system.

- Smoke and fire detection
- Visual and audible alarms
- Remote notification

The fire detection system shall consist of a network of fire alarm CIEs with associated field devices. The fire detection system shall be distributed and modular in design with software configuration options to ensure flexibility and reliability. The ability to quickly, easily and economically reconfigure and adapt the system to ever changing site requirements is essential.

6. FIRE DETECTION EQUIPMENT

Fire Panel

The fire detection control panel shall be addressable.

The fire detection panel shall include the following:

- Annunciators
- Power Supply Modules
- Automatic Fault Monitoring Modules
- Module including all necessary relays for switching functions
- Main and Standby Tone Generation Modules

The panel shall be of modular construction using solid state components to operate the system. Alarm initiating circuits shall meet the approved requirements for limited energy application and function for the required period of time. The equipment shall function satisfactorily at the normal mains voltage ±10% and within the following parameters:

- With the batteries disconnected.
- With the batteries connected as for normal use.
- With the batteries connected in the discharged condition.

A fully discharged cell is defined in terms of final voltage. For the purpose of this specification a battery is considered fully discharged when it is unable to maintain output in excess of the final voltage, measured at one-minute intervals, whilst it is subjected to the maximum design load of the system.

The panel shall contain all necessary equipment including internal trouble signals with silencing switches.

Trouble silencing switches shall each be furnished with its associated pilot lamp so that faults on the alarm initiating circuits and the alarm signal circuits can initiate trouble signals and be silenced independently of each other.

Alternatively, this can be done electronically using one common silence switch. However, using either method, the silencing of one signal shall not prevent further signals from sounding the trouble alarm.

Any relays used for critical alarm functions shall have the necessary respective coils electrically supervised and shall alarm in the event of an open circuit.

Annunciator

Annunciator modules shall indicate fire and fault conditions. The fire indication shall be red and the fault indication amber. Initiating devices shall be individually identified on the Annunciator Panel.

Clearly identified zone indicators shall be provided for fire and fault conditions. The fire detection contractor shall mount a laminated drawings indicating the zones next to the fire detection panel. It shall be necessary to restore the alarm-initiating device to normal and manually reset the annunciator indication lights. The Control Panel test switch shall test all circuit components necessary to sound an alarm as well as all the alarm lamps. Provision shall be made for more than one test switch where it is not practical to use one test switch. All field wires connected to alarm initiating devices necessary to actuate an annunciator shall be electrically supervised, and a single short circuit, open or ground fault shall not cause illumination of any fire alarm indicator. The removal of any detector shall cause the relevant zone fault to alarm.

The type of zone indicator used for the fire alarm system, and the specified critical alarms shall be one of the following:

- Two lamps connected in parallel associated with each indicator and arranged so that the failure either of the lamps is apparent during the course of a routine test
- Two light emitting diodes (LED's) connected in parallel with each indicator and arranged so that failure of either of the lights is apparent during the course of a routine test. Proprietary LED holder complete with lenses shall be used and the direct soldering of wires to LED connection leads shall not be permitted.
- One lamp associated with each indicator and the circuit arranged to give an audible fault warning immediately on the failure of any lamp at any time.

For all other auxiliary alarm indicators, it shall only be necessary to have one lamp or one light emitting diode.

Fault Warning

An immediate fault warning or trouble signal shall be given by:

- An audible warning from a sounder situated within the indicating equipment.
- A visible indication on the indicating equipment.

A fault warning shall be given in the event of any of the following occurring:

- Failure or disconnection of the normal power supply.
- Failure or disconnection of the standby power supply.
- Failure or disconnection of the battery charging equipment.
- Failure or disconnection of the leads to the alarm sounders (fault warning facility per zone).
- Failure of any fuse or protective device.
- Isolation of any of the fire signal circuits.

The control panel shall be fitted with Modbus RTU interface using RS485 or Modbus TCP to enable communication with the Building Management system.

Interfacing

The Central Control Unit shall interface with the following peripheral device/systems at the positions indicated on the drawings.

- Access Control System
- Air Conditioning Installation
- Lift Installation
- Access Control Installation – release doors in event of fire

Remote Signal

Facilities shall be provided at each Control Panel, for signalling all fire and fault alarm indication to a remote station via volt free contacts. Remote signal boxes shall be installed in the guard house. They shall comprise a green and red light for each zone a sounder and a mute button. The green light shall depict zone circuit healthy, red light zone circuit fault. Space for three (3) additional zones shall be allowed for on the remote panels.

Branch Circuits

Outputs to any ancillary services powered from the control equipment power supply shall be fused or similarly protected to ensure the safety of the control equipment. In addition, isolation switches shall be provided for maintenance and testing of the following:

- Each fire service signal facility.
- Each remote signal facility.

Battery and Charger (24V DC)

The normal (main) supply shall be 230/240V AC and a standby supply of 24V DC shall take over immediately upon a failure of the main supply. The changeover shall be automatic and must not interrupt the operation of the fire alarm system.

The standby batteries shall be heavy duty sealed lead acid with the required amount of cells necessary for the system voltage. They shall have sufficient capacity to supply the largest load placed on them under normal, fire and fault conditions. The batteries shall be rated for a period of 24 hours normal load and 30 minutes fault alarm load for the complete detection evacuation system.

Battery charging equipment shall incorporate automatic control features with the output designed to charge and maintain the cells within the limits specified by the battery manufacturer. The charger shall be capable of recharging the batteries fully within 12 hours. Under normal charging service, the charger shall charge the batteries at a high rate and automatically switch to a low charge rate when the batteries are fully charged.

The charger shall contain a voltmeter, an ammeter and an indicating lamp shall illuminate to indicate the 230/240V AC power source. The battery charger shall be current limited to prevent damage in the event of a short circuit in the battery leads or a reversal of polarity.

The battery shall be housed in a suitable robust ventilated cabinet.

Detectors

An indication light on each detector shall indicate when smoke, heat and/or combustion gas is detected. Extended lights shall be installed where detectors are located above ceilings, or where they are concealed in any way.

Infra-red detectors shall not respond to constant infra-red radiation or short flickering phenomenon.

Heat sensitive detectors shall incorporate a rate of rise feature as well as a fixed temperature alarm.

All the above-mentioned detectors shall utilise a common standard base mounting to ensure uniformity and flexibility with the installation.

- have integral transmitter and receiver
- automatic alignment onto a reflective prism
- automatic contamination compensation
- programmable sensitivity and fire threshold
- minimum range of 20m

Sirens

The siren lines shall be electronically supervised for short and open circuits.

Strobe Alarm Lights

Strobe alarm light lines shall be electronically supervised for short and open circuits.

Strobe alarm lights shall be type Zenon Beacon (or similar approved), with red lens suitable for 24V electrical supply and have a flashing energy of 0.5 joule.

Relays

All necessary relays shall be provided for operating air conditioning/ventilation plants, operating alarms and indicating on panels as specified.

The relays shall each be provided with a minimum of one normally open and one normally closed contact rated at 5 amps.

The relays shall be mounted in a separate compartment in the control unit and wired to terminals and wiring from the outgoing terminals of the Control Unit to the terminals of the appropriate air conditioning switchboard shall be executed by the fire detection contractor.

Terminals

Terminals shall be provided for each input and output and shall be suitable for DIN rail mounting and each terminal shall be provided with proprietary identification markers. Where a terminal has insufficient capacity for the number of connections, proprietary insulated insertion bridges shall be used. Allowance shall be made for 10% spare capacity with minimum of ten (10) terminals.

Electronic Door Holders

Electronic Door Holders shall be suitable for operation with 24V DC power supply. Units shall be suitable for surface fixing with rear (concealed) cable entry. The units shall have sufficient holding force for the application intended. Units shall be fail safe and complete with reverse polarity protection.

Break glass Units

Flush mounted break glass manual alarm units shall be provided where indicated on the drawings. The unit shall be of the normally open type with contacts rated at 5 amperes. The glass front shall only require firm thumb pressure or moderate impact to break it and shall have a transparent plastic film adhered to the glass to prevent injury from glass fragments. A test probe shall be provided with each unit to enable the unit to be tested on site. The front of the unit shall be clearly marked “FIRE/BRAND”.

Flush mounted units shall be installed in 75 mm x 75 mm galvanised back boxes as supplied by Le Grand or Crabtree.

7. SOUND LEVEL TESTING AND REPORT

The fire detection contractor shall perform sound level testing in each room. The sound levels (dB) recorded in each room shall either be:

- Issued as a report, providing the room identification (name or number) and the measured sound level
- Issued on a drawing and the measured sound level indicated in each room

Where minimum sound levels have not been achieved in rooms/areas, the fire detection contractor shall notify the engineer in writing immediately for remedial action to be taken.

8. SUPPLIER/MANUFACTURER AND SERVICE PROVIDERS

The fire alarm CIEs and fire detection devices shall all be from a single supplier in order to achieve a single source of responsibility for equipment performance and compatibility.

Only service providers/installers trained by the manufacturer may commission or reconfigure the fire detection system. Two or more providers of installation, commissioning and maintenance services must be readily available in addition to (or instead of) the manufacturer.

9. COMPLETION AND TESTING

After completion of the fire detection system, a full test will be carried out on the installation for a period of sufficient duration to determine the satisfactory work thereof. The fire detection contractor shall carry out all tests required in terms of the relevant Acts, SANS Codes of Practice and Local Authority requirements.

The fire detection contractor shall provide all instruments and equipment required for the testing as well as any water and power required for the commissioning and testing of installations at completion.

The installation shall be commissioned and tested to the satisfaction of the engineer with the following minimum requirements:

- Each and every trigger device shall be tested.
- The supervision of each applicable circuit shall be tested.
- All the functions of the control unit shall be tested
- All time delays shall be checked for accuracy and that the timers will complete their cycles even though wiring between them and their detector circuits are interrupted.
- The power supply, battery and automatic changeover shall be tested.
- All audible and visual alarm shall be tested.
- All air conditioning plant signals shall be tested in the presence of the respective sub-contractor's representative.

If any part of the Works fails the test, the fire detection contractor shall be responsible for rectifying, at his own cost, the defective Works and the re-testing thereof to ensure compliance. If in consequence, the engineers are obliged to attend the further acceptance tests the additional costs incurred by the engineers shall be payable by the fire detection contractor.

The fire detection contractor shall include in his price for all labour, equipment, specialist commissioners.

The Works shall be deemed to be practically complete only when the engineer has approved all tests and inspections, and a Completion Advice Notice and/or other relevant completion notice is issued.

The fire detection contractor shall submit the necessary commencement, compliance and completion forms for the installation as required in terms of the Occupational Health and Safety Act No. 85 of 1993, as amended, the relevant SANS Specifications and the requirements of the relevant Supply Authorities.

10. COMPLIANCE

The equipment and installation shall comply and certified where applicable with the current provisions of the European product and installation directives, standards and guidelines, in addition to any further national or local standards or provisions specific to the project.

The supplier shall provide evidence of certificates of all proposed equipment and combinations of equipment with his submittal. If there is a conflict between the referenced standards or local codes and this specification, it is the bidder's responsibility to immediately bring the conflict to the attention of the engineer for resolution. European standards shall prevail unless national standards or local codes are more stringent. The bidder shall not attempt to resolve conflicts directly with the local authorities unless specifically authorised by the engineer.

The supplier shall be responsible for filing of all documents, paying all fees (including, but not limited to plan checking and permit) and securing all permits, inspections and approvals.

The fire detection contractor shall ensure that all aspects on the installation and commissioning of the fire detection system shall be done by a SAQCC or FDIA registered person. Failure to produce the required SAQCC or FDIA documentation will result in the fire detection system not accepted by the engineer and subsequently the Client.

11. EUROPEAN DIRECTIVES

The fire detection and indicating equipment shall comply and certified where applicable with the current provision of the following European product directives:

- EMC 2014/30/EU
- CPD89/106/EEC
- LVD 2014/35/EU

The above-mentioned equipment needs to carry the CE logo physically on the product and in the accompanying documentation.

To fulfil the compliance to CE the following fire detection and alarm equipment shall have a CPR certificate provided by a third party notified body including the latest standards at the time of quotation in every section:

- Control and indicating equipment - CIE (also known as fire panels)
- Power supplies - PSU
- Fire alarm devices (notification devices)
- Heat detectors (point detectors)
- Smoke detectors (point detectors)
- Flame detectors (point detectors)
- Manual call points
- Smoke detectors, line type (also known as Beam detectors)
- Short circuit isolators
- Input / output devices
- Aspirating smoke detectors

All the above-mentioned equipment needs to carry the CPD number physically on the product and in the accompanying documentation.

The fire detection and alarm equipment shall comply and certified where applicable with the current provision of the following European Norms to the latest standard at the time of quotation:

- EN54-2 + AC + A1, Control and Indicating Equipment (also known as fire panels)
- EN54-3 + A1 + A2, Fire alarm devices (audible notification i.e. sounders)
- EN54-4 + AC + A1, Power Supplies
- EN54-5 + A1, Heat detectors (point detectors)
- EN54-7 + A1 + A2, Smoke detectors (point detectors)
- EN54-10 + A1, Flame detectors (point detectors)
- EN54-11 + A1, Manual Call Points
- EN54-12, Smoke detectors (line type, also known as Beam detectors)
- EN54-13, Compatibility assessment of system components
- EN54-17 + AC, Short circuit isolators
- EN54-18 + AC, Input / Output device
- EN54-20, Aspirating smoke detectors
- EN54-21, Alarm transmission and fault warning routing equipment
- EN54-23, Fire alarm devices - Visual alarms

- EN54-25, Components using radio links
- EN54-29, Multisensor smoke/heat detectors
- EN12094-1, Requirements and test methods for electrical automatic control and delay devices
- EN12094-3, Requirements and test methods for manual triggering and stop devices

The fire detection and alarm equipment shall comply where applicable with the latest provision of BS5839-1 fire alarm system design and installation standard.

12. DELIVERY, STORAGE AND HANDLING

The fire detection contractor shall be responsible for all receiving, handling, and storage of his materials at the job site. Use of loading docks, service driveways, and freight elevators shall be coordinated with the Client.

The fire detection contractor shall remove rubbish and debris resulting from his work on a daily basis. Removal of debris and rubbish from the premises shall be coordinated with the Client.

Products marked with the recycling bin cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

13. QUALITY, WARRANTY AND MAINTENANCE

The fire detection contractor shall have successfully installed similar system fire detection, signalling control components on a previous project of comparable size and complexity. The Client reserves the right to reject any control components for which evidence of a successful prior installation performed by the fire detection contractor cannot be provided.

The fire detection contractor shall have in-house engineering and project management capability consistent with the requirements of this project. Qualified and approved representatives of the system manufacturer shall perform the detailed engineering design of central and remote-control equipment. Qualified and approved representatives of the system manufacturer shall produce all fire alarm CIE and equipment drawings and submittals, operating manuals. The fire detection contractor is responsible for retaining qualified and approved representative(s) of those system manufacturers specified for detailed system design and documentation, coordination of system installation requirements, and final system testing and commissioning in accordance with these specifications.

A copy of the fire detection contractor’s competent person Competency Certificate from the system manufacturer shall be provided and all personal on site shall have the minimum SAQCC registration. The fire detection system shall be signed off by a registered SAQCC person taking responsibility for the installation and commission.

The fire detection contractor shall offer a warranty on all materials for two (2) years from date of acceptance, unless otherwise specified. A copy of the manufacturer's warranty shall be provided with close-out documentation and included with operation and installation manuals.

The fire detection contractor shall offer a warranty on all installation and workmanship for one (1) year from date of acceptance, unless otherwise specified. A copy of the manufacturer's warranty shall be provided with close-out documentation.

The fire detection contractor shall guarantee the materials, apparatus and workmanship delivered by the fire detection contractor for a period to twelve (12) months. The guarantee must be valid for a period starting on the date when the Contract is accepted by the Secretary for works or his representative as completed and in working condition.

The complete installation must be guaranteed against defects as a result of patent and latent defects of the apparatus as well as against faulty materials and workmanship. The guarantee must provide for all parts, spares and appurtenances, which become defective during the guarantee period, to be replaced free of charge to the Administration or to the engineer.

All costs of labour, out of town allowances, materials and transportation required to replace such part of a defective installation shall be borne by the fire detection contractor and shall be included in his guarantee. The fire detection contractor shall cede to the Administration the remainder of any equipment guarantee which he has received from his suppliers, and which may extend beyond the period of twelve months mentioned herein.

The fire detection contractor shall visit the installation at regular intervals on an acceptable and agreed day and perform full maintenance on the basis of a proper preventive maintenance program approved by the engineer.

If during the said period the installation is not in working order for any reason for which the fire detection contractor can be held responsible, or if the installation develops defects, he shall immediately upon being notified thereof take steps to remedy the defects or faults or to make any necessary adjustments.

The fire detection contractor shall report to an official on arriving and again at leaving the premises on each visit. Such person, who has been nominated by the engineer, shall sign a Service report giving details of any defects made good, temperature readings taken, etc. A copy of such Service Report is to be submitted to the engineer liaising with the Consultant engineer in all cases.

14. TRAINING AND DOCUMENTATION

The fire detection contractor shall schedule and present a minimum of two (2) hours of documented formalised instruction for the building Client, detailing the proper operation of the installed fire detection system.

The instruction shall be presented in an organised and professional manner by a person factory trained in the operation and maintenance of the equipment and who is also thoroughly familiar with the installation.

The instruction shall cover the schedule of maintenance required by national standards and any additional maintenance recommended by the system manufacturer.

Instruction shall be made available to the Local Municipal Fire Department if requested by the local authority having jurisdiction.

The accompanying product documentation such as operation and installation manual shall be in the local language.

The fire detection contractor shall provide substantive training to selected staff in the correct operation and operator maintenance procedures of each item of equipment supplied by himself and requiring such training.

The fire detection contractor shall issue a “Certificate of Training” to each staff member for each item of equipment on which the staff member has been trained. These certificates of training are to be signed by the fire detection contractor, the staff member concerned. Copies of these certificates shall be submitted to the engineer for inclusion in the Practical Completion \ First Delivery Certificates.

The fire detection contractor shall supply, after approval by the engineer, three (3) bound sets of operating instructions, maintenance manuals and AS BUILT drawings for the complete fire detection Installation, the test results, including the portions thereof completed by Specialist Contractors.

The provision of operation instructions, maintenance manuals and record drawings shall be inclusive of the demonstration of the specific portion of the Mechanical Engineering Services Installation by the fire detection contractor and / or specialist sub-contractor and training of the Client’s representatives and staff members.

The fire detection contractor will not be accepted as complete until these have been supplied and approved by the engineer.

These manuals shall include the following:

- Index
- Description of the System.
- Operation of the System.
- Plant and Equipment – including Model Numbers and Suppliers.
- Test Report.
- Maintenance Instructions.
- Spare Parts List.
- Descriptive Literature.
- Record Drawings (both HARD COPY and ELECTRONIC FORMAT - drawing AutoCAD)
- Service Records

15. SYSTEM DESCRIPTION

The following section needs to be specifically tailored to the specific project. The intent of this section is to describe the project scope, describe location of equipment and any additional details.

Provide and install a new fire detection and alarm system consisting of:

- Fire alarm CIEs located as shown on the drawings
- LCD remote repeater(s) shall be located as shown on the drawings
- Manual call points shall be located as shown on the drawings
- Zone smoke detection shall be provided as shown on drawings
- Zone heat detection shall be provided as shown on drawings
- Beam smoke detection shall be located as shown on the drawings
- Duct smoke detection shall be provided as shown on the drawings
- Provide audible notification located throughout the building, as shown on the drawings
- Provide visual notification located throughout the building, as shown on the drawings
- Provide magnetic door holders, as shown on drawings.
- Provide elevator recall functions for primary and alternate floors and elevator power shunt trip activation.

16. NOTIFICATION AND OPERATION

The alarm activation of any duct smoke detectors, zone smoke detector, heat detector, manual call point, the following functions shall automatically occur:

- The internal audible device shall sound at the fire alarm CIE and remote repeater
- The LCD display shall indicate all applicable information associated with the alarm condition including; zone, device type, device location and time/date
- All system activity/events shall be documented in a system history event buffer. A total of 9999 events shall be recordable.
- Any remote or local repeater LCD/LED's associated with the alarm zone shall be illuminated
- Activate audible notification throughout the building
- Activate visual notification throughout the building
- Activate fire routing notification
- The audible and visual notification shall stop when "Sounders Stop" is pressed
- All automatic events programmed to the alarm point shall be executed and the associated outputs activated
- All stairwell/exit doors shall unlock throughout the building
- All self-closing fire/smoke doors held open shall be released

Upon activation of a fault event or signal from any device on the system, the following functions shall automatically occur:

- The internal audible device shall sound at the fire alarm CIE and remote repeater
- The LCD display shall indicate all applicable information associated with the fault condition including; zone, device type, device location and time/date
- All system activity/events shall be documented in the system history event buffer. A total of 9999 events shall be able to be recordable
- Any remote or local repeater LCD/LED's associated with the faulty zone shall be illuminated.

Additional to alarm and fault events it shall be possible to report the following conditions:

- A device or zone that is disabled or put in test`
- Devices not configured
- Inputs that are activated (depending on the operation mode)
- Output groups that are activated (other than standard alarm)
- Total fire system loops or nodes exceeded
- A delay programmed for notification outputs or fire routing outputs

As default the internal audible device shall sound at the fire alarm CIE and remote repeater, however it shall be possible to not sound the internal audible device at the fire alarm CIE and remote repeater if any of these conditions appear.

All fire detection system equipment shall be arranged and programmed to provide a system for the early detection of fire, the notification of building occupants, the automatic summoning of the local fire department, the override of the HVAC and elevator system operation, and the activation of other auxiliary systems to inhibit the spread of smoke and fire, and to facilitate the safe evacuation of building occupants.

The fire detection system shall utilise independently addressed, smoke detectors, heat detectors and input/output modules as described elsewhere in this specification.

The backup power supply shall be a sealed lead-acid rechargeable battery located in the same housing as the fire alarm CIE with capacity to operate the system under maximum supervisory load for 24 hours (or if required for 72 hours) and capable of operating the system for 30 minutes in the alarm mode at 100% load. The system shall include a charging circuit to automatically maintain the electrical charge of the battery or to recharge the batteries to 80% in 24 hours or 100% in 48 hours of its final voltage. The system shall automatically adjust the charging of the battery to compensate for temperature.

If no mains power is available, it shall still be possible to start-up the fire alarm CIE.

The backup power supply and the backup power supply circuit shall be supervised, and it shall be possible to identify by the LCD the following fault indications:

- Battery high resistance fault
- Battery fault
- Battery disconnected
- Battery short circuit
- Battery high temperature
- Battery over voltage
- Battery under voltage

Next to the notification on the LCD as extra attention it shall be possible to identify on the fire alarm CIE or remote repeater any battery fault by a general LED and separate by a separate LED a low battery notification when running only on batteries to indicate that remaining charge may be insufficient for continued operation.

The main display interface shall show the first as well as the most recent and highest priority system event without any operator intervention. All system events shall be directed to one of three message queues. Messages of different types shall never intermix to eliminate operator confusion. A "Show Events" switch shall provide additional information and the possibility to zoom into the events filtered per event type and zones to retrieve the status at device level.

All the detection circuits shall be supervised for short and open circuit. It shall be possible to identify in case of an open loop if it is the (+) or the (-) side or both sides of the circuit. In case of a short circuit the system shall not lose more than 32 devices. All the detection circuits shall be wired as class-A. Only under special circumstances shall class-B circuits be used and only when less than 32 devices are used on a circuit. It shall be possible to give a unique address to each device on the circuit.

All the notification, fire routing, general fire and fault circuits shall be supervised for short and open circuit.

It shall be possible to provide class-A type for the notification circuits as well.

It shall be possible to expand the system by adding additional detection loops and supervised notification outputs or by networking with an additional fire alarm CIE.

17. CAPACITY AND FEATURES

Apart from general compliance requirements the fire alarm CIE and repeater shall be RoHS compliant.

The fire alarm CIE shall be a multi-processor-based system that allows for 508 initiating devices per fire alarm CIE. It shall be designed specifically for fire detection and alarm system applications. The fire alarm CIE shall be certified for all applicable directives and standards.

The operating system of the firmware of the fire alarm CIE shall be similar as one certified for fire detection system applications like Avionics, aerospace, medical, military to ensure the highest safety and reliability.

The fire alarm CIE shall include all required hardware, software and system programming to provide a complete and operational system. The fire alarm CIE shall assure that life safety takes precedence among all fire alarm CIE activities.

The fire alarm CIE shall include the following capacities:

- Support up to 508 addressable points. The maximum length of the addressable device loop shall be at least 2 km
- Support up to 64 nodes on the network that can be either a fire alarm CIE or repeater or a fire alarm CIE and repeater at the same time (the distance between 2 nodes can be 1.2 km)
- The total network can contain up to 128 independent loops for addressable devices. One fire alarm CIE shall have the ability for up to 4 loops
- Each fire alarm CIE shall be capable of programming up to 512 zones. Any number can be assigned to a zone from 1 to 9999. The total number of programmable zone shall not be less than 2048. It shall be possible to make a zone local (only for the one fire alarm CIE) or global (used over multiple fire alarm CIEs)
- Support up to 9999 chronological events

The fire alarm CIE shall include the following features:

- Ability to download or upload site programming from a computer through USB or TCP/IP
- Ability to download or upload site programming from a USB memory stick
- Ability to manage alarms from and interact with a Management Software through TCP/IP. The management software provides functionality to manage multiple distributed networks of panel
- Select between different menu languages with one button
- Provide an operator interface display that shall include functions required to report, command and control system functions
- Synchronise the CIE clock via SNTP servers
- Provide an internal audible signal with different patters to distinguish between alarm and fault
- The internal audible signal shall be switched off independently for alarms, faults or conditions
- Provide system reports that provide detailed description of the status of system parameters for corrective action or for preventative maintenance programs. Reports shall be displayed by the operator interface or capable of being saved on a memory stick or uploaded to a computer
- Upgrade the fire alarm CIE and repeater’s firmware via USB memory stick.
- Communication protocol to the following destinations
- Alarm receiving stations via Contact ID Protocol via PSTN or GPRS
- Building management software’s via BACnet and/or Modbus industry standard protocols.
- Email accounts by using Email Authentication
- Document SDK (Software Development Kit) allowing integration into management software’s.
- Extension of panel functionality by use of PAKs (Panel Activation Keys) allowing a modular, extendable system.

In general zones shall be displayed on the main screen, but additional the fire alarm CIE shall have the ability to present the alarm and fault by separate LED for up to 40 zones with ample space for zone text (45 mm x 9 mm) at each fire alarm CIE and repeater. It shall be possible to upgrade the fire alarm CIE at a later stage if needed with such a zone indication board, which shall be easy and fast and requires no complex configuration.

The fire alarm CIE shall include the following operation levels:

- Provide an authorised operator with the ability to test the UI, view reports and contact details
- Provide an authorised operator to perform maintenance functions like, set date and time, disable zones/devices, test zones, create and save detailed reports
- Provide an authorised operator with the ability to do the complete configuration of the system.
- Each level is protect by a 4 digit code and depending on the level entered only that part of the menu shall be shown that shall be used by the specific operator. The other menus shall be hidden.

Supervision of system components, wiring, initiating devices and software shall be provided by the fire alarm CIE. Failure or fault of system component or wiring shall be indicated by type and location on the LCD display. Software and processor operation shall be independently monitored for failure.

18. HOUSING CONSTRUCTION

The wall box (or back box) of the fire alarm CIE shall provide 180° access in both horizontal and vertical direction for easy installation when opening the door. The wall box (back box) of the fire alarm CIE and repeater must be of metal and it shall be possible to easily and quickly, with a maximum of four (4) screws, remove all the electronics by removing a "chassis" on which all the electronic printed circuit boards are fitted.

The wall box of the fire alarm CIE and repeater shall have the capability to have at least eighteen (18) separate cable entries for 20mm cable glands at the top and two (2) at the bottom to ensure one (1) separate entry point for each cable.

Additional it shall be possible have two (2) big cable entry holes in the top and two in the back of the wall box of the fire alarm CIE and repeater cabinet by removing a complete knock-out plate to ensure easy entry access with any type of cable.

The door needs to be of enforced plastic e.g. with sufficient ribs to keep the door light but still sufficient strong as a metal door and it shall be easily paintable. It shall be easy to remove the electronics from the door. It shall be possible to remove the door in no more than three (3) seconds to give immediate and full access during the installation of the wall box.

It shall be possible to level the fire alarm CIE on the wall without additional tools to easily and quickly mark the drilling holes.

The access to the interior of the fire alarm CIE and repeater shall only be possible by using a key. No further tools shall be required to open the fire alarm CIE.

The total fire alarm CIE cabinet including electronics, but excluding batteries, shall not weigh more than 7.5 kg. The maximum width of the wall box shall not be more than 440 mm. The fire alarm CIE shall be designed such that it allows housing backup batteries for sufficient standby time for the CIE.

19. USER INTERFACES

The user interface shall be of a graphical LCD (Liquid Crystal Display) type with and viewable size of at least 83 x 44 mm and 240 x 128 pixels. The LCD shall be use and LED backlight for easy viewing in low luminosity areas. The LCD shall be able to show the fire alarm CIE ID all time, also when events happened in the system. The LCD shall meet the EN54 requirement so that using separate zone status LED indications shall not be required for compliance. The LCD shall identify the type of alarm using clearly identifiable icons showing the alarm device type.

It shall be possible to identify if the fire alarm CIE is in day mode or night mode. It shall be possible to show the following counters in the main screen:

- Quantity of zones in alarm
- Quantity of faults in the system
- Quantity of other, less important, conditions in the system

The LCD shall always show the most important event at the top. With alarms it shall show at least the fire alarm CIE ID, the loop number, the device address, the zone number, the zone text and the device location text.

Next to notification on the LCD the user interface shows the following information by separate LEDs:

- Fire alarm CIE has its main supply and backup power in good condition
- One or more functions of the system are in test
- One or more functions of the system are disabled
- General fault (any fault in the system)
- Alarm (any device/zone in fire)
- Sounder on
- Fire alarm CIE internal buzzer silenced
- Fire alarm CIE is in user level 2, 3 or 4 operating mode
- Power supply fault
- Earth fault
- Low battery
- System fault (fire alarm CIE firmware in safe mode)
- Sounder delay on
- Sounder fault

The user interface shows the following information by separate LEDs:

- Fire routing started
- Fire routing delay on
- Fire routing fault

The fire alarm CIE buzzer shall be able to discriminate alarms, faults and conditions by a different sound pattern. Alarm indication shall always be a continuous tone and take priority over any other event tone.

Provide clearly highlighted system control switches for sounder stop (red), fire alarm CIE silence (black) and reset (green).

Accessing the menus, going through the menus, configuration of the fire alarm CIE via the user interface shall be easy, simple and intuitive with a maximum of 5 buttons in total. On top of that going through the menus and making selections is only done by one control switch/button.

There shall be a button to manually enable/disable the delay for fire alarm notification devices.

There shall be a button to manually enable/disable the delay for the fire routing output(s) and another one for start the fire routing.

The front door of the fire alarm CIE or repeater must have an integrated Scandinavian fire brigade lock. This lock shall allow user level 2 access for the firemen using the Scandinavian fire brigade key.

The user interface of the fire alarm CIE shall be in the local language. It shall be possible to immediately switch to another language with a special dedicated button.

The printed text of the fire alarm CIE shall be in the local language. It shall be possible to change the language of the printed text by not more than ordering another language kit of inserts.

20. WIRING AND WIREWAYS

All wiring connections shall be concentrated at the top of the fire alarm CIE with ample space to bring in the wiring.

All connectors for the wiring shall be pluggable. The connectors must allow for:

- 0.2 - 2.5 mm² (solid or stranded)
- 2 x 0.2-1 mm² (solid)
- 2 x 0.2-1.5 mm² (stranded)

Close to the connections an earth stud must be provided and at the connectors of the loop wiring as well for each loop.

21. PROGRAMMING AND CONFIGURATION

The fire alarm CIE and repeaters shall allow for connecting directly to a mains supply of 110 VAC or 230 VAC without the need to change hardware.

It shall be possible to program and configure the system by at least the following options:

- Directly with the user interface of the fire alarm CIE
- By USB memory stick on the fire alarm CIE (loading and saving)
- By PC directly connected to the fire alarm CIE
- Remotely over Ethernet using TCP/IP

Programming the fire alarm CIE with a PC directly connected shall not generate any earth faults.

The fire alarm CIE shall have the option to automatically detect the devices on all the addressable loops, all at once or on a loop-by-loop bases. All devices shall automatically be allocated to an initial alarm zone. After automatic programming the fire alarm CIE shall be fully functional and able to protect the site without further programming.

The configuration of the CIE shall reside in non-volatile memory inside the CIE. This configuration shall be maintained and automatically reused after a complete power loss (mains and battery backup) event.

The fire alarm CIE shall have a clock and calendar. It shall be possible to synchronise time and date between all the fire alarm CIEs on the network. In case the time and date is not set, the fire alarm CIE shall create a condition. The time shall in be in the format of hh:mm:ss and the date in dd/mm/yy.

The fire alarm CIE must allow for class A and class B device loops.

The fire alarm CIE must allow for a ring and bus system network and any fire alarm CIE on the network must be able to act as a standalone fire alarm CIE, a networked fire alarm CIE and as a fire alarm CIE and repeater simultaneously. The fire alarm CIEs that shall be acted on or those that must be repeated shall be definable at each fire alarm CIE.

In networked fire alarm CIE mode, the fire alarm CIE uses the network to process and show the alarm and fault events received from any remote fire alarm CIE which belong to any of the local zones in the system.

In networked repeater mode, in addition to having the network fire alarm CIE functionality described above, the fire alarm CIE indicates all events for all fire alarm CIEs selected to be repeated.

A standalone fire alarm CIE shall retain its network node even though it is not communicating with the network. Every fire alarm CIE shall be programmable if it acts on global controls or not.

Functions that can be controlled globally are:

- Reset
- Fire alarm CIE silence
- Notification start/stop
- Notification delay (enable delay or cancel active delay)
- Fire routing delay (enable delay or cancel active delay)
- Enable or disable zones

Next to automatic fire detectors and I/O units the fire alarm CIE shall allow also for programming a delay for (addressable) manual call points before they activate alarm outputs.

The fire alarm CIE shall provide at least 2 internal inputs that can be configured at least as remote reset, technical alarm, logged only, fault, or school bell functionality.

Outputs shall be programmable for notification (sounder/VID/VAD), fire routing, fire, fault and up to 50 freely programmable functions.

For each day it shall be possible to create periods where the sensitivity for detectors is different and/or the delays are used or not to activate outputs.

In case the fire alarm CIE is in one of the operator levels (level 2, 3 or 4) it shall timeout automatically and go into standby mode.

Next to automatically leaving the programming mode it shall be possible to manually leave the programming mode in tow (2) ways:

- By exiting while still remain logged in. Entering again to the menus can be done without having to enter the password.
- By logging out. Logging out means next time you'll have to enter the password again.

The operation mode of the fire alarm CIE shall easily be changeable between operating modes for ease of site configuration. At least the following modes shall be available without any additional programming requirements:

- EN54 mode
    - notification devices can only be controlled when a fire alarm is present
    - fire alarm and fire routing notification outputs available on the CIE

- EN54 with evacuation
    - notification devices may be controlled at any time to accommodate emergency evacuation for other purposes than a fire
    - fire alarm notification outputs available on the CIE

- NBN mode
    - notification devices may be controlled at any time to accommodate emergency evacuation for other purposes than a fire
    - fire alarm warning and alarm evacuation outputs available on the CIE to accommodate two stage evacuation

Any zone number may be assigned to a zone between 1 and 9999. The total number of programmable zones in a system shall not be less than 2048. It shall be possible to allocate a zone as local (allocated to only one (1) fire alarm CIE) or global (allocated to multiple fire alarm CIEs). It shall be possible to assign a zone to an LED zone indicator or not, as may be required by the customer.

It shall be possible to assign an ID from 1 to 64 to any fire alarm CIE. This fire alarm CIE ID shall always be visible for the user.

The fire alarm CIE shall allow configuration of the 24 VDC auxiliary output state during reset and when the fire alarm CIE is running on battery power. The default setting for both must be so that the 24 VDC AUX output shall not be deactivated. Not during reset and not when the fire alarm CIE is running on battery power only.

For battery and earth faults it shall be possible to configure if faults shall be reported or not.

For the notification outputs functionality it must be programmable to configure them such that they re-sound with any new device in alarm or only when a new zone comes in alarm.

The fire alarm CIE must provide the option to program different output activation delays for each zone. The fire alarm CIE shall also allow programming of a general delay for notification and fire routing. The delay must be programmable in steps of 1 second between 0 and 600 seconds.

The fire alarm CIE must be able to control the LED of the loop device to let them flash during communication or to keep them off.

22. MAINTENANCE AND DIAGNOSTICS

The fire alarm CIE must be able to disable the following features:

- Zones (including remote zones if your fire alarm CIE forms part of a fire network)
- Devices
- Fire alarm CIE inputs and outputs
- Notification and fire routing activation groups (including remote notification and fire routing activation groups if your fire alarm CIE forms part of a fire network)

The fire alarm CIE must be able to test the following features:

- Zones (one man walk test)
- Inputs
- Outputs
- LEDs of the user interface
- Batteries

In the event log at least, the following conditions shall be logged:

- A fire alarm CIE feature or device being tested
- A fire alarm CIE feature or device being disabled
- A notification device being enabled / disabled
- A loop device is detected that is not configured
- An input or output is activated
- A fire alarm CIE is added to the network
- The maximum number of loops in a fire network is exceeded

The fire alarm CIE shall allow saving the event log on a USB stick

ELECTRICAL ENGINEERING
ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AA		PRELIMINARY AND GENERAL				
		CONTRACTUAL ITEMS				
AA.1		Provision of Sureties	Sum			
AA.2		Insurances	Sum			
AA.3		Third Party Insurance	Sum			
AA.4		Guarantee of the Works	Sum			
AA.5		Provide test results	Sum			
AA.6		Provision of Record Drawings	Sum			
AA.7		Other (Specify) in compliance with OHS Act…….	Sum			
		FIXED COST ITEMS				
AA.8		Site Establishment / Removal	Sum			
AA.9		Other (Specify)……	Sum			
		TIME RELATED ITEMS				
AA.10		Project supervision	Sum			
AA.11		Project administration	Sum			
AA.12		Other Overheads (Specify)	Sum			
AA.13		a) ….....	Sum			
AA.14		b) …….	Sum			
		COMMISSIONING AND DOCUEMNTATION				
AA.15		Test and commission	Sum			
AA.16		Manuals and record infomation	set			
		STAFF TRAINING				
AA.17		Training staff on the operation and daily maintenance of equipment supplied and installed under this contract	Sum			
		HEALTH AND SAFETY				
AA.18		Compliance with health and safety regulations and requirements of the Main Contract H&S Specification, H&S file, PPE etc.	Sum			
		MAIN CONTRACT				
AA.19		Compliance with relevant conditions in the Main Contract Document	Sum	1.0		
		NOTE				
		Preliminary and general costs for time related items shall be based on the Contract period specified in the Form of Tender				
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING

ELECTRICAL INSTALLATIONS

MAKE SAFE AND REMOVE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AB		MAKE SAFE AND REMOVE				
		Making safe, disconnect and removal includes equipment, wireways/conduits and accessories and wiring/conductors/cables				
AB.1		Remove existing electrical installation	Sum	8.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING
ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AC		DISTRIBUTION BOARDS				
		Supply, delivery and installation of switchboards mounted as specified including all fixing materials and switchgear. All to SANS 1765:2003 and IEC 439-1. Refer to the distribution board schematic diagrams				
		SURFACE OR RECESSED MOUNTED				
		MDB				
AC.1		Supply	No	1.0		
AC.2		Install	No	1.0		
		CERTIFICATE OF COMPLIANCE				
AC.3		Allow for Certificate of Compliance (COC) in terms of the Occupational and Health Safety Act, OHS ACT of 1993. Allow for testing and balancing of Phases as well as commissioning of the whole electrical lighting and power installation.	No	1.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING

ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AD		CABLES				
		Supply and install PVC/SWA/PVC 600/1000V copper cable as per manufacturer's requirement.				
		INSTALLED IN GROUND , DUCT OR SADDLE TO WALL				
		All drilling, wall, plugs, saddles, screws, etc to be included .				
		FOUR CORE COPPER STEEL WIRE ARMOURED CABLE (RWBN)				
		16mm²				
AD.1		Supply	m	30.0		
AD.2		Install	m	30.0		
		CABLE TERMINATIONS				
		Including cable gland, screw type earth tag, gland bracket, earth tail and fixing.				
		FOUR CORE COPPER STEEL WIRE ARMOURED CABLE (RWBN)				
		16mm²				
AD.3		Supply	No	2.0		
AD.4		Install	No	2.0		
		EARTHING CONDUCTORS				
		BARE COPPER EARTH				
		16mm²				
AD.5		Supply	m	30.0		
AD.6		Install	m	30.0		
		EARTHING TERMINATIONS				
		16mm²				
AD.7		Supply	No	2.0		
AD.8		Install	No	2.0		
		EARTHWORKS				
		TRENCH				
		Trenching, backfilling and compacting				
AD.9		600 (w) x 600 (d) mm	m	30.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING

ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AE		EARTHING AND BONDING OF ELECTRICAL INSTALLATION				
		General earthing and bonding of items not included above				
AE.1		Bonding of all equipment and materials in accordance with SANS 10142	Sum	1.0		
		Earth electryrodes 3m long installed in ground including 70mm² earth cable from earthrod to distribution board				
AE.2		Supply	No	1.0		
AE.3		Install	No	1.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING
ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AF		WIREWAYS				
		TRUNKING				
		Galvanised heavy duty trunking including bends. T-junctions, alignment pieces, conduct retainers, cover plates spring nuts, threaded rods, Unistrut (spaced/fixed intervals in accordance withn SANS 10142), nuts, bolts, fixing materials etc, including support material, short lengths and fixed to and including fixing channels cast into concrete soffits or steel supports. Provide for suspension on threaded rods and Unistrut support frame.				
		P2000 galvanised metal covers				
AF.1		Supply	m	312.0		
AF.2		Install	m	312.0		
		P2000 - 90 Degree bend				
AF.3		Supply	No	20.0		
AF.4		Install	No	20.0		
		P2000 - T-Junction				
AF.5		Supply	No	20.0		
AF.6		Install	No	20.0		
		WELDED WIRE MESH CABLE TRAYS				
		Supply and install medium duty galvanised welded wire mesh cable tray complete with bends and accessories and 2-off threaded rod suspension assemblies at a minimum of 1000mm per manufactured lengths and fixing interval in accordacenwith SANS 10142				
		300 x 50mm				
AF.7		Supply	m	100.0		
AF.8		Install	m	100.0		
		300mm Horizontal bend (90 degrees)				
AF.9		Supply	No	6.0		
AF.10		Install	No	6.0		
		300mm Tee section				
AF.11		Supply	No	6.0		
AF.12		Install	No	6.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING
ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AG		LUMINAIRES				
		Luminaires shall include for lamp sources, suspension, fixing and connecting. All recessed fittings will be connected to an isolator or plugged into an 5A socket outlet. Refer to theSchedule of Luminaires for technical information				
		RECESSED MOUNTED				
		Type A2				
AG.1		Supply	No	8.0		
AG.2		Install	No	8.0		
		Type D1				
AG.3		Supply	No	10.0		
AG.4		Install	No	10.0		
		Type S2				
AG.5		Supply	No	7.0		
AG.6		Install	No	7.0		
		FLOODLIGHTS				
		Type F3				
AG.7		Supply	No	13.0		
AG.8		Install	No	13.0		
		CORROSION PROOF				
		Type V2				
AG.9		Supply	No	56.0		
AG.10		Install	No	56.0		
		PHOTOCELL				
		16A Photo-Cell unit mounted in a shell of a round bulkhead fitting				
AG.11		Supply	No	1.0		
AG.12		Install	No	1.0		
		LIGHTING OUTLET				
		6A Unswitched shuttered socket in 60mm diameter box				
AG.13		Supply	No	94.0		
AG.14		Install	No	94.0		
		CONDUIT				
Total Carried Forward						

ELECTRICAL ENGINEERING
ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		PVC conduit fixed surface, cast in concrete or chased into brickwork including accessories				
		20mm diameter conduit				
AG.15		Supply	m	800.0		
AG.16		Install	m	800.0		
		100 X 50 Boxes				
AG.17		Supply	No	12.0		
AG.18		Install	No	12.0		
		50mm Round box				
AG.19		Supply	No	35.0		
AG.20		Install	No	35.0		
		LIGHT SWITCHES				
		Single lever one way				
AG.21		Supply	No	15.0		
AG.22		Install	No	15.0		
		Single lever two-way				
AG.23		Supply	No	3.0		
AG.24		Install	No	3.0		
		Ceiling mount 360° PIR motion sensor minimum detection distance 7m lateral and frontal, 10A current rating				
AG.25		Supply	No	6.0		
AG.26		Install	No	6.0		
		CONDUCTORS				
		Supply and install PVC insulated conductors in conduits or trunking: (colours Red, White, Blue = Phase conductor, Black = Neutral conductor, Green/Yellow = Earth				
		2.5mm²				
AG.27		Supply	m	2 000.0		
AG.28		Install	m	2 000.0		
		LIGHTING REPORT				
AG.29		Light level output report	Sum	1.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING
ELECTRICAL INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AH		POWER				
		POWERSKIRTING				
		Surface mounted two compartment, three tier powerskiritng with a minimum height of 165mm and depth op 55mm including all accesories and fixings				
AH.1		Supply	m	30.0		
AH.2		Install	m	30.0		
		End caps				
AH.3		Supply	No	8.0		
AH.4		Install	No	8.0		
		Internal bend				
AH.5		Supply	No	4.0		
AH.6		Install	No	4.0		
		Single (SANS164-2 - New ZA) 16A Single pole switched socket outlet				
AH.7		Supply	No	8.0		
AH.8		Install	No	8.0		
		Single Dedicated (SANS164-4) 16A Single pole switched socket outlet (shaved earthpin)				
AH.9		Supply	No	8.0		
AH.10		Install	No	8.0		
		RJ45 Data Points including cradle and cover				
AH.11		Supply	No	8.0		
AH.12		Install	No	8.0		
		RJ45 Telephone Points including cradle and cover				
AH.13		Supply	No	8.0		
AH.14		Install	No	8.0		
		SWITCHED SOCKET OUTLETS				
		Socket outlets including screwing to outlet boxes, cable termination and cover plates.				
		MOUNTED IN SURFACE OR RECESSED BACKBOX				
		Combination (SANS164-1 and 2) 16A Single pole switched socket outlet				
AH.15		Supply	No	25.0		
AH.16		Install	No	25.0		
Total Carried Forward						

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
		ISOLATORS				
		Isolators including screwing to outlet boxes, cable termination and cover plates.				
		30A Double pole				
AH.17		Supply	No	10.0		
AH.18		Install	No	10.0		
		30A Triple pole				
AH.19		Supply	No	4.0		
AH.20		Install	No	4.0		
		ROTARY ISOLATORS				
		30A Double pole				
AH.21		Supply	No	4.0		
AH.22		Install	No	4.0		
		CONDUIT				
		PVC conduit fixed surface, cast in concrete or chased into brickwork including accessories				
		25mm diameter conduit				
AH.23		Supply	m	400.0		
AH.24		Install	m	400.0		
		100 x 100 boxes				
AH.25		Supply	No	25.0		
AH.26		Install	No	25.0		
		50mm Round box				
AH.27		Supply	No	40.0		
AH.28		Install	No	40.0		
		CONDUCTORS				
		Supply and install PVC insulated conductors in conduits or trunking: (colours Red, White, Blue = Phase conductor, Black = Neutral conductor, Green/Yellow = Earth				
		4mm²				
AH.29		Supply	m	1 200.0		
AH.30		Install	m	1 200.0		
		HVAC ALLOWANCES				
AH.31		Supply and Install	Sum	1.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING
ELECTRICAL INSTALLATIONS

EXTRA SERVICES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
AI		EXTRA SERVICES				
		GENERAL				
AI.1		Labelling of all new sockets, isolators, switches and boxes	Sum	1.0		
AI.2		Lightning protection	Sum	1.0		
		BACKUP POWER				
		Inverter 10kW single phase Equvalent to Victron Multiplus II				
AI.3		Supply	No	1.0		
AI.4		Install	No	1.0		
		Batteries 20 kwh litium ion Equivalent to Freedom Won Lite 20/16 Life Po4				
AI.5		Supply	No	2.0		
AI.6		Install	No	2.0		
		All items to complete the Inverter Installation				
AI.7		Supply	No	1.0		
AI.8		Install	No	1.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING

ELECTRICAL INSTALLATIONS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT R
AA	PRELIMINARY AND GENERAL	
AB	MAKE SAFE AND REMOVE	
AC	DISTRIBUTION BOARDS	
AD	CABLES	
AE	EARTHING	
AF	WIREWAYS	
AG	LUMINAIRES	
AH	POWER	
AI	EXTRA SERVICES	
Total Carried I	Total Carried Forward To Summary Of Schedules	

ELECTRICAL ENGINEERING
ELECTRONIC INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BA		PRELIMINARY AND GENERAL				
		CONTRACTUAL ITEMS				
BA.1		Provision of Sureties	Sum			
BA.2		Insurances	Sum			
BA.3		Third Party Insurance	Sum			
BA.4		Guarantee of the Works	Sum			
BA.5		Provide test results	Sum			
BA.6		Provision of Record Drawings	Sum			
BA.7		Other (Specify) in compliance with OHS Act…….	Sum			
		FIXED COST ITEMS				
BA.8		Site Establishment / Removal	Sum			
BA.9		Other (Specify)……	Sum			
		TIME RELATED ITEMS				
BA.10		Project supervision	Sum			
BA.11		Project administration	Sum			
BA.12		Other Overheads (Specify)	Sum			
BA.13		a) ….....	Sum			
BA.14		b) …….	Sum			
		COMMISSIONING AND DOCUEMNTATION				
BA.15		Test and commission	Sum			
BA.16		Manuals and record infomation	set			
		STAFF TRAINING				
BA.17		Training staff on the operation and daily maintenance of equipment supplied and installed under this contract	Sum			
		HEALTH AND SAFETY				
BA.18		Compliance with health and safety regulations and requirements of the Main Contract H&S Specification, H&S file, PPE etc.	Sum			
		MAIN CONTRACT				
BA.19		Compliance with relevant conditions in the Main Contract Document	Sum	1.0		
		NOTE				
		Preliminary and general costs for time related items shall be based on the Contract period specified in the Form of Tender				
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING
ELECTRONIC INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BB		ALARM SYSTEM				
		Alarm Panel				
BB.1		Supply	No	1.0		
BB.2		Install	No	1.0		
		Keypad				
BB.3		Supply	No	2.0		
BB.4		Install	No	2.0		
		PIR				
BB.5		Supply	No	14.0		
BB.6		Install	No	14.0		
		Sounders				
BB.7		Supply	No	2.0		
BB.8		Install	No	2.0		
		Cables				
BB.9		Supply	m	350.0		
BB.10		Install	m	350.0		
		CONDUIT				
		PVC conduit fixed surface, cast in concrete or chased into brickwork including accessories				
		20mm diameter conduit				
BB.11		Supply	m	350.0		
BB.12		Install	m	350.0		
		100 X 50 Boxes				
BB.13		Supply	No	4.0		
BB.14		Install	No	4.0		
		50mm Round box				
BB.15		Supply	No	12.0		
BB.16		Install	No	12.0		
		TESTING, COMMISSIONING, TRAINING AND DOCUMENTATION				
BB.17		System Engineering	Sum	1.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING
ELECTRONIC INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
BC		FIRE DETECTION				
		Fire detection inclusive of all mounting accessories. Installation must be completed and tested by SAQCC registered person.				
		FIRE PANEL				
		Addressable 2 loop fire control panel c/w interface, network and relay cards including power supply and standby batteries				
BC.1		Supply	No	1.0		
BC.2		Install	No	1.0		
		FIRE DETECTION DEVICES				
		Optical detector with base				
BC.3		Supply	No	10.0		
BC.4		Install	No	10.0		
		Optical detector with base sounder				
BC.5		Supply	No	4.0		
BC.6		Install	No	4.0		
		Heat detector with base				
BC.7		Supply	No	3.0		
BC.8		Install	No	3.0		
		Flashing Beacon with sounder base				
BC.9		Supply	No	2.0		
BC.10		Install	No	2.0		
		Resettable Break-glass Units complete with flush 4x4 box				
BC.11		Supply	No	6.0		
BC.12		Install	No	6.0		
		AUXILIARY EQUIPMENT				
		Series line Isolators				
BC.13		Supply	No	3.0		
BC.14		Install	No	3.0		
		Series interface relay unit				
BC.15		Supply	No	3.0		
BC.16		Install	No	3.0		
		CABLING				
		1.5mm² 2 pair Screened PH30 cable				
Total Carried Forward						

ELECTRICAL ENGINEERING
ELECTRONIC INSTALLATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
BC.17		Supply	m	950.0		
BC.18		Install	m	950.0		
		CONDUIT				
		Galvanised conduit fixed surface, cast in concrete or chased into brickwork including accessories				
		25mm diameter conduit				
BC.19		Supply	m	650.0		
BC.20		Install	m	650.0		
		100 x 100 boxes				
BC.21		Supply	No	35.0		
BC.22		Install	No	35.0		
		50mm Round box				
BC.23		Supply	No	15.0		
BC.24		Install	No	15.0		
		TESTING, COMMISSIONING, TRAINING AND DOCUMENTATION				
BC.25		System engineering	Sum	1.0		
		Provide user procedure sheet, framed and mounted adjacent ot fire/mimic panel				
BC.26		Install	No	1.0		
		Provide detailed instruction manuals				
BC.27		Install	No	1.0		
BC.28		Supply	No	1.0		
Total Carried Forward To Summary						

ELECTRICAL ENGINEERING

ELECTRONIC INSTALLATIONS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT R
BA	PRELIMINARY AND GENERAL	
BB	ALARM SYSTEM	
BC	FIRE DETECTION	
Total Carried I	Total Carried Forward To Summary Of Schedules	

ELECTRICAL ENGINEERING

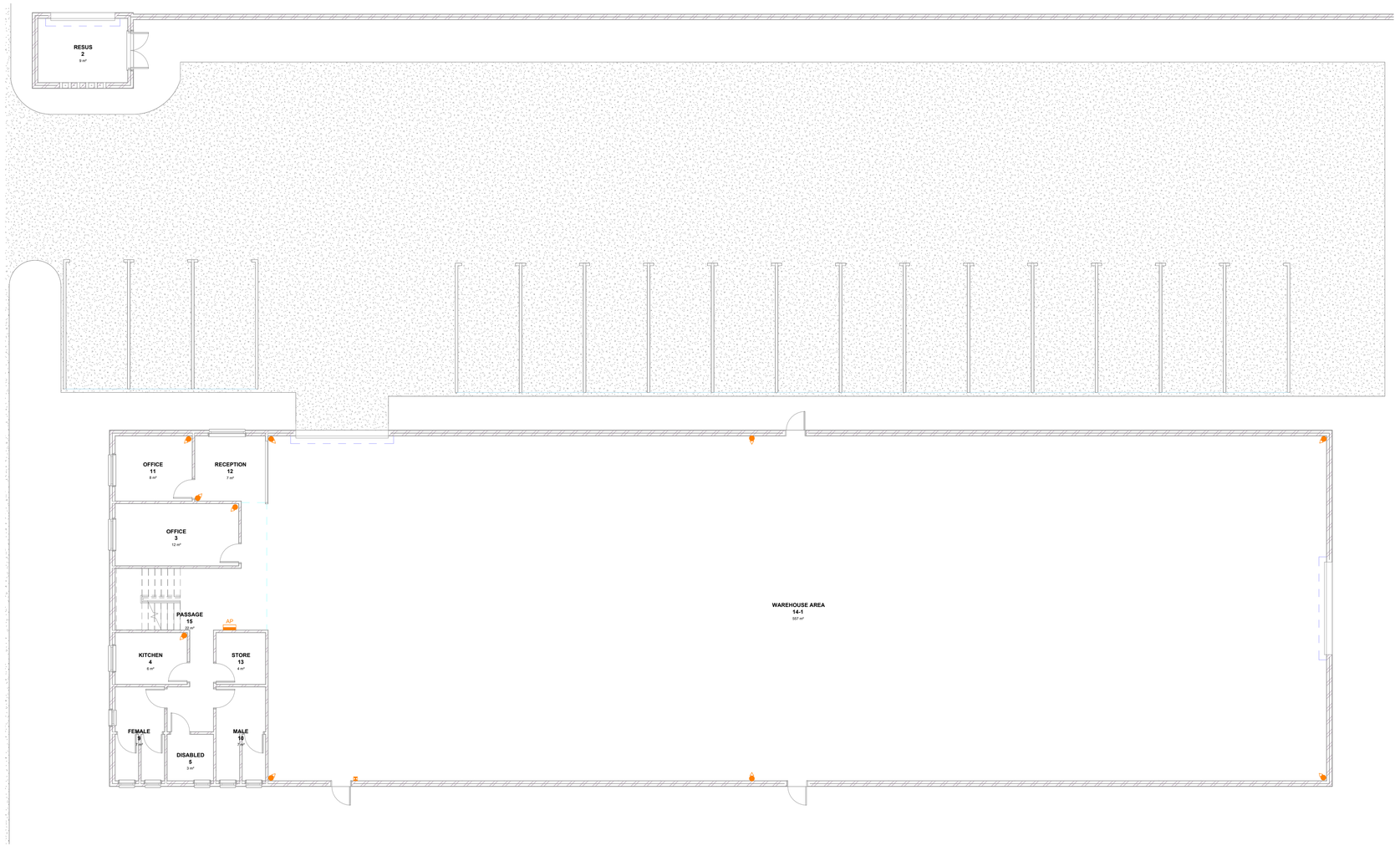
SUMMARY OF SCHEDULES

SCHEDULE	DESCRIPTION	AMOUNT R
E1	ELECTRICAL INSTALLATIONS	
E2	ELECTRONIC INSTALLATIONS	
	TOTAL TRANSFERRED TO SECTION 4 BILL NO 1. ITEM NO 1	

Drawing Register by Group

Job:1764-004-ELE (Erf 2696)

Drawing No.	Description	Rev	Date	By
Group: ELECTRICAL				
1764-004-ELE - L-001	LIGHTING LAYOUT	T0	01-02-2024	JD
1764-004-ELE - F-001	FIRE DETECTION LAYOUT	T0	01-02-2024	JD
1764-004-ELE - E-001	ELECTRONICS LAYOUT	T0	01-02-2024	JD
1764-004-ELE - P-001	POWER LAYOUT	T0	01-02-2024	JD
1764-004-ELE - S-001	MDB	T0	01-02-2024	JD



Ground Floor Electronic

SCALE 1 : 100

GENERAL NOTES

ELECTRONIC LEGEND

ALARM SYSTEM

	ALARM KEY PAD
AP	ALARM PANEL INCLUDING ALL HARDWARE, ENCLOSURE AND BATTERIES
	PASSIVE INFRA RED SENSOR FOR ALARM SYSTEM CEILING MOUNTED

NO	APPROVED	AMENDMENTS	DATE
T0	JD	FOR TENDER	01-02-2024

SURVEYED	T.B.A	T.B.A
DRAWN	T.GERBER	29.01.2024
DESIGNED	J.DUVENHAGE	26.01.2024
CHECKED	B.OOSTHUIZEN	30.01.2024
APPROVED	PR REGISTRATION NO. 2017305018	DATE 31.01.2024

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CLIENT

EASTERN CAPE DEVELOPMENT CORPORATION ECDC

PROJECT TITLE

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS - (MTHATHA CLUSTER G)

DRAWING TITLE

ELECTRICAL INSTALLATION
GROUND FLOOR
ELECTRONICS LAYOUT

SCALE	SHEET SET	SHEET SIZE
As indicated	SHEET 1 OF 1	A1

DRAWING No.	REVISION
1764-004-ELE-E-001	T0

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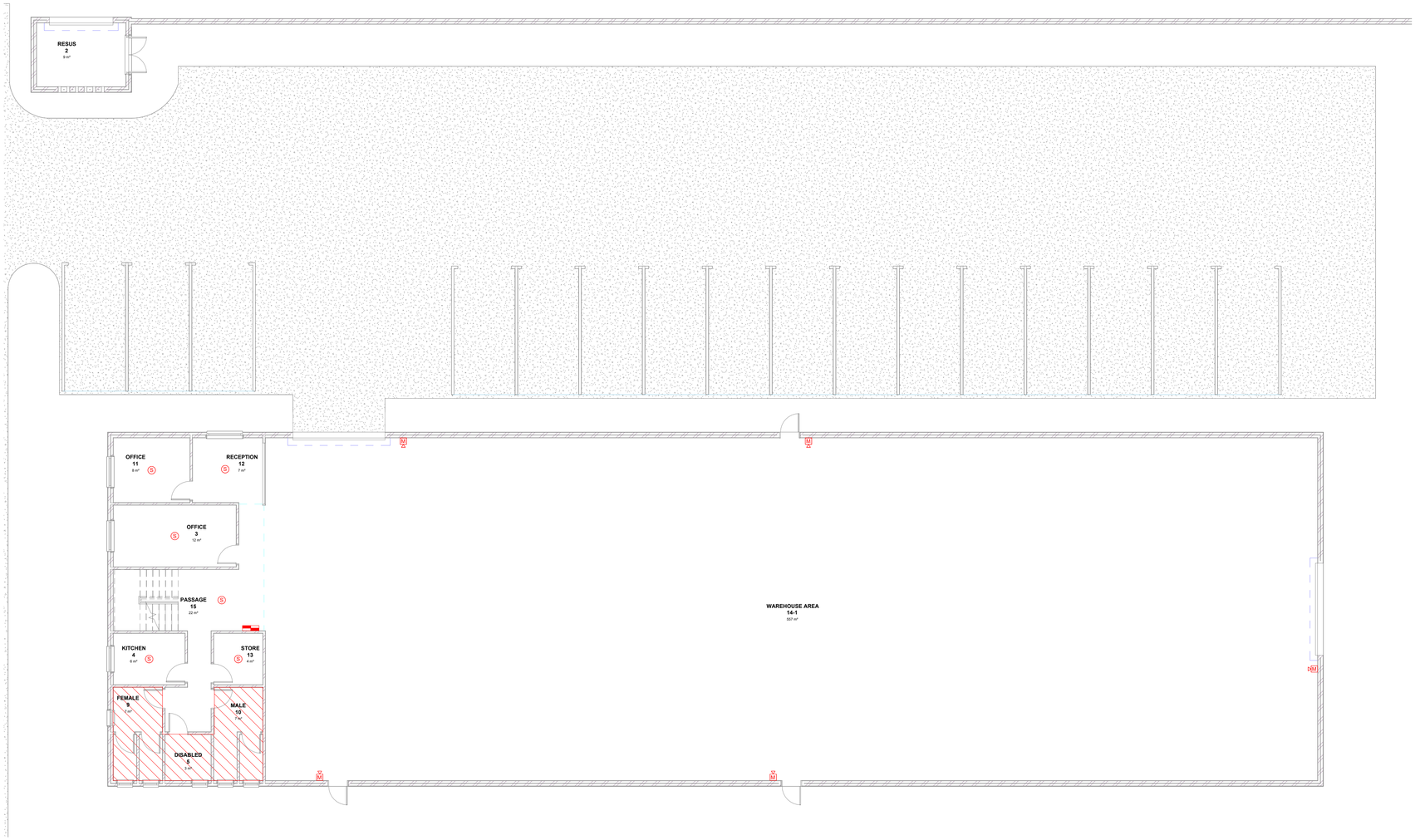

Ground Floor Fire Detection

SCALE 1 : 100

First Floor Fire Detection

SCALE 1 : 100

GENERAL NOTES

FIRE DETECTION LEGEND

	FIRE ALARM PANEL
S	SMOKE DETECTOR COMPLETED WITH BASE
M	MANUAL CALL POINT (RED BREAKGLASS UNIT) WITH HORN STROBE

NO	APPROVED	AMENDMENTS	DATE
T0	JD	FOR TENDER	01-02-2024

SURVEYED	T.B.A	T.B.A
DRAWN	T.GERBER	29.01.2024
DESIGNED	J.DUVENHAGE	26.01.2024
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APPROVED	PR REGISTRATION NO. 2017305018	DATE 31.01.2024

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EASTERN CAPE DEVELOPMENT CORPORATION ECDC

PROJECT TITLE

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS - (MTHATHA CLUSTER G)

DRAWING TITLE

ELECTRICAL INSTALLATION
GROUND & FIRST FLOOR
FIRE DETECTION LAYOUT

SCALE	SHEET SET	SHEET SIZE
As Indicated	SHEET 1 OF 1	A1

DRAWING No.	REVISION
1764-004-ELE-F-001	T0

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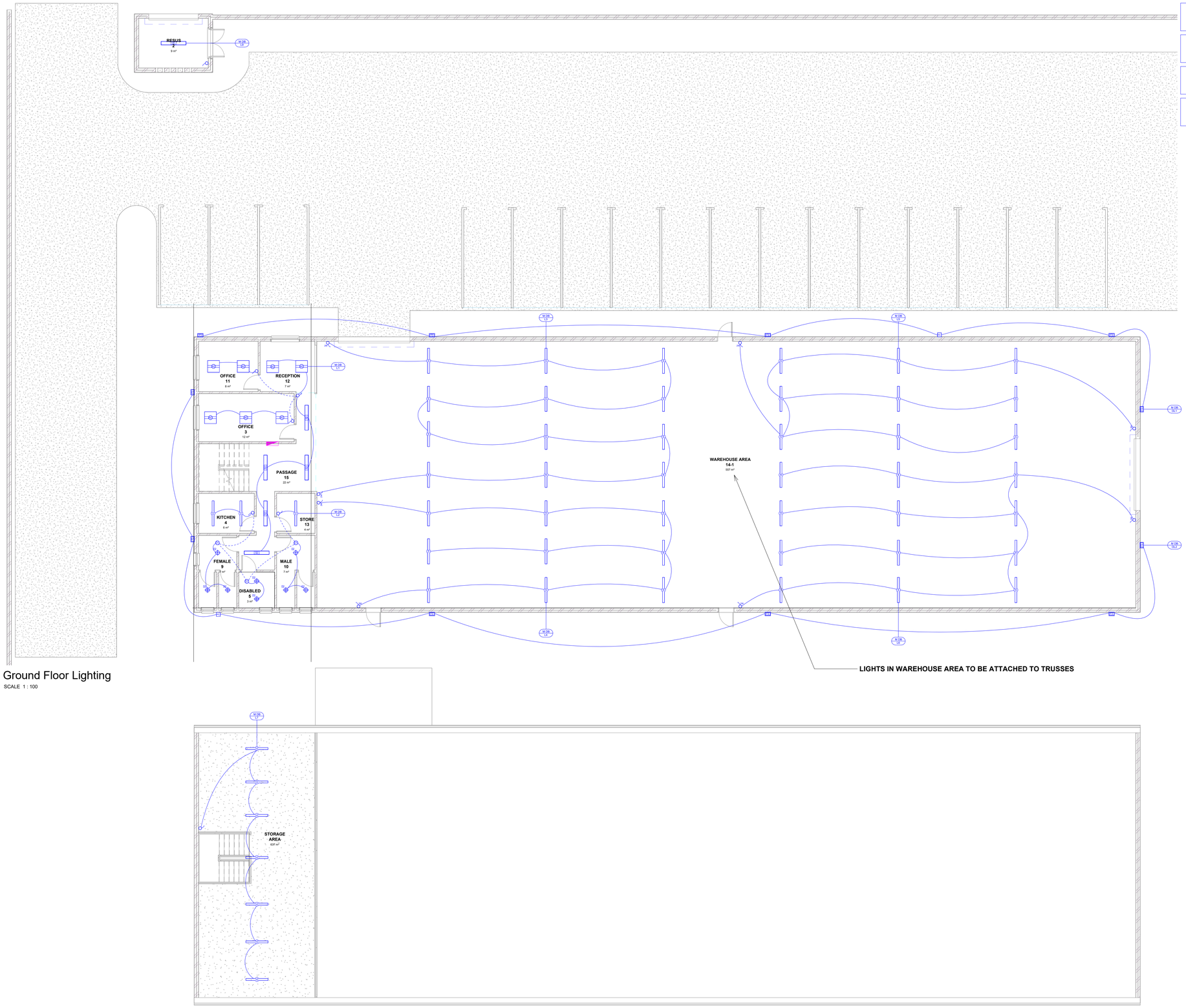

Ground Floor Lighting

SCALE 1 : 100

First Floor Lighting

SCALE 1 : 100

PC	PHOTOCELL IN CLEAR ROUND WEATHER PROOF BULKHEAD
O1	MOTION DETECTOR WITH 10A SWITCHING CAPACITY FOR SINGLE USE AREAS
	SINGLE LEVEL LIGHT SWITCH
2W	SINGLE LEVEL TWO WAY LIGHT SWITCH

GENERAL NOTES

LUMINAIRE LEGEND

	SWITCHING WIRING
	CIRCUIT WIRING
V2 / V4	30W - 55W VAPOUR PROOF SURFACE MOUNTED LUMINAIRE INCLUDING ALL FIXING BRACKETS.
S2	25W - 41W 1200x300 SURFACE MOUNTED LUMINAIRE
F3	34W LED SPOTLIGHT, POLE MOUNTED INCLUDING ALL FIXING BRACKETS
A2	34W - 42W 600x600 RECESSED MOUNTED LUMINAIRE
D	D1 - 7W RECESSED DOWNLIGHTER D2 - 11W RECESSED DOWNLIGHTER D3- 12W-16W RECESSED DOWNLIGHTER D4- 17W-21W RECESSED DOWNLIGHTER D5- 21W-26W RECESSED DOWNLIGHTER

NO	APPROVED	AMENDMENTS	DATE
T0	JD	FOR TENDER	01-02-2024

SURVEYED	T.B.A	T.B.A
DRAWN	T.GERBER	29.01.2024
DESIGNED	J.DUVENHAGE	26.01.2024
CHECKED	B.OOSTHUIZEN	30.01.2024
APPROVED	PR REGISTRATION NO. 2017305018	DATE 31.01.2024

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CLIENT

EASTERN CAPE DEVELOPMENT CORPORATION ECDC

PROJECT TITLE

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS - (MTHATHA CLUSTER G)

DRAWING TITLE

ELECTRICAL INSTALLATION
GROUND & FIRST FLOOR
LIGHTING LAYOUT

SCALE	SHEET SET	SHEET SIZE
As indicated	SHEET 1 OF 1	A1

DRAWING No.	REVISION
1764-004-ELE-L-001	T0

2024/02/08 15:48:15

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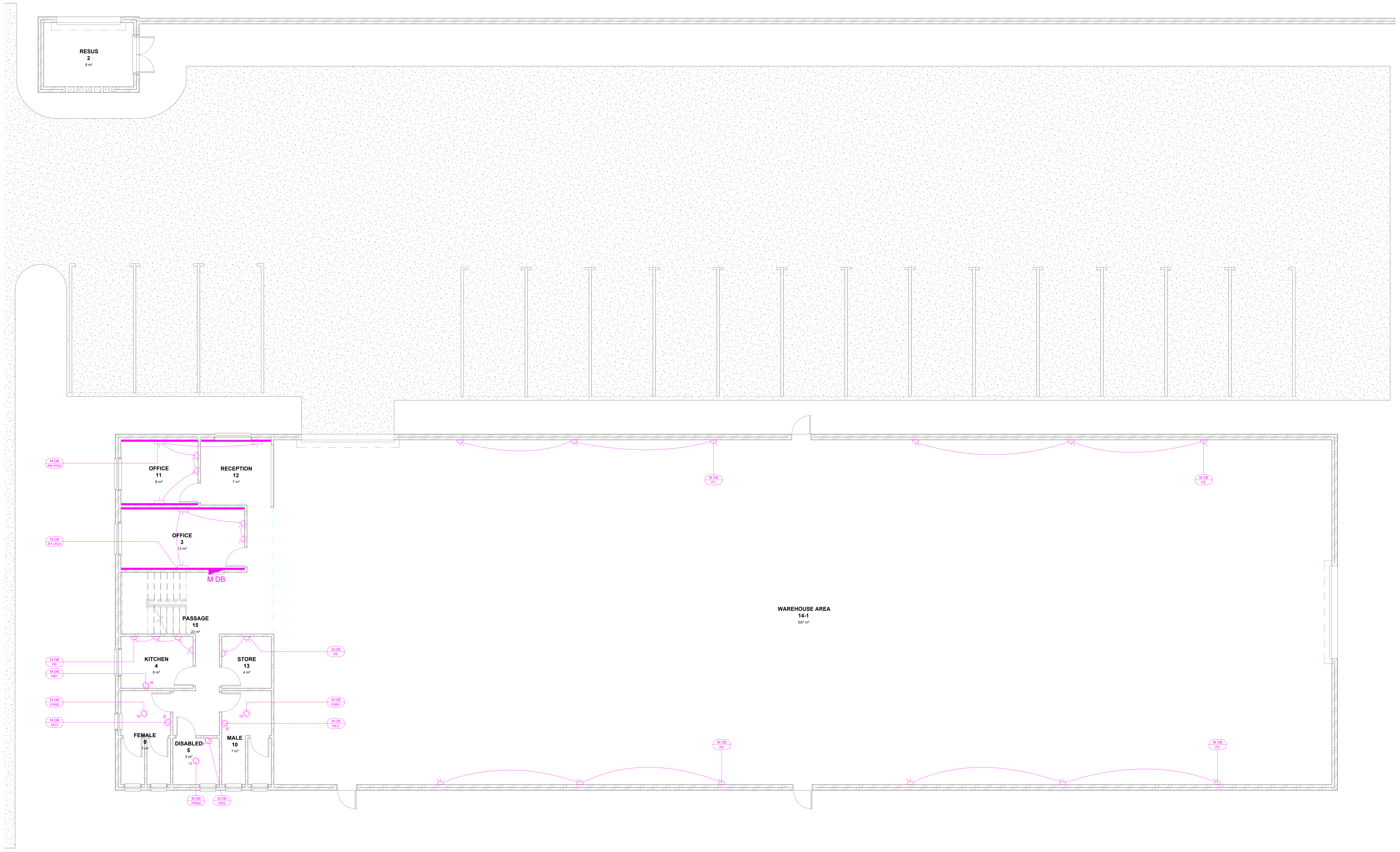
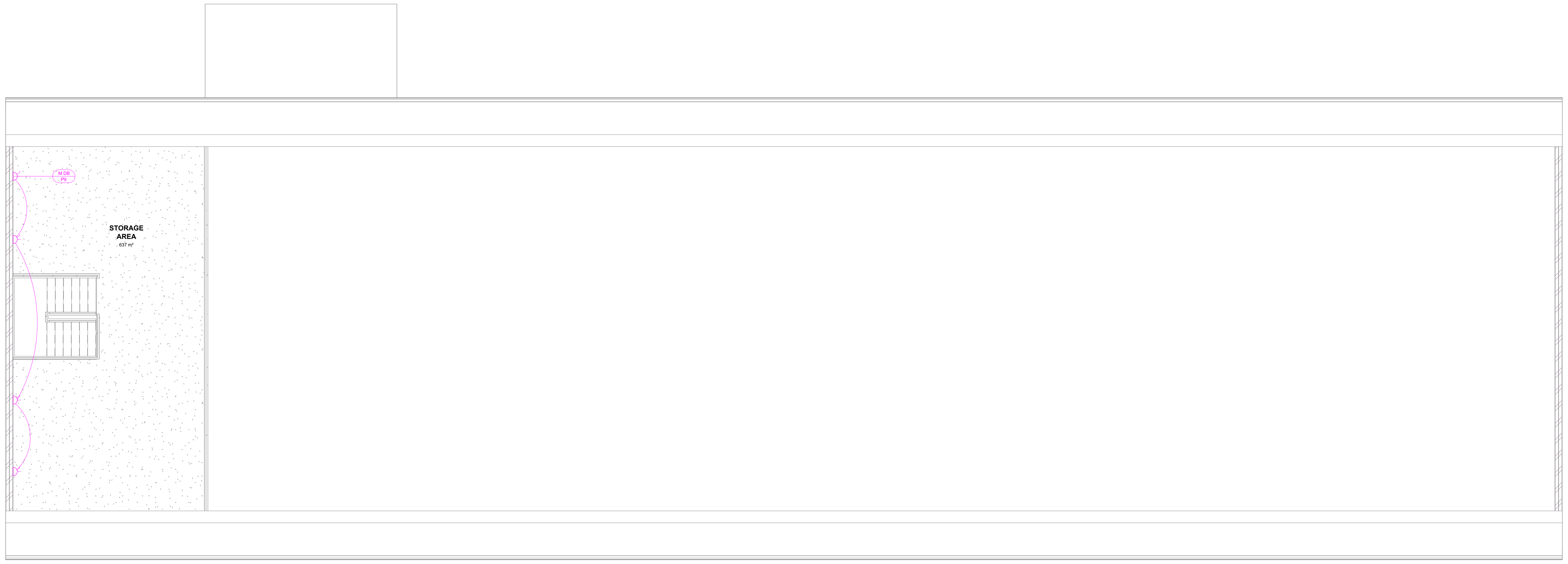


Ground Floor Power

SCALE 1 : 100



First Floor Power

SCALE 1 : 100

GENERAL NOTES

POWER LEGEND

◣	DISTRIBUTION BOARD REFER TO SINLGE LINE DIAGRAMS FOR DETAILS
30 ⊠	RECESSED MOUNTED DOUBLE POLE ISOLATOR IN 50x100 (2x4) BOX. RATING AS INDICATED
▬	POWERSKIRTING TWO TIER, THREE COMPARTMENT
⊥	TYPE 01 WITH ONE OF NORMAL SSO, SLIMLINE SSO, DEDICATED SSO, DATA POINT AND TELEPHONE POINT ON POWERSKIRTING
◓	RECESSED MOUNTED COMBINATION SSO IN 100x100 (4x4) BOX, CONSISTING OF OUTLETS IN ACCORDANCE WITH SANS 164-1 AND 164-2

NO	APPROVED	AMENDMENTS	DATE
T0	JD	FOR TENDER	01-02-2024

SURVEYED	T.B.A	T.B.A
DRAWN	T.GERBER	29.01.2024
DESIGNED	J.DUVENHAGE	26.01.2024
CHECKED	B.OOSTHUIZEN	30.01.2024
APPROVED	PR REGISTRATION NO. 2017305018 DATE 31.01.2024	

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LEVEL1 BBBEE

CLIENT

EASTERN CAPE DEVELOPMENT CORPORATION
ECDC

PROJECT TITLE

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS - (MTHATHA CLUSTER G)

DRAWING TITLE

ELECTRICAL INSTALLATION
GROUND & FIRST FLOOR
POWER LAYOUT

SCALE	SHEET SET	SHEET SIZE
As indicated	SHEET 1 OF 1	A1

DRAWING No.	REVISION
1764-004-ELE-P-001	T0

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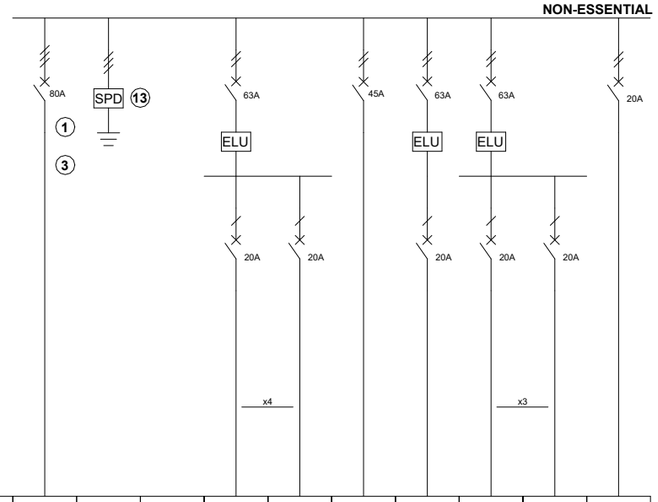
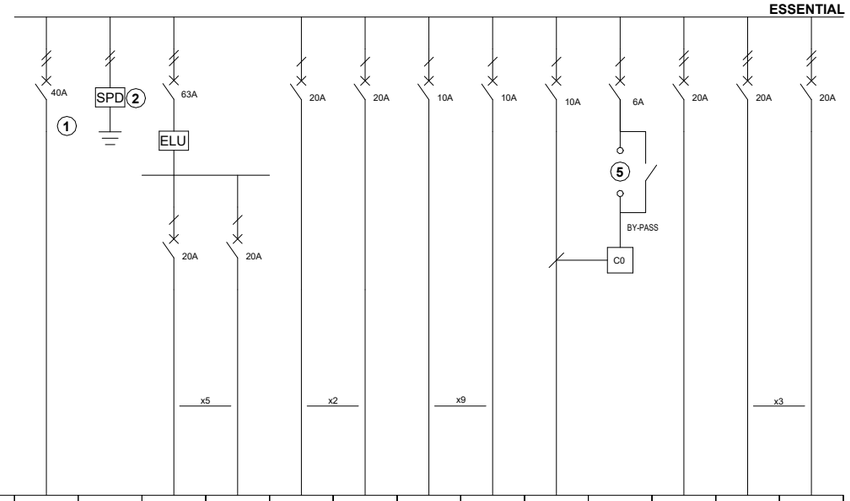
NON-ESSENTIAL



CONDUCTOR SIZE (mm)	16 x 4 CU	-	-	4	4	6 x 3 CU	4	4	4	4
EARTH SIZE (mm)	16 BCE	-	-	4	4	-	4	4	4	4
FED / CIRCUIT NUMBER	EXISTING	-	-	P1	P4	TO INVERTER	HB1	HD1	HD3	AP
EQUIPMENT	SUPPLY	SPD	-	PLUGS	PLUGS	INVERTER	HYDROBOIL	HAND DRYER	HAND DRYER	ALARM
LOAD (kW)	120	-	-	4	4	10	2	1.2	1.2	0.4

ESSENTIAL



CONDUCTOR SIZE (mm)	6	-	4	4	4	4	2.5	2.5	2.5	-	4	4	4
EARTH SIZE (mm)	6	-	4	4	4	4	2.5	2.5	2.5	-	4	4	4
FED / CIRCUIT NUMBER	FROM MDB	-	P5	P9	DP1	DP2	L1	L9	OL1	C0	FP1	F1	F3
EQUIPMENT	INVERTER	SPD	PLUGS	PLUGS	DEDICATED PLUG	DEDICATED PLUG	LIGHTS	LIGHTS	OUTSIDE LIGHTS	CONT	FIRE PANEL	EXTRACTION FAN	EXTRACTION FAN
LOAD (kW)	10	-	4	4	4	4	0.8	0.8	0.8	-	0.5	0.3	0.3

ITEMS

1. Panel mounted kWh meter equivalent to ABB M2M.
2. Class two surge projection device with backup protection and indication.
3. Cascading circuit break to reduce fault current to 6/10kA.
4. Slow trip (motor curve) circuit breaker.
5. Contactor controlled by photocell.
6. Fire signal to drop out contactor under fire condition.
7. Fans to be controlled by timers. Operational time to be confirmed by the mechanical engineer.
8. Submains switchgear to be dropped out by contatcor under fire condition.
9. All wire ends of stranded conductors to be bootlace ferruled unless crimped with a lug.
10. No removable doors/panels is allowed, all to be hinged.
11. Class one and two combined surge projection device with backup protection and indication.

MDB

SCALE 1 : 1

DISTRIBUTION BOARD TYPE		CONSTRUCTION		FINISH		ACCESS		MAXIMUM DIMENSIONS	
FLOOR STANDING		GALVANISED STEEL	X	HOT DIP GALVANISING	X	FRONT		WIDTH (mm)	MEASURED ON SITE
SURFACE	X	3CR12		EPOXY POWDERCOATED	X	BACK		HEIGHT (mm)	MEASURED ON SITE
RECESSED		DOORS		BOARD COLOUR	ORANGE	SIDES		DEPTH (mm)	MEASURED ON SITE
SEMI-RECESSED		REQUIRED	X	INNER PANELS (NORMAL)	ORANGE	ENTRY (TOP / BOTTOM / READ)	X	PROSPECTIVE SHORT CIRCUIT CURRENT RATING (kA)	
INGRESS PROJECTION RATING	IP 65	HINGED	X	INNER PANELS (EMERGENCY)	RED	GLANDPLATE REQUIRED	X	CASCADING REQUIRED TO 6kA	
SPARE SPACE REQUIRED	30%	LOCKABLE	X	INNER PANELS (UPS)		OUTSIDE LABELS ENGRAVED	X	DISTRIBUTION BOARD IDENTIFICATION	X

NO	APPROVED	AMENDMENTS	DATE
T0	JD	FOR TENDER	01-02-2024

SURVEYED	T.B.A	T.B.A
DRAWN	T.GERBER	27.01.2024
DESIGNED	J.DUVENHAGE	26.01.2024
CHECKED	B.OOSTHUIZEN	30.01.2024
APPROVED	PR REGISTRATION NO. 2017305018	DATE 01-02-2024

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CLIENT

EASTERN CAPE DEVELOPMENT CORPORATION ECDC

PROJECT TITLE

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696, 14 TIMBER STREET VULINDLELA HEIGHTS - (MTHATHA CLUSTER G)

DRAWING TITLE

ELECTRICAL INSTALLATION
M DB
MDB

SCALE	SHEET SET	SHEET SIZE
1 : 1	SHEET 1 OF 1	A3

DRAWING No.	REVISION
1764-004-ELE-S-001	T0

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SECTION NO. 5

MECHANICAL INSTALLATION

Item		Unit	Quantity	Rate	Amount
	SECTION NO. 5				
	MECHANICAL INSTALLATION				
	Bill No. 1				
	MECHANICAL SERVICES INSTALLATION				
	MECHANICAL SERVICES INSTALLATION				
	TOTAL TRANSFERRED FROM THE RESPECTIVE MECHANICAL SERVICES INSTALLATION BILLS OF QUANTITIES SUMMARY EXCLUDING VAT				
	Tenderers are to note that the amount included in the amount column for this section of the Bills of Quantities, should be the total of all the priced items in the respective Mechanical Installation Bills of Quantities as attached hereafter.				
	HVAC Installation:				
1	HVAC Installation.	Item			
2	Profit on HVAC Installation.	Item			
3	Attendance on HVAV installation.	Item			
	Wet Services Installation:				
4	Wet Services Installation.	Item			
5	Profit on Wet Services Installation.	Item			
6	Attendance on Wet Services Installation.	Item			
	Fire Protection Installation:				
7	Fire Protection Installation.	Item			
8	Profit on Fire Protection Installation.	Item			
9	Attendance on Fire Protection Installation.	Item			
	TOTAL CARRIED TO FINAL SUMMARY			**R**	

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696

AIR CONDITIONING AND VENTILATION INSTALLATION

FEBRUARY 2024

PREPARED BY:

LUKHOZI CONSULTING ENGINEERS (PTY) LTD
KWA-LUKHOZI
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SELBORNE
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5201

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NAME OF CONTRACTOR:

.....

HVAC SPECIFICATION – REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF 2696

1. GENERAL

The air conditioning and ventilation subcontractor shall be referred to as a tenderer or subcontractor in this document unless specified otherwise.

The scope of work shall include installation of inverter type midwall air conditioning systems, ventilation system, and smoke ventilation systems for the Refurbishment and Construction of Warehouse on Erf 2696, 14 Timber Street, Vulindlela Heights, Mthatha. The subcontractor is advised that the scope will not be limited to the abovementioned and any extra work shall be properly communicated with the subcontractor.

The subcontractor shall be responsible to supply, deliver, install, test, commission and maintain for twelve (12) months of the air conditioning, ventilation installation, and smoke ventilation systems. During the construction, the Engineer shall periodically do quality inspections on the installation which will be communicated with the subcontractor for fixing.

The subcontractor will be required to comply Statutory and Regulatory Requirements as listed in section two (2) of this document.

2. STATUTORY AND LEGAL REQUIREMENT

This section contains acts and clauses that are generally applicable to mechanical engineering construction. The installation shall be completed and tested in accordance with the following requirements or latest issued and amendments of the following:

a) SANS 10400 – 2014: The application of the National building regulations
b) SANS 1238: Ductwork
c) SANS 1125: Room air conditioning and heat pumps
d) SANS 1287-1&2: Ventilation practices and ducting
e) SANS 1424: Filters
f) SANS 10147: Refrigeration Systems
g) SANS 10173: Installation, testing and balancing of air conditioning ductwork.
h) SANS 10142-1&2: Code of Practice for the Wiring of Premises
i) SANS 10103: The measurement and rating of environmental noise with respect to annoyance and to speech communication
j) SANS 1850-2014:The design and manufacture of commercial kitchen extraction/ventilation systems
k) Construction Regulations and Health and Safety Requirements
l) Local Fire Regulations
m) Local Municipal by-laws and regulations
n) The Electricity Act 1996

3. PROGRAMME

The Tenderer shall allow for programming the work in such a manner that if falls within the completion programme of the Main Contractor. Sequence of work to suit Contractor's requirements will not be guaranteed.

4. MAINTENANCE

The subcontractor shall be responsible for maintaining the installation for twelve (12) months from the date of Practical completion at no extra cost. During the twelve months maintenance period, the subcontractor shall visit the site at once a quarter and shall additional to this be notified in case of breakdowns to visit the site and remedy/adjust accordingly. A logbook must be kept and all servicing/repairs must be recorded. The logbook shall be issued to the client after the twelve (12) months guarantee period.

The contractual guarantee period on faulty equipment, materials, and workmanship shall be twelve (12) months and it shall commence on the date of issuing completion certificate by the engineer.

The subcontractor is required to produce a list of spares and where they are available; this shall be documented with the AS-BUILT documentation.

Should such stoppages however be so frequent as to become troublesome, or should the installations otherwise prove unsatisfactory during the said period the Contractor shall, if called upon by the Representative / Agent, at his own expense replace the whole of the installations or such parts thereof as the Representative/Agent or the Director-General may deem necessary with apparatus specified by the Representative / Agent.

5. ELECTRICAL WIRING

Unless specifically stated otherwise in the project specification, the Contractor shall be responsible for all electrical work and control wiring associated with the air conditioning and ventilation and smoke extraction installations with the exception of the incoming power which will be provided by others. Smoke ventilation systems shall be wired with 2-hour fire rated cables.

All electrical work shall comply with the requirements of the local Municipal Authorities and the Code of Practice for the “Wiring of Premises” SANS 10142, as amended.

The contractor shall electrically connect the new air-conditioning units and condensing units. The contractor shall allow for new cables that will run in galvanised wire baskets; allowance should be made for cable terminators and cable glands onto the control panel and main AC DB.

All Electrical Work shall be undertaken by a qualified and registered Installation Electrician as defined in the OHS Act.

6. SYSTEM PERFOMANCE

The subcontractor shall be required to guarantee that the installation will be installed in such a way that it complies with design and specifications, any deviations from the original designs should be discussed and approved by the Engineer. The subcontractor will be notified of any equipment that does not comply to the specifications and shall be deemed to rectify to the satisfaction of the Engineer.

The subcontractor shall be responsible from making sure that the installation does not have excessive vibration and noise.

All materials shall be of the qualities specified in this document.

All the equipment for this installation shall be brand new and undamaged, high standard of workmanship shall be maintained all times.

The subcontractor shall be responsible for producing samples for approval when requested by the Engineer.

7. ALTERNATIVE EQUIPMENT

The subcontractor shall price the works in accordance with the tender documentation. The subcontractor is welcomed to supply an alternative equipment that will comply with the specifications and shall not have a negative financial impact on the project.

The main option is a inverter type midwall AC system, the tenderer is required to price the inverter type midwall AC systemas the main offer.

During tender submission, the alternative equipment can be submitted as an “alternative”.

Alternative equipment offered by the subcontractor shall be of equal or better quality and performance than what is specified. Alternatives offered at tender stage shall be submitted with performance data and cost savings.

The Engineer shall be responsible for approving offered equipment and his/her decision shall be final.

8. NOISE AND VIBRATION

The noise from the equipment shall comply with SANS 10103 and the contractor shall be responsible to make sure that these standards are adhered to. Noise generation from equipment shall be selected to operate as close as possible to maximum efficiency.

The subcontractor shall be responsible to submit noise data of all equipment to the engineer and selected sound attenuators to the Engineer for approval.

The noise from equipment shall not exceed 55 dBA when measured three (3) meters from the source.

9. MATERIALS, SAMPLES AND SHOP DRAWING

The drawings provided with this tender document are general arrangement drawings only. The successful Tenderer shall check all design criteria and submit shop drawings (including builder’ for approval which take into consideration available spaces, builders work requirements, access for maintenance purposes etc).

The contractor must satisfy themselves that the equipment their offer fits at the positions indicated on the drawings and that it will be easily accessible for maintenance or repairs. It is the responsibility of the contractor to verify positions and dimensions on site.

The requirements for proof of compliance with materials specifications, samples and shop drawings are:

- Material specifications
- Shop drawings

The contractor shall supply a list of equipment offered and workshop drawings to the engineer before ordering equipment. It is the responsibility of the contractor to facilitate engineering sessions with the engineer to discuss any discrepancies or clashes. The contractor will then update drawings and submit for approval which will then be used as construction drawings.

The contractor shall, on certain occasions, be required to provide samples on request by the Engineer.

The contractor shall guarantee that all equipment is installed in a manner that it doesn't cause excessive draughts, noise and vibrations. The equipment shall be installed, tested, commissioned to attain the specified design conditions.

All materials and equipment used for this installation shall be new and without any damages.

10. BRANDING AND EQUIPMENT MAKE

The specifications are combined in a manner that does not prejudice against brands; it is pure performance based. The contractor will be allowed to offer equivalent equipment for consideration under these conditions:

The equipment shall comply with the duties/requirements and shall be subject to approval by Engineer.

Equipment shall be of equivalent quality, aesthetics and performance.

The delivery period shall not comprise the final completion of the project and the availability of spare parts is local.

11. ATTENDANCE AND SITE SUPERVISION

The contractor shall make sure that the site is managed in a professional manner and must have a competent person to control and supervise the installation i.e a Contract Manager. The contract manager shall be based on site and shall be responsible for coordination with other services and making sure that all their requirements are passed on to the relevant services. The Contract Manager shall communicate all technical and financial aspects of the project through the main contractor.

12. INSPECTIONS, COMMISSIONING AND TESTING

The Engineer shall, periodically during construction, inspect the installation for quality, contract administration and compliance to the specifications. The Engineer shall notify the subcontractor of any part of the installation that has poor workmanship or not compliant to the specifications, the subcontractor shall be responsible to adjust or amend the installation. At any given time, the Engineer shall inspect the equipment to be installed on site or workshop or a factory. The Engineer shall condemn any poor workmanship or work that is not within the specification and the contractor shall rectify at no extra cost.

On completion of the installation, it shall be tested to the satisfaction of the Engineer and all results shall be recorded in the Operating and Maintenance manuals.

All balancing and testing shall be carried out by the subcontractor entirely at his own expense, and all test instruments shall be checked for accuracy by the Manufacturers, Suppliers, or an approved Laboratory and certified copies of the certificates showing the degree of accuracy shall be supplied to the Engineer, if requested.

The contractor must make sure that the following equipment is available for testing the equipment:

- Velocity meter
- Crane type manometer for balancing valves
- Sling psychrometer
- Clamp on ammeter
- Voltmeter
- Power factor meter
- Ohm meter
- Neon type test lamp
- Ammeter to measure peak motor starting currents

The contractor shall record all measurements taken during testing and shall do the necessary adjustment to make sure that the equipment is operating within the design requirements.

The Contractor shall balance, set, and test the entire plant and shall submit the results to the Engineer who shall then carry out spot checks in the presence of the Contractor.

13. TRAINING

The subcontractor shall be responsible for a detailed training session with the technical department of the Employer/Client.

14. AS-BUILT DRAWINGS AND OPERATION MANUALS

On completion of the project, the subcontractor shall be required to produce three (3) files with the following:

- Index
- General description of installed equipment and systems
- Operating and Maintenance Instructions
- Maintenance Schedules
- Recommended Spares
- Supplier Equipment data
- Equipment Supplier Schedule
- Commissioning data
- Drawings (3 hard copy and in a memory stick in AutoCad and Pdf)

15. WORK BY OTHERS

It is the subcontractor’s responsibility to indicate their requirements to the main contractor. The following work shall be form part of this installation and shall be carried out by others:

- All builders' work including concrete plinths, the forming of holes in walls and making good thereafter.
- The cutting of holes in suspended ceilings and ceiling tiles for the fixing of air conditioning equipment.
- The provision of a 400/420V 3ph 50Hz electrical supply to the air conditioning outdoor units.
- The provision of a 230 V 1 Ph 50 Hz electrical supply to all ventilation systems.
- The provision of a chased in 100 x 50 x 50 back box and conduit with draw wire to the ceiling void above to accommodate installation of hard-wired remote controller supplied with each unit.
- Provision of Certificates of Compliance for all electrical works which forms part of this contract.

16. PAINTING

No untreated metal surfaces shall be permitted on the project. Items which are not galvanised or similarly protected against rust and corrosion, shall be painted.

All black metal work including brackets, hangers, platforms, piping etc. either exposed or concealed shall be thoroughly cleaned, de-scaled and painted with one coat zinc chromate followed by one coat enamel paint, to an approved colour.

Unless specified to the contrary hereafter, all equipment, exposed ducting, pipes, metal parts and insulated and plastered surfaces shall be painted with a primer coat followed by two coats enamel paint, to an approved colour.

17. HOISTING

The subcontractor shall allow for all hoisting and scaffolding associated with this installation. The installation involves the hoisting of condensing units to the first-floor roof slab. All regulations and health and safety procedures pertaining to such work must be noted.

The air conditioning and ventilation equipment is mounted at high level and therefore scaffolding shall be required. It is the responsibility of the subcontractor to make sure that the requirements of the Construction Regulations, OHS Act and Health and Safety procedures are adhered to.

18. DESIGN CONDITIONS

Environmental Conditions:

Summer	:	36˚C dry bulb
	:	24˚C wet bulb
Winter	:	16˚C dry bulb
		15˚C wet bulb
Room conditions:		
Summer	:	23˚C ± 1˚C
	:	50%RH ± 10%
Winter	:	21˚C ± 1˚C
	:	50%RH ± 10%

The room temperature setpoint shall be adjustable between 17˚C and 24˚C.

Ventilation Rates:

Fresh Air	:	7.5l/s per person
Extraction	**:**	20 air changes per hour

Altitude: **:** **747m**

Internal Loads

Heat load from lights : 20W/m^2

Noise level:

The noise level shall not exceed 55dBA when measure at three (3) meters from the sources.

19. AIR CONDITIONING SYSTEMS

The contract shall be the installation of a inverter type AC system to the offices. The condensing units shall be mounted on the wall behind the offices. The system shall include the following:

- Outdoor or Condensing units
- Indoor or Evaporator units
- Refrigerant piping
- Control piping
- Control wiring
- Wired Remote controls

The systems shall be capable of providing temperature control for each individual indoor/evaporator independently of all other units. They shall provide a complete functional system that achieves the designed and specified conditions.

The indoor units shall be a midwall AC units. The position of the wired remote controls to be advised.

All midwall AC units. type indoor/evaporator units shall be factory assembled and tested with the following:

- electronic proportional expansion valves,
- control circuit board,
- factory wiring and piping,
- self-diagnostics,
- auto-restart function,
- 3-minute fused delay and
- Test run switch

They shall have a washable long-life net filter with mildew proof resin filters.

All outdoor/condensing units shall be air-cooled DX refrigeration type compatible for the use with indoor/evaporator units. The system must be able to modulate the compressor capacity automatically to maintain constant suction and condensing pressure while varying refrigerant volume to suit the

required cooling/heating loads. The outdoor condensing units must be capable of heating operation at low end of the operating range as specified, without additional ambient control or auxillary heat source. The refrigerant circuit shall include:

- scroll compressors,
- motors,
- fans,
- condenser coil,
- electronic expansion valves,
- solenoid valves,
- four-way valves,
- distribuition headers,
- capillaries,
- filters
- shut of valves,
- oil separators,
- service ports and
- refrigerant regulators.

The outdoor/condensing unit shall be complete with the following safety devices:

- high pressure sensor and switch,
- low pressure sensor and switch,
- control circuit fuses,
- crankcase heaters,
- fusible plug,
- overload relay,
- inverter overload protector,
- thermal protectors for compressors and fan motors,
- over current protection for the inverter and anti-recycling timers.

There must a provision made of contacts for electrical demand shedding. The units shall have auto restart operation after a power failure without any loss of programmed settings. The units should provide refrigerant sub-cooling to ensure the liquid refrigerant does not flash when supplying to indoor units.

The condensing units shall be weatherproof and corrosion resistant and rust-proofed mild steel panels coated with baked enamel finish. The condenser coils shall be copper tubes expanded into aluminium fins to form mechanical bond, waffle louvre fin and rifled bore tube design to ensure high efficiency performance.

The compressors shall be scroll type, hermitically sealed, variable speed inverter driven and fixed speed combination to suit total capacity. In the event of a compressor failure, operate remaining compressors at proportionally reduced capacity. The microprocessor and associated control should be provided to address this. Each compressor must be fitted with a crankcase heater, high pressure safety switch and internal thermal load protector. Spring mounted vibration isolators must be provided.

The system shall be complete with branch selector boxes which will be designed to control heating/cooling mode selection of downstream indoor units. They shall consist of electronic expansion valves, subcooling heat exchanger, refrigerant control piping and electronics to facilitate the communication between unit and main processor and between branch unt and indoor/evaporator units.

The casing of the branch selector branches shall be galvanized steel with flame and heat resistant foamed polyethylene sound and thermal insulation. Its refrigerant connections shall be braze type. The branch selector units must not require any condensate drainage.

All refrigerant piping will be insulated and vapour sealed with closed cell preformed sections with taped joints; proprietary tape only will be used. The AC Contractor will ensure that the aggregate equivalent suction and liquid refrigerant lines lengths do not exceed the manufacturer's recommended allowances.

All refrigerants are to be R32. If alternatives are proposed they must have an Ozone Depleting Potential of zero.
Refrigeration piping shall be carried out in phosphoric acid deoxidised seamless copper tubing. The piping for R32 shall be as follows.

Outside Diameter (mm)	**Outside Diameter (in)**	**Material**	**Wall Thickeness (mm)**
6.4	1/4	0	0.8
9.5	3/8	0	0.8
12.7	1/2	0	0.8
15.9	5/8	0	1.0
19.1	3/4	0	1.0
22.2	7/8	1/2H	1.2
25.4	1 1/8	1/2H	1.2
28.6	1 3/8	1/2H	1.2
31.8	1 5/8	1/2H	1.2
34.9	2 1/8	1/2H	1.3
38.1	2 5/8	1/2H	1.3

All piping shall be kept properly sealed against moisture and dirt at all times. Bends in soft drawn material shall be made with long radius using proper tools. If hard drawn piping material is used then only long radius brazed bends may be used.

The piping shall be correctly sized using the equipment manufacturer's method or software. The additional refrigerant charge shall be accurately calculated by the same method. The maximum pipe lengths shall be adhered to.

All branch connections shall be by means of "proprietary" type joints as supplied by the air conditioning equipment manufacturer. The joints shall be installed with the connections on a horizontal plane or with the direction of flow in a vertical plane.

Only synthetic oil compatible with the refrigerant shall be used to lubricate any cutting, reaming and flaring tools.

Only phosphor copper brazing rods shall be used without any flux on the piping joints. The pipe work shall be continuously purged with low pressure nitrogen during all brazing operations.

Simple purging of the refrigerant lines between the indoor and outdoor sections is not acceptable. The lines shall be correctly pressure tested with nitrogen plus a small amount of refrigerant to 3.8 MPa for R32 and left for 24 hours to ensure pressure does not drop. The piping shall then be purged using a vacuum pump to –100 kPa (for more than 2 hours) and ensure that it holds this vacuum for 1 hour to the satisfaction of the engineer. The system shall then be charged in the liquid state with the calculated amount of additional refrigerant by using an accurate charging scale (charging cylinder cannot be used). Only once the system is correctly charged shall the refrigerant valves on the outdoor units be opened.
The pipe work arrangement for multiple outdoor units shall be correctly arranged to meet the equipment manufacturer's requirement.

No ozone depleting substances are to be associated with the manufacture or composition of all thermal insulants.

Refrigerant insulation shall be of closed cell structure and be of the vapour barrier type.

Its thermal conductivity shall be not higher than 0.037 W/m °C and be fire retardant material of Class 1.

19.1 QUALITY ASSURANCE

The installation is not brand specific but performance based, on submission of the tender document the contractor must make sure that the manufacturer of the equipment has been manufacturing Heat recovery variable refrigerant volume equipment for at least five (5) years.

The installers must have received an approved training from a manufacturer.

19.2 ENERGY EFFICIENCY

The contractor shall be responsible to select the most energy efficient equipment and shall provide report on the equipment's EER and COP.

20. VENTILATION SYSTEMS

The subcontractor shall supply, install, test and commissioning fresh air and smoke ventilation systems complete with ducting, sound attenuators, cowls, weather louvres, grilles, filters, extract valves, diffusers, flexible ducting, mounting equipment and electrical connections.

The subcontractor shall be required to test and balance the systems. The fan duties are indicated on the drawing.

Fresh air fans shall not exceed 1450 revs/min and each fan shall have its own isolator. The subcontractor is required to provide equipment loads so that they can be incorporated to the electrical installation. The fresh air supply fans into the offices shall be put into a timer that will run during operating hours. Suitable axial flow fans shall be provided and fan motors to be provided with corrosion protection.

The subcontractor is responsible for the electrical connections of fans to isolators that will be supplied by the Electrical Contractor.

The sound attenuators shall be selected in a manner that they will reduce noise level to a minimum noise pressure level of 55dBA.

The subcontractor is responsible for, timeously, indicating and verify builder's work e.g weather louvre holes etc.

21. DUCTING

Fresh air and extract ventilation ducting shall not be insulated. Air conditioning ducting insulation shall be 25mm sonic liner. External ducting on the supply and return side of the rooftop package unit must be cladded.

Ducting shall be manufactured from galvanized sheet steel in accordance with SANS 10173. SMACNA (Sheet Metal and Air Conditioning Contractors National Association Inc. USA, SANS 1238. All ductwork that carries air temperatures below ambient dew point shall be provided with a vapour barrier seal that complies with SANS 10173.

All MEZ flange joints shall be sealed and external joints shall be waterproofed.

Flexible ducting shall be fire retardant and shall have a class 1 fire rating. When requested, the subcontractor shall provide the certification document on the Engineer's request. Only air conditioning flexible ducting shall be insulated, insulation shall be fire retardant fibreglass. Sizes of flexible ducting shall be the same as the neck size of the diffuser connected to it. Flexible ducting shall be securely fixed onto spigots and diffuser neck by steel strapping or cable tires and duct tape wrap. Flexible ducting shall not exceed 1.2m in length.

Sizes are indicated on the drawings.

22. AIR DIFFUSION

22.1 SUPPLY AIR GRILLES

Supply air grilles shall be installed in the offices. Side blow outlets/grilles shall be of "Natal Aluminium", "Trox",or equal and similar manufacture, and shall be either double or single deflection as specified, manufactured from extruded aluminium with anodised or powde rcoated finish. Outlets shall be fitted with opposed blade dampers.

Sizes are indicated on the drawings.

22.2 WEATHER LOUVRES

Outside weather louvers shall be manufactured from extruded aluminium with anodised or powder coated finish. They shall also have backdraft shutters and vermin mesh.

Louvers used for outside air intakes shall be fitted with opposed blade dampers having blades no less than 100mm deep. All outside weather louvers shall be fitted with a vermin proof galvanised wire screen behind the blades. The face velocity of the louvres shall not be less than 2.5m/s at a specified flow or air quantity.

A water seal shall be created behind each weather louvre with clear silicone sealer to prevent ingress of rain water.

Sizes are indicated on the drawings.

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
HVAC INSTALLATION
SCHEDULE 1 : PRELIMINARY AND GENERAL

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	**Contractual Items**				
1.1	Provision of Sureties	Sum	1		
1.2	Insurances	Sum	1		
1.3	Third Party Insurance	Sum	1		
1.4	Guarantee of the Works	Sum	1		
1.5	Provide test results	Sum	1		
1.6	Provision of Record Drawings	Sum	1		
2	**Fixed Cost Items**				
2.1	Site Establishment/Removal	Sum	1		
2.2	Other (Specify)……				
	(i)…….	Sum			
	(ii)……	Sum			
	(iii)…….	Sum			
	(iv)…….	Sum			
	(v)……..	Sum			
3	**Time Related Items**				
3.1	Supervision	Sum	1		
3.2	Project Administration	Sum	1		
3.3	Other Overheads (Specify)				
	(i)…….	Sum	1		
	(ii)……	Sum	1		
	(iii)…….	Sum	1		
	(iv)…….	Sum	1		
	(v)……..	Sum	1		
4	**Commissioning**				
4.1	Testing and Commissioning	Sum	1		
5	**Training**				
5.1	Training of staff on the operation and daily maintenance of the installed equipment under this contract	Sum	1		
	NOTE P&G costs for time related items shall be based on the Contract period specified in the Form of Tender				
	TOTAL CARRIED FORWARD TO SUMMARY				

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
SCHEDULE 2 : HVAC INSTALLATION

ITEM	SPEC REF	DESCRIPTION	UNIT	QTY	MATERIAL RATE	LABOUR RATE	TOTAL AMOUNT
2		**Supply, deliver, install, test and commission equipment as specified including all fixtures, and all required equipment to successfully complete the installation,**					
2.1		**F2 SMOKE EXTRACTION SYSTEM**					
2.1.1		Ø 560 mm smoke spill axial fan	No.	1			
2.1.2		Bell mouth complete with wire mesh screen	No.	1			
2.1.3		Ø 560 mm to 1500x1000 mm Transition Piece	Sum	1			
2.1.4		1500x1000 Weather Louvre	Sum	1			
2.2		**F3 SMOKE EXTRACTION SYSTEM**					
2.2.1		560 diameter smoke spill axial fan	No.	1			
2.2.2		Bell mouth complete with wire mesh screen	No.	1			
2.2.3		Ø 560 to 1500x1000 Transition Piece	Sum	1			
2.2.4		1500x1000 Weather Louvre	Sum	1			
2.2		**Midwall Type Inverter AC Units**					
2.2.1		2.5 kW Nominal Cooling	No.	2			
2.2.2		Wired remote controller with holder and reciever	No.	2			
2.2.3		Condensate drain pump	No.	2			
2.2.3		Outdoor Units anti-corrossion treatment(Bluchem)	No.	2			
2.3		**FRESH AIR SUPPLY DUCTWORK** Unless otherwise specified all fresh air supply sheet metal ductwork shall be supplied without insulation. All duckwork shall be c/w all the necessary galvanized rod and angle					
2.3.1		150x150 mm	m	10			
2.4		**BENDS & FITTINGS**					
2.4.1		150x150 mm - Stop End	No.	1			
2.5		**FRESH AIR FANS** Supply and install low profile mixed flow, sound absorbent fan c/w with all supporting brackets and canvas collars , for continous duty.					
2.5.1		Ø150 mm In-line Duct Supply Fan c/w Downnstream Attenuator 50 l/s @ 150 Pa	No.	1			
2.6		**DIFFUSERS, GRILLES & VALVES**					
2.6.1		150x100 supply grille	No.	2			
2.6.2		150x150 mm hinged weather louvre with filter media	No.	1			
2.6.3		150x150 - 50mm Washable Pleated Panel Filter c/w Filter Box	No.	1			
						TOTAL CARRIED FORWARD TO SUMMARY	

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
HVAC INSTALLATION
SCHEDULE 3 :TEST DAYWORKS

ITEM NO	Spec. Ref	DESCRIPTION	UNIT	QTY	MATERIAL RATE	LABOUR RATE	TOTAL AMOUNT
3.1		Dayworks for unforeseen items to be approved by the Engineer prior to implementation					
3.1.1	n/a	Qualified Artisan	Hrs	40			
3.1.2	n/a	Semi-skilled labourer	Hrs	80			
3.1.3	n/a	Labourer	Hrs	160			
3.2		Snag, test, Balance, commissioning of the following:					
3.2.1		5.6kW Midwall AC unit	sum	1			
3.2.2		7,1kW Midwall AC unit	sum	1			
3.2.3		Extract fans	sum	4			
3.2.4		Fresh air fans	sum	1			
TOTAL CARRIED FORWARD TO SUMMARY							

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
SCHEDULE 4 :REFRIGERANT PIPING

ITEM NO	Spec. Ref	DESCRIPTION	UNIT	QTY	MATERIAL RATE	LABOUR RATE	TOTAL AMOUNT
4.1		For purposes of measuring extra over to piping and fittings measured under the system Bills. Supply and install air conditioning gas piping and fittings for R410A system					
4.1.1		Grade xxx copper piping ø6.35mm	m	1			
4.1.2		Grade xxx copper piping ø9.52mm	m	1			
4.1.3		Grade xxx copper piping ø12.7mm	m	1			
4.1.4		Grade xxx copper piping ø15.88mm	m	1			
4.1.5		Grade xxx copper piping ø19.05mm	m	1			
4.1.6		Grade xxx copper piping ø22.2mm	m	1			
4.1.7		Grade xxx copper piping ø28.58mm	m	1			
4.1.8		Grade xxx copper piping ø34.93mm	m	1			
4.1.9		Grade xxx copper piping ø41.28mm	m	1			
4.2		Gas piping insulation for pipes listed below					
4.2.1		ø6.35mm	m	1			
4.2.2		ø9.52mm	m	1			
4.2.3		ø12.7mm	m	1			
4.2.4		ø15.88mm	m	1			
4.2.5		ø19.05mm	m	1			
4.2.6		ø22.2mm	m	1			
4.2.7		ø28.58mm	m	1			
4.2.8		ø34.93mm	m	1			
4.2.9		ø41.28mm	m	1			
4.3		Supply and install air conditioning gas piping and fittings - elbows					
4.3.1	6,1	ø6.35mm ID	Unit	1			
4.3.2	6,1	ø9.52mm ID	Unit	1			
4.3.3	6,1	ø12.7mm ID	Unit	1			
4.3.4	6,1	ø15.88mm ID	Unit	1			
4.3.5	6,1	ø19.5mm ID	Unit	1			
4.3.6	6,1	ø22.2mm ID	Unit	1			
4.3.7	6,1	ø28.58mm ID	Unit	1			
4.3.8	6,1	ø34.93mm ID	Unit	1			
4.3.9	6,1	ø41.28mm ID	Unit	1			
4.4		Supply and install R410A refrigerant gas	kg	1			
4.5		Supply and install joint kits	Unit	1			
		CARRY FORWARD TO SUMMARY PAGE					**RATE ONLY**

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
HVAC INSTALLATION
FINAL SUMMARY

ITEM No.	DESCRIPTION		TOTAL
1	PRELIMINARIES AND GENERAL		
2	HVAC INSTALLATION		
3	TEST DAYWORKS		
4	AC PIPES AND FITTINGS		RATE ONLY
	SUBTOTAL(EXCL. VAT)		
TOTAL TRANSFERRED TO SECTION 5 BILL No.1 ITEM 1 OF BILLS OF QUANTITIES			

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
14 TIMBER STREET, VULINDLELA HEIGHTS
WET SERVICES INSTALLATION
BILL NO.1 Preliminary and General

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PRELIMINARY & GENERAL				
1	**Contractual Items**				
1.1	Provision of Sureties	Sum	1		
1.2	Insurances	Sum	1		
1.3	Third Party Insurance	Sum	1		
1.4	Guarantee of the Works	Sum	1		
1.5	Provide test results	Sum	1		
1.6	Provision of Record Drawings	Sum	1		
1.7	Other (Specify) ……..	Sum	1		
2	**Fixed Cost Items**				
2.1	Site Establishment / Removal	Sum	1		
2.2	Other (Specify)…TRANSPORT	Sum	1		
3	**Time Related Items**				
3.1	Project supervision	Sum	1		
3.2	Project administration	Sum	1		
3.3	Other Overheads (Specify)	Sum	1		
	a) ……..				
	b) ……..				
	c) ……..				
4	**Commissioning**				
4.1	Test and commission	Sum	1		
4.2	Record drawing and O&Ms	Sum	3		
				TOTAL CARRIED FORWARD TO SUMMARY	

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
14 TIMBER STREET, VULINDLELA HEIGHTS
BILL NO: 2: WET Services Installation

ITEM NO.	DESCRIPTION	UNIT	QTY	MATERIAL RATE	SUPPLY RATE	TOTAL
2	***Work shall comply with the relevant conditions and installation specifications of SANS 10252-1, manufacturers specifications and local By-laws and Regulations. Sub-Contractor shall issue a certificate of compliance in terms of local By-laws upon completion. All works, equipment and practices shall be SABS compliant and equipment stamped as such.*** ***Rates shall include allowance for fixings and bracketing of piping reticulation to vertical walls and soffits.***			**Geberit List Price (ex VAT)**		
2,1	Supply and install Geberit Mepla, or equal alternative, pipe (outside diameter):					
2,1,1	15mm pipes	m	10			
2,1,2	22mm pipes	m	40			
2,1,3	28mm pipes	m	30			
2,2	Supply and install Geberit Mepla, or equal altenative, fittings:					
2,2,1	15mm 90º bend	no	4			
2,2,2	22mm 90º bend	no	14			
2,2,3	28mm 90º bend	no	2			
2,3	Supply and install valves including threaded capillary fittings for connection to sanitary fixtures, etc. to mepla, or equal alternative, pipe:					
2,3,1	22mm Mepla tees	no	5			
2,3,2	28mm Mepla tees	no	1			
2,3,3	22x22x15 Mepla tees	no	2			
2,3,4	28x28x22 Mepla tees	no	3			
2,3,5	15mm stop valve	no	2			
2,3,6	22mm stop valve	no	8			
2,3,7	28mm to 22mm reducer	no	2			
2,3,8	22mm 400kPA PRV	no	2			
2,3,9	28mm 400kPA PRV	no	36			
2,4	Connect new water supply line to exisiting water line.	sum	1			
2,5	Testing of complete installed domestic water systems.	sum	1			
					TOTAL CARRIED FORWARD TO SUMMARY	

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696

14 TIMBER STREET, VULINDLELA HEIGHTS

WET SERVICES INSTALLATION

SUMMARY OF BILL OF QUANTITIES

BILL NO	DESCRIPTION	AMOUNT
1	PRELIMINARY & GENERAL	
2	BILL NO: 2: WET Services Installation	
	SUB TOTAL (Excl. VAT)	
	TOTAL TRANSFERRED TO SECTION 5 BILL No.1 ITEM 4 OF BILLS OF QUANTITIES	

I, ……, on behalf of the Tenderer
…..……..……..……..…….....advise that I have read and priced the installation in accordance with the specifications, drawings and schedules of quantities and that I have satisfied myself that no discrepancies exist between the various documents and the drawings.

_____ _____

TENDERER'S NAME/STAMP SIGNATURE

DATE _____

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696
14 TIMBER STREET, VULINDLELA HEIGHTS
FIRE PROTECTION INSTALLATION
BILL NO.1 Preliminary and General

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PRELIMINARY & GENERAL				
1	**Contractual Items**				
1.1	Provision of Sureties	Sum	1		
1.2	Insurances	Sum	1		
1.3	Third Party Insurance	Sum	1		
1.4	Guarantee of the Works	Sum	1		
1.5	Provide test results	Sum	1		
1.6	Provision of Record Drawings	Sum	1		
1.7	Other (Specify) …….	Sum	1		
2	**Fixed Cost Items**				
2.1	Site Establishment / Removal	Sum	1		
2.2	Other (Specify)…TRANSPORT	Sum	1		
3	**Time Related Items**				
3.1	Project supervision	Sum	1		
3.2	Project administration	Sum	1		
3.3	Other Overheads (Specify)	Sum	1		
	a) ……..				
	b) …….				
	c) …….				
4	**Commissioning**				
4.1	Test and commission	Sum	1		
4.2	Record drawing and O&Ms	Sum	3		
5	Training staff on the operation and daily				
5.1	Staff Training	Sum	1		
	TOTAL CARRIED FORWARD TO SUMMARY				

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696

14 TIMBER STREET, VULINDLELA HEIGHTS

BILL NO: 2: Fire protection Installation

ITEM NO.	DESCRIPTION	UNIT	QTY	MATERIAL RATE	SUPPLY RATE	TOTAL
	Work shall comply with the relevant conditions and installation specifications of SANS 10400 Part T and W, manufacturers specifications and local By-laws and Regulations. Contractor shall issue a certificate of compliance in terms of local By-laws upon completion. All works, equipment and practices shall be SABS compliant and equipment stamped as such.					
2.1	**Fire Hose Reels**					
2.1.1	30m fire hose reel complete with stopcock, shut off nozzle and wall bracket	no	3			
2.1.2	Pressure gauage	no.	3			
2.1.3	25mm Mild steel pipe including painting	m	120			
2.1.4	32mm Mild steel pipe including painting	m	80			
2.2	**Fire Extinguishers**					
2.2.1	4.5kg Dry chemical powder complete with mounting bracket	no	6			
2.3	**Signage**					
2.3.1	190x190 running man with left arrow	no	11			
2.3.2	190x190 running man with right arrow	no	12			
2.3.3	190x190 hose reel, extinguisher & down arrow	no	3			
2.3.4	Illuminated exit signs with battery backup for 60mins	no	1			
					TOTAL CARRIED FORWARD TO SUMMARY	

REFURBISHMENT AND CONSTRUCTION OF WAREHOUSE ON ERF2696

14 TIMBER STREET, VULINDLELA HEIGHTS

SUMMARY OF BILL OF QUANTITIES

BILL NO	DESCRIPTION	AMOUNT
1	PRELIMINARY & GENERAL	
2	BILL NO: 2: Fire protection Installation	
	SUB TOTAL (Excl. VAT)	
	TOTAL TRANSFERRED TO SECTION 5 BILL No.1 ITEM 7 OF BILLS OF QUANTITIES	

_____ _____

TENDERER'S NAME/STAMP SIGNATURE

DATE _____

SECTION NO. 6

OCCUPATIONAL HEALTH AND SAFETY

Item		Unit	Quantity	Rate	Amount

SECTION NO. 6
OCCUPATIONAL HEALTH AND SAFETY
Bill No. 1
OCCUPATIONAL HEALTH AND SAFETY

TRADE PREAMBLES

Trade Preambles:

For Trade Preambles refer to 'General Preambles for Trades 2017' for the full descriptions of material to be used and work to be done in this Bill.

SUPPLEMENTARY PREAMBLES

Supplementary Preambles:

Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent each item.

Prior to pricing the principal contractor must familiarize him/herself with the Occupational Health and Safety Act No. 85 Of 1993, Construction Regulations 2014, other relevant Regulations and Standards as well as project specific Health &Safety specifications.

After pricing of the health and safety bill of quantities, the Contractor must sign the Certificate of Acquaintance as evidence that he is up to date regarding the contents, obligations and demands of the Occupational Health and Safety Act No. 85 Of 1993, Construction Regulations 2014, other relevant Regulations and Standards as well as project specific Health & Safety specifications. Failure, by the Tenderer, to sign the Certificate of Acquaintance may result in the Tender being deemed non-responsive.

OCCUPATIONAL HEALTH AND SAFETY

General:

1	Notify the provincial director in writing of the commencement of construction work with and including submission of a letter of receipt and acknowledgement of the aforementioned notice by the director of his/her representative.	Item			
2	Allow for the necessary Workman's Compensation Fund or FEM contributions for the duration of the project with and including renewals.	Item			
3	Allow for the preparation and approval of project-specific H&S Plan & File (CR 7(1)(a)).	Item			

TOTAL CARRIED TO BILL SUMMARY		**R**	

Section No. 6
Bill No. 1
Occupational Health And Safety

Item		Unit	Quantity	Rate	Amount
4	Allow for the implementation and maintenance of project-specific H&S Plan & File. (CR 7)	Months	8		
5	Allow for the appointment of a Full-Time Registered with SACPCMP Competent Construction Health & Safety Officer to assist in the control of all health and safety related aspects on site as per [CR 8(5)].	Months	8		
6	Provide for appointment of responsible and competent person/s to manage and supervise the works and administer and enforce health and safety on site as per (CR 8(1),(2), &(7)).	Months	8		
7	Allow for provision of telecommunication facilities for the appointed Construction Health & Safety Officer.	Months	8		
8	Allow for provision of Basic Emergency Preparedness and Response equipment & at least Level 2 First Aider/s.	Months	8		
	Provide, supply and maintenance for each worker the following SANS approved personal protective equipment & clothing as per the site-specific risk assessments:				
9	Hard Hats (High Density polyethylene, & 6-point lining). (Contractor is to insert the quantity based on the Contractors own requirements)	No			
10	Overall/work suit (100% Cotton). (Contractor is to insert the quantity based on the Contractors own requirements)	No			
11	Asbestos (personal Protective Equipment). (Contractor is to insert the quantity based on the Contractors own requirements)	No			
12	Rain suits. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
13	Safety boots/shoes (Steel-Toe). (Contractor is to insert the quantity based on the Contractors own requirements)	No			
14	Safety Gumboots (Steel-Toe). (Contractor is to insert the quantity based on the Contractors own requirements)	No			
15	Breathalyzer	No	1		
16	Safety gloves. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
17	Ear Plugs/Muffs. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
18	Dust Mask (at least FF2 type). (Contractor is to insert the quantity based on the Contractors own requirements)	No			
19	Respirators. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
20	Safety goggles/ Eye protective equipment. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
21	Air horn for emergency evacuation.	No	1		
22	OHS Act 85 of 1993 chart, Construction Regulation 2014, EEA 55 of 1998, BCEA 75 of 1997, LRA 66 of 1995.	No	1		
23	Personal Fall arrest and rescue equipment with and including life lines and associated equipment. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
24	High visibility reflective vests and/or bibs. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
25	Temporary handrails, toe boards other than for access scaffolding. (Contractor is to insert the quantity based on the Contractors own requirements)	m			
26	SANS approved safety netting (orange color with minimum of 1,2 meters high). (Contractor is to insert the quantity based on the Contractors own requirements)	m			
27	Allow for normal Pre and Post employment medical examinations. (All employees) (Contractor is to insert the quantity based on the Contractors own requirements)	No			
28	Allow for Pre and Exit medicals for Asbestos medical examinations. (All employees) (Contractor is to insert the quantity based on the Contractors own requirements)	No			
29	Allow for Pre and Post medical examinations for working at heights. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
30	Allow for Pre and Post medical examinations for plant/operators. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
31	Allow for working at heights medical examinations. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 6

Bill No. 1

Occupational Health And Safety

Item		Unit	Quantity	Rate	Amount
32	Mobile toilets and waste removal. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
33	First Aid Box. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
34	Fire Extinguisher Equipment. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
35	1500mm Surveyor Ploses for Barricading net. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
36	Drip trays. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
37	Waste Bins. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
38	Contractor Name Board.	Item			
39	Site Signage. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
40	Provision for drinkable water. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
41	Provision for construction water. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
42	Industrial vacuum cleaner with HEPA filters.	No	1		
43	Disposable respirators. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
44	Disposable overalls. (Contractor is to insert the quantity based on the Contractors own requirements)	No			
45	SANS-Symbolic signs for Asbestos Hazard, MV12, PV1 and PV3. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
46	Polyethylene disposable bags "warning asbestos, do not inhale". (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
47	Plastic drop sheet and duct tape. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
48	Lockable/lidded waste skip. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
49	Toilet facilities for the exclusive use of asbestos workers. (Contractor is to insert the quantity based on the Contractors own requirements)	Item			
	Health and Safety Education:				
50	Allow for HIV/AIDS awareness and Implementation programmes, including STI and TB.	Months	8		
51	Allow for all compulsory health and safety awareness programme (e.g. Inductions, toolbox Talks, Safety Promotions, H&S related training, COVID-19 etc.).	Months	8		
	Environmental:				
52	Provide for adequate handling and storage of materials so as to minimize contamination of ground, air or water.	Item			
53	Provide for the adequate and safe collection and disposal of waste material from site by an approved method.	Item			
54	Provide Facilities and Eating Area for workers.	Item			
55	Provide for rehabilitation on completion of site areas and temporary access routes not covered by construction or landscaping specifications.	Item			
56	Provide for adequate dust control measure, including regular watering of access route.	Item			
57	Provide for stockpiling of topsoil for re-use.	Item			
58	Provide for the removal and disposal of Asbestos roof sheets.	m²	445		
	Compulsory breakdown for the adjustment of preliminaires:				
	Value Related. (R_____)				
	Fixed Value Related. (R_____)				
	Time Related. (R_____)				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

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Bill No. 1
Occupational Health And Safety

Bill No. 1

OCCUPATIONAL HEALTH AND SAFETY

BILL SUMMARY

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SECTION NO. 6

OCCUPATIONAL HEALTH AND SAFETY

SECTION SUMMARY

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Section No. 6
SECTION SUMMARY

SECTION NO. 7

PROVISIONAL AMOUNTS

Item		Unit	Quantity	Rate	Amount
	SECTION NO. 7				
	PROVISIONAL AMOUNTS				
	Bill No. 1				
	PROVISIONAL AMOUNTS				
	PROVISIONAL AMOUNTS				
	The following Selected Sub-Contract amounts are for work to be carried out by selected sub-contractors in terms of clause 15 of the Principal Building Agreement:				
	SUPPLEMENTARY PREAMBLES				
	General:				
	Prime cost amounts and provisional sums are net. Prime cost amounts include for delivery to site of all articles concerned Provisional sums are for material and equipment supplied and installed complete by firms of specialists				
	Profit:				
	Where stated, the contractor may allow for profit if required.				
	General attendance on nominated/selected subcontractors:				
	The item 'Attendance' which follows each provisional sum for nominated/selected subcontractors' work, shall be deemed to cover all the contractor's costs incurred in providing free of charge to the nominated/selected subcontractors, the following:				
	1 The services as set out in clause 12,2 of the JBCC 2000 N/S Subcontract Agreement Edition 6.2 May 2018. 2 Making good in all trades and cleaning down and removal of rubbish on completion.				
	Builder's work:				
	Builder's work in connection with specialist services is given elsewhere in these bills of quantities.				
	LANDSCAPING				
	Landscaping:				
1	Provide the amount of R 25 000.00 (Twenty Five Thousand Rands) for Landscaping.	Item			25 000 00
2	Profit on above item.	Item			
3	Attendance on ditto.	Item			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	SIGNAGE				
	Signage:				
4	Provide the amount of R 30 000.00 (Thirty Thousand Rands) for signage.	Item			30 000 00
5	Profit on above item.	Item			
6	Attendance on ditto.	Item			
	JOINERY FITTINGS				
	Joinery Fittings:				
7	Provide the amount of R 40 000.00 (Forty Thousand Rands) for Joinery Fitting Installation.	Item			40 000 00
8	Profit on above item.	Item			
9	Attendance on ditto.	Item			
	BALUSTRADES				
	Balustrades:				
10	Provide the amount of R 60 000.00 (Sixty Thousand Rands) for Balustrade Installation.	Item			60 000 00
11	Profit on above item.	Item			
12	Attendance on ditto.	Item			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 7
Bill No. 1
Provisional Amounts

Amount

Bill No. 1

PROVISIONAL AMOUNTS

BILL SUMMARY

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TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item		Unit	Quantity	Rate	Amount
	SECTION NO. 7				
	PROVISIONAL AMOUNTS				
	Bill No. 2				
	BUDGETARY ALLOWANCES				
	BUDGETARY ALLOWANCES				
	COMMUNITY LIASON OFFICER				
	Community Liaison Officer Appointment:				
	Within 1 month of the contract commencement, the Main Contractor must employ the services of a suitably competent and experienced Community Liaison Officer (CLO), on a full time basis, for the duration of the project.				
	The CLO shall receive the basic rate of pay of not less than R 8 500.00 per month. All statutory requirements/deductions are excluded from this amount.				
	A provision of 27% is made to cover these items.				
	The Provisional Sum value has been allowed for a 8 month duration.				
	The contractor shall provide the necessary tools of the trade for the CLO to operate effectively. This will include office space and all reasonable furniture and equipment, including controlled access to an internet connected computer, a facsimile machine and a cell phone.				
	The shortlisting of appropriate CLO candidates should require guidance of the Project Steering Committee, yet the Main Contractor shall make the final selection decision after receiving the prior written CLO appointment approval of the Implementing Agent, based on the Main Contractor's written recommendation.				
1	Provide the amount of R 86 360.00 (Eighty Six Thousand, Three Hundred and Sixty Rands) for the employment of a Community Liaison Officer for the duration of the contract. (8 months)	Item			86 360 00
2	Allow for Profit.	Item			
3	Allow for Attendance and other associated costs.	Item			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	COMMUNITY ENGAGEMENT/ PROJECT STEERING COMMITTEE (PSC)				
	Community Engagement/Project steering committee (PSC):				
	The Contractor shall participate in all community engagement activities through the established Project steering Committee (PSC). Provisions for participation in PSC meetings by nominated and approved delegates shall be provided at R 300.00 per person (limited to 5 persons) and a maximum of R 1500.00 per monthly PSC progress meeting. Approval of participants and their payments shall be provided by the Implementing Agent.				
4	Provide the amount of R 12 000.00 (Twelve Thousand Rands) for the project steering committee for the duration of the contract. (8 months)	Item			12 000 00
5	Allow for Profit.	Item			
6	Allow for Attendance and other associated costs.	Item			
	EXPERIENTIAL WORK OPPORTUNITIES				
	Candidate Professional's/ Interns Experiential work opportunities:				
	Candidate Professionals / Interns Experiential Training:				
	Within 1 month of contract award, the Main Contractor shall employ a minimum of 3 candidates for the duration of the construction period. The selection and placement of these appropriate candidates shall be in line with the Target Areas identified below. The Candidates per recommended group should be as detailed here below :				
	• 1 x Building Construction Management;				
	• 1 x Civil/Structural Engineer				
	• 1 x Quantity Surveyor				
	The objective is to assist those candidate technical professionals to obtain professional registration with the appropriate body during the course of the construction project.				
	With the exception of the stipends cost, all costs associated with the internship, including the provision of work tools, facilities and professional registration is a price able item for which the contractor must tender.				
	The designated persons must be placed on site and will be paid a monthly stipend of R 6 500.00 per month by the contractor. All statutory requirements are excluded from this amount. A provision of an additional 27% is made to cover these statutory requirements.				
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Item		Unit	Quantity	Rate	Amount
	The stipend costs shall be defined as a provisional sum. Other associated costs shall be for the Contractor's account and the Contractor must tender accordingly, and should be clearly stipulated in the tender submission.				
7	Provide the amount of R 198 120.00 (One Hundred and Ninety Eight Thousand One Hundred and Twenty Rands) for the employment of three graduates for the duration of the contract (8 Months) for providing experiential work opportunities towards professional registration.	Item			198 120 00
8	Allow for Profit.	Item			
9	Allow for Attendance and other associated costs.	Item			
	TECHNICAL TRAINING				
	Technical Training:				
	Technical Training to benefit non-seconded labour.				
	Within one month of contract commencement, the Main Contractor shall appoint an approved Skills Development Service Provider as the nominated service provider for the provision of technical training for the duration of the project. The Main Contractor shall engage the Implementing Agent/PA to agree upon a practical program, prior to commencement, inclusive of candidate recruitment, in order to deliver the Technical Training deliverable. This shall be submitted to the Implementing Agent within six weeks of the project commencement meeting. Approval to commencement with the technical training programme shall be based on the submission of a proposal made by the contractor for the approval decision of the Principal Agent.				
	The Contractor shall employ all learners participating in the training, after the individual's successful completion of the theoretical component of the training.				
	The employment duration shall be for the balance of construction duration for that trade, with a minimum employment period on site of three months. The employment must be aligned to their practical experiential requirement to enhance their competency in their trained area.				
	The Contractor shall pay for this technical training, inclusive of training provider fees and Learner stipends as detailed above.				
	All technical training shall be recorded on the Labour Management System by the Labour Desk.				
10	Provide the sum of R 180 000.00 (One Hundred and Eighty Thousand Rand) for Technical Training.	Item			180 000 00
11	Allow for Profit.	Item			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 7
Bill No. 2
Budgetary Allowances

Item		Unit	Quantity	Rate	Amount
12	Allow for Attendance other associated costs.	Item			
	TOTAL CARRIED TO BILL SUMMARY			**R**	

Section No. 7
Bill No. 2
Budgetary Allowances

Bill No. 2
BUDGETARY ALLOWANCES
BILL SUMMARY

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TOTAL CARRIED TO SECTION SUMMARY	**R**	

Item		Unit	Quantity	Rate	Amount
	SECTION NO. 7 **PROVISIONAL AMOUNTS** **Bill No. 3** **CONTINGENCY, CPAP, ETC.**				
	MONETARY ALLOWANCES The following monetary provisions are to be omitted from the contract sum and used as directed below.				
	Contingencies:				
1	Provide the sum of R 500 000.00 (Five Hundred Thousand Rand) for contingencies and design contingency, to be used as instructed by the Architect in terms of clause 17 of the Principal Building Agreement.	Item			500 000 00
	Statutory Increases:				
2	Provide the amount of R 350 000.00 (Three Hundred and Fifty Thousand Rand) for CPAP to used in terms of clause 32.13 of the Principal Building Agreement.	Item			350 000 00
	TOTAL CARRIED TO SECTION SUMMARY			**R**	

SECTION NO. 7

PROVISIONAL AMOUNTS

SECTION SUMMARY

TOTAL CARRIED TO FINAL SUMMARY **R**

Section No. 7
SECTION SUMMARY

FINAL SUMMARY

FINAL SUMMARY

Part C3: Scope of work

C3 - Scope of work

C3.1 – Scope of Works

1 Background To ECDC

Vision

To be an innovative leader in promoting sustainable economic growth and development of the Eastern Cape.

Mission

To promote sustainable economic development in the Eastern Cape through focused:

a) Provision of innovative development finance
b) Leveraging of resources, strategic alliances, investment and partnerships.

Legislative Mandate

ECDC draws its mandate directly from the Eastern Cape Development Corporation Act (Act 2 of 1997) and is led by the economic development priorities of the provincial government, as detailed in the Provincial Growth and Development Plan (PGDP), Eastern Cape Provincial Industrial Development Strategy (PIDS), the policy statement and budget speech of the Member of the Executive Council (MEC) of Economic Development, Environment Affairs and Tourism (DEDEAT)

Section 3 of the ECDC Act states that the Corporation shall “plan, finance, co-ordinate, market, promote and implement development of the Province and its people in the field of industry, commerce, agriculture, transport and finance”.

2 Scope of Works

2.1 General description of the works

The description and scope of works, as described hereunder are a general guide only and may be subject to change. No liability or claim will be accepted should this information provided change or be regarded as misleading.

The work comprises the following sections:

2.1 Demolitions and New Work split into 2 Sections (New Build then Demolition and Paving)

Section1 requires the following work:

- Site establishment and associated allowance for access to site works.
- New steel portal framework warehouse.
- New refuse area. New steel gates. New boundary walls.

- Electrical works.
- Mechanical works.

Section 2 requires the following work:

- Demolitions to existing main warehouse building and reception building. Removal of asbestos roofing on both buildings to be demolished.
- New parking area.
- New boundary wall.
- New associated civil works.

2.2 Variation in the Scope of Work

The Client retains the right to omit specific sections of the work prior to signing the contract and in the event that such omissions are incorporated in the contract it is hereby agreed that no claim for loss of profit will be entertained. In addition, tenderers are required to price all work in a "stand-alone fashion" so that profit/mark-up etc are such that omission of any of the tendered works will NOT render the remaining contract work visible.

2.4 Temporary works, etc.

Tenderers are advised that, in view of the nature and extent of the works temporary works are an essential part of the works. Tenderers must therefore fully examine and understand the nature and extent of the proposed works and must allow in their pricing for all access, structures, hoardings and other temporary works. Refer also to Clause 4.2: Enclosure of the Works in the Preliminaries Section of this document.

3. General

3.1 Damage to other services

The Contractor shall assume full responsibility in the event where he or any person in his service is directly or indirectly responsible for any damages caused to other services already installed (water, sewerage, storm water, roads, surveyors' pegs, etc.) Any such damage shall immediately be reported to the Principal Agent.

The Contractor shall be held fully responsible for the repair of such damage to the satisfaction of the Principal Agent.

The costs for the repair of such damage shall be borne by the Contractor. Claims by the Contractor in this connection will not be considered. Should any portion of the works in terms of this Contract, for which the Contractor is responsible, be damaged by other Contractors, the

Contractor shall repair such damage at the tendered rate and shall submit full details of such damage to the Principal Agent so that he can recover such costs from the responsible party.

This repair work may only be done on the written instruction from the Principal Agent.
The contractor shall make provision for a full scan of the area to determine the position of services in the area.

3.2 Local labour and local authorities

Local Labour:

It is intended that the project must make maximum possible use of local labour which is presently unemployed in the area of which the project is performed.

All unskilled labour shall be from the Local Municipal Supply area, and at least 20% of the project value must be for local SMME's.

Engagement of local labour shall be controlled in a formal manner through the client's labour liaison body. It is furthermore expected that the labour liaison body will assist in the monitoring of labour goals.

3.3 Liaison with Local Authorities

The contractor will have to liaise with local authorities regarding the following matters:

3.3.1 Locating of existing underground services.

3.3.2 Protection of existing services during construction.

It is the contractor's onus to immediately contact all these authorities and to accommodate their involvement in his programme of work.

The contractor should also warn the authorities at least 48 hours before the actual work commence.

Compensation for delays, losses or accidents will not be considered should the contractor at any time have failed to keep the local authorities informed.

The Principal Agent or employer must immediately be notified, should the contractor experience any problem regarding work, which involves a local authority.

3.4 Community Liaison and Community Relations

In all dealings with the community and workers employed from within the community, the Contractor shall take due cognisance of the character, culture and circumstances of the community involved and shall at all times use his best endeavours to avoid the development of disputes and to foster a spirit of co-operation and harmony towards the project.

The Contractor shall at all times, keep the Principal Agent fully informed on all matters affecting the contractor and the community, and shall attend all community meetings relating to the project as may be reasonably required by the Principal Agent.

All matters concerning the community shall be discussed and where possible, resolved at such meetings. Where any resolution of a community meeting shall be contrary to the terms and provisions of the Contract, the Contractor shall not give effect thereto without a prior written instruction from the Principal Agent.

Where the Contractor is of the opinion that any instruction of the Principal Agent issued in terms of this clause will result in the incurring of additional costs which were not provided for in his tendered rates and/or that a delay in the progress of the works will result, he shall be entitled to submit a claim in terms of the conditions of contract .

3.5 OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)

Contractors shall meet the health and safety requirements as stipulated in health and safety plan.

3.5.1 Safety Precautions

Notwithstanding the fact that the Contractor is solely responsible for the actions of his staff and any duly appointed sub-contractors, the Principal Agent reserves the right for himself, or his nominated representative, to inspect and monitor working methods and materials handling to ensure that safe working practices are being adhered to at all times.

3.5.2 Health and Safety Specifications

Please refer to Annexure A in Part C.4 for the Health and Safety Specification.

4. CONDITIONS SPECIFIC TO THIS BID

4.1 Responsibilities and duties

Notwithstanding the fact that a description of the services has been provided above, ECDC shall be entitled to request additional services related to deliverables required to ensure the successful completion of the services set out above on such further terms and conditions as may be agreed between the parties in writing.

The service provider shall at all times faithfully and timeously carry out and perform the Services and shall use its best endeavours to properly conduct, improve, extend and develop the business of ECDC in the provisioning of the services.

The Services Provider shall as part of his duties, attend such meetings as may be required by ECDC from time to time and submit weekly or monthly progress reports on the services as may be required and requested by ECDC.

4.2 Obligation to perform and sub-contracting

The bidder shall notify ECDC in writing of all subcontracts awarded under this contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the bidder from any liability or obligation under the contract.

The bidder shall not assign, in whole or in part, its obligations to perform under the contract, except with ECDC's prior written consent.

4.3 Performance guarantee

Within fourteen (14) days of receipt of the notification of contract award, the successful bidder shall furnish to ECDC the performance security of the amount specified above.

The proceeds of the performance security shall be payable to ECDC as compensation for any loss resulting from the bidder's failure to complete his obligations under the contract.

The performance security shall be denominated in the currency of the contract or in a freely convertible currency acceptable to ECDC and shall be in one of the following forms:

A bank guarantee or an irrevocable letter of credit issued by a reputable bank located in South Africa, acceptable to ECDC, in the form provided in the bid documents or another form acceptable to ECDC; or

A cashier's or certified cheque

The performance security will be discharged by ECDC and returned to the bidder not later than thirty (30) days following the date of completion of the bidder's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.

Notwithstanding the provisions above, the bidder shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

4.4 Anti-dumping and countervailing duties and rights

When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, ECDC is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to ECDC or ECDC may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

4.5 ECDC facilities

Unless otherwise agreed in writing by ECDC, the Service Provider will work from its own office and provide its own facilities, such as transport, telephone, cell phone, fax and computer facilities to perform the services.

The service provider may use certain facilities made available by ECDC to assist in performing the services, including but not limited to computer facilities, telephone and fax facilities and stationery. In this regard the service provider agrees to:

Abide by the health, safety and security measures as prescribed by ECDC from time to time;

To use such accommodation and facilities entirely at his own risk and ECDC shall not be liable for any loss or damage whatsoever and howsoever caused arising out of or in connection with the use of these items, other than loss or damage caused as a result of ECDC's own wilful misconduct.

4.6 Force majeure

If a force majeure situation arises, the bidder shall promptly notify ECDC in writing of such condition and the case thereof. Unless otherwise directed by ECDC in writing, the bidder shall continue to perform its obligations under the contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

4.7 Insurance

The contractor shall affect and maintain all required and/or necessary insurances in accordance with Clause 10 of the JBCC Contract Edition 6.2, as applicable.

4.8 Responsibility to perform

Delivery of the goods and performance of services shall be made by the bidder in accordance with the time schedule prescribed by ECDC in the contract.

If at any time during performance of the contract, the bidder or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the bidder shall promptly notify ECDC in writing of the fact of the delay, it's likely duration and its cause(s). As soon as practicable after receipt of the bidder's notice, ECDC shall evaluate the situation and may at his discretion extend the bidder's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

ECDC reserves the right to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the bidder's point of supply is not situated at or near the place where the supplies are required, or the bidder's services are not readily available.

A delay by the bidder in the performance of its delivery obligations may render the bidder liable to the imposition of penalties, unless an extension of time is agreed upon without the application of penalties.

ECDC shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance.

ECDC may also consider termination of the contract.

4.9 Duration of the contract

The construction project duration is **8 Months** from date of appointment.

The successful Bidder shall be required to complete and submit the signed and duly completed **client recommended Services Level Agreement.**

Upon any delay beyond the delivery period in the case of a supplies contract, ECDC shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the bidder's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the bidder. (N/A)

4.10 Payments and tax

Payments shall only be made in accordance with the fees as quoted in this documentation.

Prices charged by the bidder for goods delivered and services performed under the contract shall not vary from the prices quoted by the bidder in this bid, with the exception of any price adjustments authorized at ECDC's request for bid validity extension, as the case may be.

ECDC will reimburse the service provider for expenses and disbursements incurred subject to the submission of satisfactory proof that such expenses and disbursements have been incurred and subject to it being within the budget as indicated in this documentation.

The service provider shall from time to time during this contract duration furnish ECDC with a VAT compliant tax invoice accompanied by a copy of the delivery note and upon fulfilment of other obligations stipulated in the contract.

Each invoice must be accompanied by a detailed timesheet and expense claim forms substantiating the amount claimed.

Payments shall be made promptly by ECDC in Rand, but in no case later than thirty (30) days after submission of a VAT compliant tax invoice and supporting documentation by the service provider if the services have been properly executed as agreed.

The service provider shall retain all proof of expenditure and maintain such accounts and records as are reasonably necessary, claimed above, should ECDC require an audit to substantiate that expenditure and allows ECDC's own personnel or an independent auditor access to those records.

Should the above audit reveal that ECDC has been overcharged, the Service Provider will re-imburse the ECDC the amount overcharged within 30 days inclusive of interest calculated at prime plus 2% per annum.

A foreign bidder shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Republic of South Africa.

A local bidder shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to ECDC.

4.11 Subcontracting

The successful Contractor will subcontract and employ workers from the local communities in close proximity to the project, to execute labour related activities.

C3.2 – Health & Safety Specifications

C3.2 – Health & Safety Specifications

Occupational health and safety specification for construction works contracts

Contents

1 Scope

This health and safety specification in respect of an engineering and construction works contract:

a) provides the overarching framework within which the contractor is required to demonstrate compliance with certain requirements for occupation health and safety established by the Occupational Health and Safety Act of 1993 during construction;

b) establishes the manner in which the contractor is to manage the risk of health and safety incidents in during the construction; and

c) establishes the manner in which the employer's health and safety agent will interact with the contractor.

Note 1 This specification establishes general requirements to enable the employer and the contractor to satisfy aspects of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Construction Regulations, 2014. The contractor is required to develop, implement and maintain package specific health and safety plans. The employer is required to provide certain package specific information to the contractor or a health and safety specification for the works to enable such plans to be formulated. Accordingly, this generic specification on its own cannot ensure compliance with the requirements of the aforementioned Act (See Annexure A).

Note 2 The Construction Regulations, 2014, require an employer to stop any contractor from executing construction work which is not in accordance with the contractor's health and safety plan for the site or which poses to be a threat to the health and safety of persons.

Note 3 This specification establishes generic health and safety requirements. Site specific requirements for health and safety are stated in the scope of work associated with a contract (see Annexure A).

Note 4 The South African Council for the Project and Construction Management Professions has established the following specified categories of registration in terms of the Project and Construction Management Professions Act of 2000 (Act No. 48 of 2000):

a) a Construction Health and Safety Agent who may be appointed by an employer to act as his agent in terms of the Occupational Health and Safety Act of 1993 and the Construction Regulations issued in terms of that Act;

b) a Construction Health and Safety Manager who may be appointed by an employer to complement his professional team or by a contractor to manage company or project health and safety performance and compliance in accordance with the Occupational Health and Safety Act and Regulations; and

c) a Construction Health and Safety Officers who may be appointed by an employer to mitigate the risk on a project or by a contractor to monitor and assist on-site health and safety performance and compliance in accordance with the Occupational Health and Safety Act and Regulations and services.

2 Definitions

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

contractor: person or organization that contracts to provide the works covered by the **contract**

manager: person appointed by the employer to administer the contract on his behalf **competent**

person: any person who:

a) has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications specific to that work or task; and

b) is familiar with the Act and applicable regulations made in terms of the Act **danger:** anything which may cause injury or damage to persons or property

employer: person or organisation that enters into a contract with the contractor for the provision of the works covered by the contract

employer's health and safety agent: the person appointed as agent by the employer in terms of Regulation 4(5) of the Construction regulations and named in the contract data as the being the employer's agent responsible for health and safety matters

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

hazard: a source of or exposure to danger

hazard identification: the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed

health and safety plan: a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified

health and safety specification: a site, activity or project specific document pertaining to all health and safety requirements related to construction works which is included in the contractor's contract with the employer or an order issued in terms of framework agreement **healthy:** free from illness or injury attributable to occupational causes

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

a) any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or to continue with the activity for which he was employed or is usually employed;

b) a major incident occurred; or

c) the health or safety of any person was endangered and where:

i) a dangerous substance was spilled;

ii) the uncontrolled release of any substance under pressure took place; iii) machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or machinery ran out of control

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

major incident: an occurrence of catastrophic proportions, resulting from the use of plant or machinery, or from activities at a workplace **reasonably practicable:** practicable having regard to:

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

risk: the probability that injury or damage will occur **safe**:

free from any hazard

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

a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, bulk mixing plant, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
b) any false work, scaffold or other structure designed or used to provide support or means of access during construction work; or
c) any fixed plant in respect of construction work which includes installation, commissioning, decommissioning or dismantling and where any construction work involves a risk of a person falling

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

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

temporary works: any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction

workplace: any premises or place where a person performs work in the course of his employment

3 Interpretation

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

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

4 Requirements

4.1 General requirement

The contractor shall:

a) create and maintain as reasonably practicable a safe and healthy work environment,

b) execute the works in a manner that complies with all the requirements of the Act and all its associated regulations, and in so doing, minimize the risk of incidents occurring;

c) conspicuously display any site-specific number assigned to the construction site in terms of the Construction Regulations 2014 at the main entrance to the site; and

d) respond to the notices issued by the employer's health and safety agent as follows:

1) Improvement Notice: improve health and safety performance over time so that repeat notices are not issued;

2) Contravention Notice: rectify contravention as soon as possible;

3) Prohibition Notice: terminate affected activities with immediate effect and only recommence activities when it is safe to do so.

Note: Financial penalties can be applied should Contravention Notices be issued. This should be dealt with in the Contract Data.

4.2 Administration

4.2.1 Notification of intention to commence construction work

4.2.1.1 The contractor shall on sites where no construction work permit has been issued by the Provincial Director of the Department of Labour notify such director in writing using a form similar to that contained in Annexure 2 of the Construction Regulations issued in terms of the Act before construction work commences and retain proof of such notification in the health and safety file where the work includes:

a) excavation work;
b) working at height where there is a risk of falling;
c) the demolition of a structure;
d) the use of explosives; or
e) a single storey dwelling for a client who is going to reside in such dwelling upon completion

4.2.1.2 The contractor shall ensure that no work commences on an electrical installation which

requires a new supply or an increase in electricity supply before the person who supplies or contracts or agrees to supply electricity to that electrical installation has been notified of such work.

4.2.1.3 The contractor shall ensure that no asbestos work is carried out before the Provincial Director of the Department of Labour has been notified in writing.

4.2.2 Copy of the Act

The contractor shall ensure that a copy of the Act and relevant regulations is available on site for inspection by any person engaged in any activity on the site.

4.2.3 Good standing with the compensation fund or a licensed compensation insurer

The contractor shall before commencing with any works on the site provide the employer's health and safety representative with proof of good standing with the compensation fund or with a licensed compensation insurer.

4.2.4 Emergency procedures

4.2.4.1 The contractor shall submit for acceptance to the employer's health and safety agent an emergency procedure which include but are not limited to fire, spills, accidents to employees, exposure to hazardous substances, which:

a) identifies the key personnel who are to be notified of any emergency;

b) sets out details including contact particulars of available emergency services; and

c) the actions or steps which are to be taken during an emergency.

4.2.4.2 The contractor shall within 24 hours of an emergency taking place notify the employer's health and safety agent in writing of the emergency and briefly outline what happened and how it was dealt with.

4.2.5 Health and safety file

4.2.5.1 The contractor shall establish and maintain on site a health and safety file which contains copies, as relevant of:

a) the following documents which shall be placed in the file prior to commencing with physical construction activities

   1) copy of the contraction work permit issued in terms of the Construction Regulations 2014;

   2) the contractor's health and safety policy, signed by the chief executive officer, which outlines the contractor's objectives and how they will be achieved and implemented by the contractor;

3) copies of all risk assessments that were conducted

4) the notification made to the Provincial Director of Labour, and if relevant, the notification of the person who supplies or contracts or agrees to supply electricity to that electrical installation;

5) the letters of appointment, as relevant, together with a brief curriculum vitae (CV) of:
   - the construction manager and any assistant construction managers;
   - the construction health and safety manager
   - the construction health and safety officer
   - the risk assessor who is tasked to perform the risk assessments; and
   - the registered person responsible for the electrical installation covered by the Electrical Installations Regulations;
   - the authorised persons responsible for gas appliances, gas system gas reticulation system covered by the Pressure Equipment Regulations;

6) a copy of the certificate of registration of the registered person responsible for the electrical installation covered by the Electrical Installations Regulations;

7) the approval of the design of the part of an electrical installation which has a voltage in excess of 1 kV by a person deemed competent in terms of the Electrical Installations Regulations;

8) proof of registration of the electrical contractor who undertakes the electrical installation in terms of the Electrical Installations Regulations;

9) the preliminary hazard identification undertaken by a competent person;

9) the organogram which outlines the roles of the construction supervisor's assistants and safety officers; and

10) the contractor's health and safety plan;

11) the emergency procedures;

12) the procedure for the issuing and replacement of lost, stolen, worn or damaged personal protective clothing and equipment; and

13) proof that the contractor and all the subcontractors are registered and in good standing with the compensation fund or with a licensed compensation insurer relevant to the type of work performed;

b) the following documents, as relevant, which shall be placed in the file after construction activities have commenced

1) the letters of appointments, if relevant, together with a brief curriculum vitae (CV) of:
   — persons who are required to assist the construction supervisor;
   — construction supervisor for the site in respect of construction works covered by
     the Construction Regulations;
   — competent persons;
   — assistants of construction supervisor; and
   — designers of temporary works;

2) any revisions to the organogram which outlines the roles of the construction supervisor's assistants and safety officers;

3) each and every subcontract agreement and each and every subcontractor's approved health and safety plan;

4) proof that every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer relevant to the type of work performed;

5) proof of all subcontractor's induction training whenever it is conducted;

6) copies of the minutes of the contractor's subcontractor's health and safety meetings;

7) copies of each of the contractor's subcontractors' health and safety policy, signed by the chief executive officer, which outlines the contractor's objectives and how they will be achieved and implemented by the contractor;

8) the health and safety plans of all the contractor's subcontractors who are required to provide such plans;

9) copies of the fall protection plan and each revision thereof;

10) a comprehensive and updated list of all the subcontractors employed on site by the contractor, indicating the type of work being performed by such sub-contractors;

11) the outcomes of the monthly audits for compliance with the approved health and safety plan of each and every sub-contractor working on the site;

12) any report made to an inspector by the health and safety committee;

13) the minutes of all health and safety meetings and any recommendations made to the contractor by the health and safety committee;

14) the findings of all audit reports made regarding the implementation of the contractor's or a subcontractor's health and safety plan;

15) the inputs of the safety officer, if any, into the health and safety plan;

16) details of induction training conducted whenever it is conducted including the list of attendees;

17) proof of the following where suspended platforms are used:

— a certificate of system design issued by a professional engineer, professional certificated engineer or a professional engineering technologist;
— proof of competency of erectors, operators and inspectors;
— proof of compliance of operational design calculations with requirements of the system design certificate;
— proof of performance test results;
— sketches indicating the completed system with the operational loading capacity of the platform;
— procedures for and records of inspections having been carried out;
— procedures for and records of maintenance work having been carried out;
— proof that the prescribed documentation has been forwarded to the provincial director;

18) letters of appointments for competent persons to supervise the activities which law requires to be so supervised;

19) a copy of risk assessments made by competent persons;

20) records of the register of inspections made by a competent person immediately before and during the placement of concrete or any other load on formwork;

21) the names of the first aiders on site and copies of the first aid certificates of competency;

22) the names of the persons the persons who are in possession of valid certificate of competency in first aid and copies of such certificates;

23) medical certificates of fitness for the contractor's and subcontractors' employees specific to the construction work to be performed and issued by an occupational

health and safety practitioner:

24) details of all incidents together with the Contractor's investigative report on such incident;

25) the record of inspections carried out by the designers of structures to ensure compliance with designs; and

26) any other documentation required in terms of regulations issued in terms of the Act including a record of all drawings, designs, materials used and other similar information concerning the completed structure.

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

4.2.5.3 The health and safety file shall be updated to ensure that its contents always reflect the latest available information.

4.2.5.4 The contractor shall hand over a copy of the health and safety file to the employer's health and safety agent upon completion of the contract and if relevant, a certificate of compliance accompanied by a test report for the electrical installation in accordance with the provisions of the Electrical Installation Regulations.

4.2.6 Health and safety committee

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

a) make recommendations to the contractor regarding any matter affecting the health or safety of persons on the site; and

b) discuss any incident on the site in which or in consequence of which any person was injured, became ill or died.

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

4.2.6.3 The contractor shall ensure that minutes of the health and safety committee meetings are kept. The employer's health and safety agent shall be invited to attend such meetings as an observer.

4.2.7 Inspections, formal enquires and incidents

4.2.7.1 The contractor shall inform the relevant safety representative:

a) beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector; and

b) as soon as reasonably practicable of the occurrence of an incident on the site.

4.2.7.2 The contractor shall record all incidents and notify the employer's health and safety agent of any incident, except in the case of a traffic accident on a public road, as soon as possible after it has occurred and report such incidence to an inspector of the department of labour and notify the Provincial Director of the Department of Labour of such incident within 7 days on the prescribed form

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4.2.7.3 The contractor shall investigate all incidents and issue the employer's health and safety agent with copies of such investigations.

4.2.7.4 The contractor shall in the event of an incident in which a person dies, or is injured to such an extent that he is likely to die, or suffered the loss of a limb or part of a limb:

a) notify the Provincial Director of the Department of Labour of such incident by telephone, facsimile or similar means of communication;

b) ensure that no person disturbs the site at which the incident occurred or remove any article or substance involved in the incident therefrom, without the consent of an inspector, unless an action is necessary to prevent a further incident, to remove the injured or dead, or to rescue persons from danger; and.

c) provide the provincial director of the department of labour with a report which includes the measures that the contractor or his subcontractor intend to implement to ensure a safe site as reasonably practicable.

4.2.7.5 The contractor shall notify the Provincial Director of the Department of Labour of the death of any person which results from injuries sustained in an incident.

4.2.8 Personal protective equipment and clothing

The contractor shall ensure that:

a) all workers are issued with the necessary personal protective clothing;

b) all workers are identifiable at all times by having the company for which they work for

printed on the back or front of their overalls; and

c) clear procedures are in place for the replacement of lost, stolen, worn or damage personal protective clothing.

4.3 Appointments

4.3.1 Construction manager

The contractor shall appoint in writing one full time competent person as the construction manager with the duty of managing all the construction on a single site including that of ensuring occupational health and safety compliance. Where appropriate, the contractor shall appoint in writing one or more assistant construction managers.

4.3.2 Appointment of construction health and safety officers

The contractor shall after consultation with the employer after considering the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, prior to commencing the work and if necessary, appoint a full-time or a part-time suitably qualified health and safety officer to assist in the control of all health and safety related aspects on the site.

4.3.3 Construction supervisors

4.3.3.1 The construction manager shall in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site.

4.3.3.2 A contractor shall after considering the size of the project and if considered necessary, appoint in writing one or more competent employees for different sections of the work to assist the construction supervisor.

4.3.4 Competent persons

4.3.4.1 The contractor shall appoint in writing competent persons to supervise or inspect, as relevant, any of the following:

a) formwork and support work operations;
b) excavation work;
c) demolition work;
d) scaffolding work operations;
e) suspended platform work operations;

f) material hoists;

f) bulk mixing plants;

g) temporary electrical installations;

h) the stacking and storage of articles on the site; and

i) fire equipment.

4.3.4.2 The contractor shall appoint in writing competent persons to:

a) induct employees in health and safety; and

b) prepare and update as necessary a fall protection plan and to provide the construction manager with a copy of the latest version of such plan.

4.3.5 Health and safety representatives

4.3.5.1 The contractor shall appoint in writing one health and safety representative for every 50 employees working on the site, whenever there are more than 20 employees on the site, to: a) review the effectiveness of health and safety measures;

b) identify potential hazards and potential major incidents;

c) in collaboration with his employer, examine the causes of incidents;

d) investigate complaints by any employee of the contractor relating to that employee's health or safety on the site;

e) make representations to the contractor on matters arising from a), b), c) or d) or on general matters affecting the health or safety of the employees at the workplace;

g) inspect the site with a view to, the health and safety of employees, at regular intervals;

h) participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace; and

i) participate in any internal health or safety audit.

4.3.5.2 The contractor shall provide the health and safety representatives with the necessary assistance, facilities and training to carry out the functions established in 4.3.1

4.4 Employer's health and safety agent

4.4.1 The employer's health and safety agent shall:

a) audit the contractor's compliance with the requirements of this specification prior to the commencement of any physical construction activities on the site;

b) accept or reject the contractor's health and safety plans, giving reasons for rejecting such plans;

c) monitor the effective implementation of all safety plans;

d) conduct periodic and random audits on the health and safety file to establish compliance with the requirements of this specification;

e) visit the site at regular intervals to conduct site inspections, and based upon such visits issue, wherever necessary, Improvement Notices, Contravention Notices and Prohibition Notices, to the contractor or any of the contractor's subcontractors with a copy to the contract manager and, where relevant, to the contractor.

4.4.2 The contractor shall invite the employer's health and safety agent to audit compliance with the requirements of this specification before commencing with any physical construction activity on the site.

4.5 Creating and maintaining a safe and healthy work environment

4.5.1 General

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

a) cause a preliminary hazard identification to be performed by a competent person before commencing any physical construction activity;

b) evaluate the risks associated with the identified hazard to the health and safety of such employees and the steps that need to be taken to comply with the Act; and

c) as far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.

4.5.1.2 The contractor shall ensure that:

a) all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new

or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work;

b) no structure or part of a structure is loaded in a manner which would render it unsafe; and

c) account of information, if any, provided by the designer of the structure is taken into account in the risk assessment;

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

4.5.1.3 The contractor shall carry out regular inspections and audits to ensure that the works are being performed in accordance with the requirements of this specification.

4.5.2 Risk assessment

4.5.2.1 The contractor shall before the commencement of any work on site and during construction work, cause a risk assessment to be performed by a competent person appointed in writing. Such an assessment shall as a minimum:

a) identify hazards to which persons may be exposed to;

b) analyse and evaluate the identified risks associated with the identified hazards;

c) document a plan of safe work procedures, including the use of any personal protective equipment or clothing and the undertaking of periodic “toolbox talks” or inductions before undertaking hazardous work, to mitigate, reduce or control the risks and hazards that have been identified;

d) provide a monitoring plan; and

e) provide a review plan.

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

1) Identify the hazards by looking at what could reasonably be expected to cause harm, ask employees or their representatives what they think, obtain advice from trade associations or publications on health and safety, check manufacturer’s instructions or data sheets for chemicals and equipment as they can be very helpful in spelling out the hazards and putting them in their true perspective, review accident and ill-health records, think about long-term hazards to health (e.g. high levels of noise or exposure to harmful substances) as well as

safety hazards etc.

2) Identify who may be harmed and how by identifying how individuals and groups of people might be harmed i.e. what type of injury or ill health might occur.

3) Evaluate the risks and decide on precautions by doing everything 'reasonably practicable' to protect people from harm i.e. by looking at how things are done, what controls are in place and how the work is organised and comparing this against good practice to see if more can be done to bring practices up to standard. Consider if the hazard can be removed all together, and if not how can the risks be controlled so that harm is unlikely, e.g. try a less risky option (e.g. switch to using a less hazardous chemical); prevent access to the hazard (e.g. by guarding); organise work to reduce exposure to the hazard (e.g. put barriers between pedestrians and traffic); issue personal protective equipment (e.g. clothing, footwear, goggles etc); and provide welfare facilities (e.g. first aid and washing facilities for removal of contamination).

4) Record the findings by writing down the findings of the risk assessment.

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

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

a) all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;

b) no person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder;

c) notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;

d) fall prevention and fall arrest equipment is:

— suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and

— securely attached to a structure or plant and the structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;

e) fall arrest equipment is only used where it is not reasonably practicable to use fall prevention equipment; and

f) suitable and sufficient steps are taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.

4.5.2.4 Where roof work is being performed on a construction site, the contractor shall ensure

that it is indicated in the fall protection plan that: a) the roof work has been properly planned;

b) the roof erectors are competent to carry out the work;

c) no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees;

d) prominent warning notices are to be placed where all covers to openings are not of sufficient strength to withstand any imposed loads and where fragile material exists;

e) the areas mentioned in paragraph *(d)* are to be suitably barricaded off to prevent persons from entering;

f) suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and

g) there is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so far as is reasonably practicable, the fall of any person, material or equipment.

4.5.3 Health and safety plans

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

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

a) the information contained in Table 1 in respect of each of the hazards associated with work falling within the scope of the contract); and

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

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

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

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

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

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

4.5.3.6 The contractor shall review and update the health and safety plan whenever changes to the works are brought about or following the occurrence on an incident.

4.5.4 Responsibilities towards employees and visitors

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

4.5.4.2 The contractor shall ensure that all employees under his or her control and the employees of his subcontractors who are performing construction works are:

a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and

b) issued with proof of health and safety induction training issued by a competent person and carry proof of such induction when working on site.

4.5.4.3 The contractor shall cause a record of training to be kept which indicates the training dates, the names, identity numbers and job description of all those who attended such training and the name, identity number and competence of the person who provided the training.

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

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

a) undergoes health and safety instruction pertaining to the hazards prevalent on the site; and

b) is provided with the necessary personal protective equipment.

4.5.4.6 The contractor shall provide suitable on-site signage to alert workers and visitors to health and safety requirements. Such signage shall include but not be limited to: a) unauthorized entrance prohibited;

b) signage to indicate what personal protective equipment is to be worn; and

c) activity related signs.

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

4.5.5 Subcontractors

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

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

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

4.5.5.2 The contractor shall provide any sub-contractor who is submitting a tender or appointed to perform a sub-contract falling within the scope of the contract, with the relevant sections of this specification and the health and safety specification.

4.5.5.3 The contractor shall discuss and negotiate with each subcontractor performing construction works the subcontractor's health and safety plan and approve that plan for implementation.

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

a) potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;

b) each subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to their performance of work on site;

c) all the subcontractor's employees have a valid medical certificate of fitness specific to th

construction works which are to be performed which is issued by an occupational health and safety practitioner;

d) all sub-contractors co-operate with each other to enable each of those sub-contractors to comply with the requirements of the Act and associated regulations;

e) each subcontractor performing construction works has and maintains a health and safety file containing the relevant information described in 4.2.5; and

f) each sub-contractor's health and safety plan is implemented and maintained.

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

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

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

4.5.5.8 The contractor shall ensure that:

a) every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site;

b) potential subcontractors submitting tenders have made provision for the cost of health and safety measures during the construction process; and

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

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

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

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

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

a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and

b) issued with proof of health and safety induction training issued by a competent person and carry proof such induction when working on site.

4.5.5.13 The contractor shall undertake a risk assessment together with subcontractors whenever subcontractors are working in close proximity to other subcontractors particularly activities involve excavations, the moving of earth, the movement of heavy machinery and working at heights.

4.5.6 First aid, emergency equipment and procedures

4.5.6.1 The contractor shall where more than five employees are employed at a workplace, provide a first aid box or boxes at or near the workplace which shall be available and accessible for the treatment of injured persons at that workplace. Such first aid boxes shall contain suitable first aid equipment which includes the items listed in the General Safety Regulations issued in terms of the Act.

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

4.5.7 Facilities for workers

4.5.7.1 The contractor shall provide and keep clean and fit for use at or within reasonable access of the site:

a) at least one shower facility for every 15 workers;

b) at least one sanitary facility for every 30 workers;

c) changing facilities for each gender; and

d) sheltered eating areas.

4.5.7.2 A contractor shall provide reasonable and suitable living accommodation for the workers at construction sites which are remote from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

4.6 Design of temporary work

The contractor shall:

a) provide the health and safety agent with the names and contract particulars of the designers involved in the design of temporary works;

b) issue the designers with a copy of the health and safety specification as well as any pertinent information contained in the contract; and

c) provide the health and safety agent with certificates issued by the designer of the temporary works that such works are fit for purpose before such works are used in support construction activities.

Annexure A: Incorporating this specification in procurement documents

A1 The Occupational Health and Safety Act of 1993 (Act No. 181 of 1993) requires amongst other things that every employer provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees (see section 8). The Act holds the employer liable for acts of omission of employees or mandataries (i.e. agents, contractors, or a subcontractor) unless it is proved that permission was not given to the employee or mandatory to act or fail to act in a manner which has obviously resulted in the flouting of the law, the employee or mandatary was acting outside the scope of his or her authority and that the questionable conduct of the employee or mandatary was not a condition laid down by the employer and the employer took reasonable steps to prevent the questionable / unlawful conduct of the employee or mandatary (see Section 37 of the Act). The employer can be relieved of this liability if the mandatary enters in writing into an agreement with the employer which sets out the arrangements and procedures to ensure compliance by the mandatary with the provisions of the Act.

A2 The Construction Regulations 2014 require employers (clients) to enter into written agreements with contractors (principle contractors). These Regulations are specifically designed to force inter- action between the various role players in construction work. The employer is required to, amongst other things:

a) provide the contractor with a documented health and safety specification for the construction work;

b) provide the contractor with information which can affect the health and safety of anyone carrying out the construction works;

c) take reasonable steps including periodic audits to ensure that the contractor implements and maintains his or her health and safety plan;

d) stop where necessary any work which is not in accordance with the health and safety plan;

e) ensure that tenderers have made provision for health and safety measures in the construction process; and

f) discuss, negotiate and approve health and safety plans produced by the contractor.

The employer may, however, appoint an agent to act as his or her representative and where such an appointment is made, the responsibilities as are imposed by the regulations upon an employer, as far as reasonably practicable, are imposed upon the agent.

A3 The designer of a structure is required to provide the employer with all relevant information about the structure which can affect the pricing of the structure, inform the contractor in writing of any known or anticipated dangers or hazards relating to the construction work and make available to the contractor all relevant information required for the safe execution of the work, geotechnical information, structural design loads and methods and sequence of construction.

A4 The CIDB Standard for Uniformity in Construction Procurement requires that procurement documents comprise a number of component documents including the:

a) scope of work i.e. the document that specifies and describes the goods, services, or engineering and construction works which are to be provided and any other requirements and constraints relating to the manner in which the contract work is to be performed

b) site information i.e. the document that describes the site as at the time of tender, to enable the tenderer to price his tender and to decide upon his method of working and programming

A5 Occupational health and safety is a constraint relating to the manner in which the contract work is to be performed. The scope of work needs to identify the high-level package specific hazards identified by the employer and communicate to the contractor any information which can affect the health and safety of anyone carrying out the construction works and can influence the pricing of the contract. It should also contain information provided by the designer of structures relating to any known or anticipated dangers or hazards relating to the construction work and all relevant information required for the safe execution of the work, geotechnical information, structural design loads and methods and sequence of construction if not shown on the construction drawings. It also needs to incorporate by reference this specification.

A6 Package specific information such as geotechnical information and existing buildings containing asbestos products should be included in the specifications.

C4 – SITE INFORMATION / DRAWINGS

C4 – Site Information

Site Location: Mthatha, Eastern Cape

ERF No. 2696

Street Address: 14 Timber Street, Vulindlela Heights

Size: 4092 sqm

Local Municipality: King Sabatha Dalindyebo Local Municipality

District Municipality: OR Tambo District Municipality

GPS Coordinates: 31°36'22.99"S and 28°46'48.72"E.

Google Image showing locality map.

Google Image showing locality map.

C4 – Drawings

List of Drawings Below:

Architectural
MDA 483 – 100
MDA 483 – 101
MDA 483 – 102
MDA 483 – 103
MDA 483 – 104
MDA 483 – W01 to W06
MDA 483 – D01 to D05
MDA 483 – RSD01 and RSD02
MDA 483 – G01 to G03

Structural Engineering
1764-004-S-001
1764-004-S-002
1764-004-S-003

Civil Engineering
1764-004-GEN-002
1764-004-GEN-003
1764-004-GEN-010
1764-004-GEN-011

Annexure M – Contract Data

PART C1.2: CONTRACT DATA

The Joint Building Contracts Committee® - NPC
CONTRACT DATA
For use by ORGANS OF STATE and other PUBLIC SECTOR BODIES
Principal Building Agreement
Edition 6.2 - May 2018

A PROJECT INFORMATION

A1.0 Works [1.1]

Project name	**Refurbishment and Construction of Warehouse on ERF 2696, 14 Timber Street Vulindlela Heights – (Mthatha Cluster G)**
Reference number	**ECDC/INFRA/32/012024**
Works description	Proposed Steel Portal Frame Warehouse and Associated Civil, Electrical and Mechanical Works

A2.0 Site [1.1]

Erf / stand number	ERF 2696
Township / Suburb	Vulindlela Heights, Mthatha
Site address	14 Timber Street
Local authority	King Sabatha Dalindyebo Local Municipality

A3.0 Employer [1.1]

Official Name of Organ of State / Public Sector Body	**Eastern Cape Development Corporation (ECDC)**
Business registration number	*To be determined*
VAT/ number	4460180955
Country	South Africa
Employer's representative: Name	Mr Mzwandile Njozela
Telephone number	043 704 5601

Physical address	**Ocean Terrace Park** **Moor Street** **Quigney** **East London** **South Africa**

A4.0 Principal Agent [1.1]

Name	MDA Architects			
Legal entity of above	MDA Architects cc	Contact person	Buntu Sipuka	
Practice number		Telephone number	041 373 0228	
		Mobile number	082 373 4264	
Country	South Africa	E-mail	reception@mdaarch.co.za	
Postal address	PO Box 1498, Mthatha		Postal Code	5099
Physical address	11 Park Road, Central, Mthatha		Postal Code	5099

A5.0 Agent [1.1]

Discipline	Architect			
Name	MDA Architects			
Legal entity of above	MDA Architects cc	Contact person	Buntu Sipuka	
Practice number		Telephone number	041 373 0228	
		Mobile number	082 373 4264	
Country	South Africa	E-mail	receptionpe@mdaarch.co.za	
Postal address	PO Box 1498, Mthatha		Postal Code	5099
Physical address	11 Park Road, Central, Mthatha		Postal Code	5099

A6.0 Agent [1.1]

Discipline	Quantity Surveyor			
Name	Imvelo Quantity Surveyors CC			
Legal entity of above	Imvelo Quantity Surveyors CC	Contact person	Mike Rooney	
Practice number	2002/002451/23	Telephone number	043 748 5209	
		Mobile number	082 376 3213	
Country	South Africa	E-mail	mike@imveloqs.co.za	
Postal address	PO Box 710, Gonubie		Postal Code	5256

Physical address	81 Beaconhurst Drive, Beacon Bay	Postal Code	5241

A7.0 Agent [1.1]

Discipline	Civil Engineer			
Name	Lukhozi Consulting Engineers (Pty) Ltd			
Legal entity of above	Lukhozi Consulting Engineers Pty (Ltd)	Contact person	Conrad Bezuidenhout	
Practice number	2000/006344/07	Telephone number	041 363 1984	
		Mobile number	081 264 8063	
Country	South Africa	E-mail	c.bezuidenhout@lukhozi.co.za	
Postal address	Same as physical		Postal Code	
Physical address	36 Pickering Street, Newton Park, Gqeberha		Postal Code	6045

A8.0 Agent [1.1]

Discipline	Structural Engineer			
Name	Lukhozi Consulting Engineers (Pty) Ltd			
Legal entity of above	Lukhozi Consulting Engineers Pty (Ltd)	Contact person	Louis Coetzer	
Practice number	2000/006344/07	Telephone number	043 721 1321	
		Mobile number	082 894 0816	
Country	South Africa	E-mail	l.coetzer@lukhozi.co.za	
Postal address	Same as physical		Postal Code	
Physical address	36 Pickering Street, Newton Park, Gqeberha		Postal Code	6045

A9.0 Agent [1.1]

Discipline	Electrical Engineer			
Name	Lukhozi Consulting Engineers (Pty) Ltd			
Legal entity of above	Lukhozi Consulting Engineers Pty (Ltd)	Contact person	Bernard Oosthuizen	
Practice number	2000/006344/07	Telephone number	021 686 2550	
		Mobile number	082 410 9577	
Country	South Africa	E-mail	b.oosthuizen@lukhozi.co.za	
Postal address	Same as physical		Postal Code	
Physical address	36 Pickering Street, Newton Park, Gqeberha		Postal Code	6045

A10.0 Agent [1.1]

Discipline	Mechanical Engineer			
Name	Lukhozi Consulting Engineers (Pty) Ltd			
Legal entity of above	Lukhozi Consulting Engineers Pty (Ltd)	Contact person	Bruce Maliti	
Practice number	2000/006344/07	Telephone number	043 721 1321	
		Mobile number	073 796 9069	
Country	South Africa	E-mail	b.maliti@lukhozi.co.za	
Postal address	Same as physical		Postal Code	
Physical address	36 Pickering Street, Newton Park, Gqeberha		Postal Code	6045

A11.0 Agent [1.1]

Discipline	Occupational Health and Safety Agent			
Name	To be determined			
Legal entity of above	To be determined	Contact person	To be determined	
Practice number		Telephone number	--	
		Mobile number	--	
Country	South Africa	E-mail	--	
Postal address	--		Postal Code	--
Physical address	--		Postal Code	--

A12.0 Agent [1.1]

Discipline				
Name				
Legal entity of above		Contact person		
Practice number		Telephone number		
		Mobile number		
Country		E-mail		
Postal address			Postal Code	
Physical address			Postal Code	

B CONTRACT INFORMATION

B 1.0 Definitions [1.1]

Bills of quantities: System/Method of measurement	**Standard System of Measuring Building Work (Sixth Edition) as amended**

B 2.0 Law, regulations, and notices [2.0]

Law applicable to the **works**, state country [2.1]	**Republic of South Africa**

B 3.0 Offer and acceptance [3.0]

Currency applicable to this **agreement** [3.2]	**South African Rand**

B 4.0 Documents [5.0]

The original signed **agreement** is to be held by the **principal agent** [5.2], if not, indicate by whom	**Employer**
Number of copies of **construction information** issued to the **contractor** at no cost [5.6]	**Three (3)**

Documents comprising the **agreement**	Page numbers
The **JBCC®** Principal Building Agreement, Edition 6.2 May 2018	1 to 30
The JBCC® Principal Building Agreement - Contract Data for Organs of State and other Public Sector Bodies, Edition 6.2 May 2018	1 to 19
The JBCC® General Preliminaries for use with the JBCC® Principal Building Agreement, Edition 6.2 May 2018	1 to 7

Contract drawings – description	Number	Revision	Date
Architectural drawings issued for tender, as attached.			
Civil Engineering drawings issued for tender, as attached.			
Structural Engineering drawings issued for tender, as attached.			
Electrical Engineering drawings issued for tender, as attached.			
Mechanical Engineering drawings issued for tender, as attached.			

B 5.0 Employer's Agents [6.0]

Authority is delegated to the following **agents** to issue **contract instructions** and perform duties for specific aspects of the **works** [6.2]
MDA Architects, **Lukhozi Consulting Engineers**

Principal agent's and **agents'** interest or involvement in the **works** other than a professional interest [6.3]
None

B 6.0 Insurances [10.0]

Insurances by **employer**			Amount including tax	Deductible amount including tax
Yes / No:	**No**			
Contract works insurance:			N/A	
	New **works** [10.1.1] (**Contract sum** or amount)		N/A	
or	**Works** with **practical completion** in **sections** [10.2] (**contract sum** or amount		N/A	
or	**Works** with alterations and additions [10.3] (reinstatement value of existing structures with or including new **works**)		N/A	
	Direct contractors [10.1.1; 10.2] where applicable, to be included in the contract works insurance		N/A	
	Free issue [10.1.1; 10.2] where applicable, to be included in the contract works insurance		N/A	
	Escalation, professional fees and reinstatement costs if not included above		N/A	
Total of the above contract works insurance amount			N/A	
Supplementary insurance [10.1.2; 10.2]			N/A	
Public liability insurance [10.1.3; 10.2]			N/A	
Removal of lateral support insurance [10.1.4; 10.2]			N/A	
Other insurances [10.1.5]			N/A	
Yes/ No?	No	If yes, description 1		
			NA	
Yes/ No?	No	If yes, description 2		

and/or

Insurances by **Contractor**		Amount including tax	Deductible amount including tax
Yes / No:	**Yes**		
	New **works** [10.1.1] (**Contract sum** or amount)	N/A	N/A
or	**Works** with **practical completion** in **sections** [10.2] (**contract sum** or amount)	**To the minimum value of the contract sum + 10%**	**With a deductible not exceeding 5% of each and every claim**

or	**Works** with alterations and additions [10.3] (reinstatement value of existing structures with or including new **works**)	**To the minimum value of the contract sum + 10%**	**With a deductible not exceeding 5% of each and every claim**
	Direct contractors [10.1.1; 10.2] where applicable, to be included in the contract works insurance	N/A	
	Free issue [10.1.1; 10.2] where applicable, to be included in the contract works insurance	N/A	
	Escalation, professional fees and reinstatement costs if not included above	N/A	
Total of the above contract works insurance amount		**To the minimum value of the contract sum + 10%**	
Supplementary insurance [10.1.2; 10.2]		**To the minimum value of the contract sum + 10%**	
Public liability insurance [10.1.3; 10.2]		R20 million	
Removal of lateral support insurance [10.1.4; 10.2]		N/A	
Other insurances [10.1.5] Refer B17.0			
Yes/ No?	Yes	If yes, description 1	TBC
Hi Risk Insurance [10.1.5.1]			
Yes/ No?	No	If yes, description 2	N/A

B 7.0 Obligations of the employer [12.1]

Existing premises will be in use and occupied [12.1.2]	**Yes / No?**	**Yes**
If yes, description	The Contractor will, throughout the entire period of the works, be responsible for the proper and adequate protection of property and the public and ECDC's personnel from damage or injury resultant from the works and for the proper security of the site at all times during the course of the works. Further, the Contractor must allow for all temporary hoardings, walkways, etc. required by the Local Authorities, National Building Regulations. OHS Act and or demanded by his own requirements. All allowances for the safe removal and disposal of asbestos material are deemed to be priced in the removal of existing roofing and other asbestos containing material. Allowance must further be made for periodic adjustment of any hoardings/ temporary fencing and for their eventual removal and for making good. All other temporary fencing hoardings etc. Required must be priced for in the Preliminaries of these Bills of Quantities. Allowance must be made for periodic adjustment of any hoardings aligned to the project phasing and for their eventual removal and for making good. The contractor shall keep the site, structures, etc. well-watered during operations to prevent dust and shall provide and erect and remove on completion of the works all necessary temporary dust screens all to the satisfaction of the principal agent.	
Restriction of working hours [12.1.2]	**Yes / No?**	**No**

If yes, description			
Natural features and known services to be preserved by the contractor [12.1.3]		**Yes / No?**	**No**
If yes, description			
Restrictions to the site or areas that the contractor may not occupy [12.1.4]		**Yes / No?**	**Yes**
If yes, description	Work areas and restricted areas are defined on the drawing no MDA 483-106 specifying the site establishment.		
Supply of free issue [12.1.10]		**Yes / No?**	**No**
If yes, description			

B 8.0 Nominated subcontractors [14.0]

Yes / No?	**No**	**If yes, description of specialisation**
Specialisation 1		
Specialisation 2		
Specialisation 3		
Specialisation 4		
Specialisation 5		
Specialisation 6		
Specialisation 7		
Specialisation 8		
Specialisation 9		

B 9.0 Selected subcontractors [15.0]

Yes / No?	**No**	**If yes, description of specialisation**
Specialisation 1		Signage
Specialisation 2		Joinery fittings
Specialisation 3		Landscaping
Specialization 4		Balustrading
Specialization 5		
Specialisation 6		
Specialisation 7		
Specialisation 8		
Specialisation 9		
Specialisation 10		

B 10.0 Direct contractors [16.0]

Yes / No?	No	If yes, description of extent of work
Extent of work [12.1.11]		
Extent of work [12.1.11]		
Extent of work [12.1.11]		
Extent of work [12.1.11]		
Extent of work [12.1.11]		

B 11.0 Description of sections [20.1]

Section 1	• Site establishment and associated allowance for access to site works. • New steel portal framework warehouse of 650 sqm. • New refuse area. New steel gates. New boundary walls. • Electrical works. • Mechanical works.
Section 2	• Demolitions to existing main warehouse building (400 sqm) and reception building (60sqm). Removal of asbestos roof sheet on both buildings to be demolished. • New parking area. • New boundary wall. • New associated civil works.
Section 3	N/A
Section 4	N/A
Section 5	N/A
Section 6	N/A

B 12.0 Possession of site [12.1.5], practical completion [19.0; 20.0] and penalty [24.0]

Practical completion for the works as a whole	Intended date of possession of the site Refer B17.0 [12.1.5; 12.2.22]	Period for inspection by the principal agent [19.3]	The date for practical completion shall be the period as indicated below from the date of possession of the site by the contractor [12.2.7; 24.1]	Penalty for late completion [24.1]
		working days	Period in months	Penalty amount per calendar day (excl. tax)
		N/a	**N/a**	**N/a**

or where **sections** are applicable

Practical completion of a section of the works	Intended date of possession of the site Refer B16.0 [B4.1]	Period for inspection by the principal agent [19.3]	The date for practical completion shall be the period as indicated below from the date of possession of the site by the contractor [12.2.7; 24.1]	Penalty for late completion [24.1]
		Working days	Period in months	Penalty amount per calendar day (excl. tax)
Section 1		**5 working days**	**06 Months**	**4 cents/R100 of contract amount**
Section 2		**5 working days**	**02 Months**	**4cents/R100 of contract amount**
Section 3				
Section 4				
Section 5				
Section 6				
Section 7				
Section 8				
Remainder of the				

Criteria to achieve **practical completion** not covered in the definition of **practical completion**
No further Criteria

B 13.0 Defects liability period [21.0]

Extended defects liability period: Refer B17.0 [21.13]		**Yes / No?**	**Yes**
If yes, description of applicable elements	**13.1 Electrical Installations 12 months** **13.2 Mechanical Installations 12 months**		

B 14.0 Payments [25.0]

Date of month for issue of regular **payment certificates** [25.2]	**25th**		
Contract price adjustment / Cost fluctuations [25.3.4; 26.9.5]	**Yes / No?**	**Yes**	**Base Month: Month of tender closing**
If yes, method to calculate	**JBCC Contract Price Adjustment Provisions (CPAP)**		
Employer shall pay the **contractor** within: [25.10]	**Thirty (30) calendar days**		

B 15.0 Dispute resolution [30.0]

Adjudication [30.6.1; 30.10] Name of nominating body	**Refer to Part C1.3 Dispute Resolution Mechanism**	
Applicable rules for adjudication [30.6.2]	**Adjudication in accordance with the CIDB adjudication process**	
Arbitration [30.7.4; 30.10]	**Yes / No?**	**Yes**
If Yes, name of nominating body ***If No, then dispute will be referred to litigation	**Association of Arbitrators SA**	
Applicable rules for arbitration [30.7.5]	N/A	

B 16.0 JBCC® General Preliminaries – selections

Provisional bills of quantities [B2.2]	**Yes / No?**	**Yes**
Availability of construction information – is the construction information complete? [B2.3]	**Yes / No?**	**No**
Previous work - dimensional accuracy - details of previous contract(s) [B3.1]	N/A	
Previous work - **defects** - details of previous contract(s) [B3.2]	N/A	
Inspection of adjoining properties - details [B3.3]	N/A	
Handover of **site** in stages - specific requirements [B4.1]	Yes, section 2 shall commence immediately after declaration of practical completion of section 1.	
Enclosure of the **works** - specific requirements [B4.2]	The contractor will be restricted to work only within the area demarcated for that specific project work section as per site establishment drawings. See drawing no MDA 483D-106. The contractor is to note that the project is being constructed in sections as set out in B11, which might result in the contractor having to de-establish and re-establish the site office on site to suite their own requirements. The contractor must take cognisance of the above restrictions and sectional completion of the project and price the above in the preliminaries section of the BoQ. No claims in this regard will be considered. The contractor must further consider any additional municipal dictates, restrictions and prescriptions related to protection of the works. The contractor is expected to adhere to building regulations and occupational health and safety requirements.	
Geotechnical and other investigations - specific requirements [B4.3]	No	

Existing premises occupied - details [B4.5]		Working areas will be occupied. The project is to be constructed in three sections as described in B11. Temporary works and hoarding have been measured in Section/ Bill No 7 of the BoQ. Any other hoardings etc. to comply with the Construction Regulations 2014 and any other legal requirements or legislation must be priced in the Preliminaries section of the bills of Quantities. The contractor must allow in their preliminaries section, for the periodic adjustment of any hoardings and their eventual removal and making good. No claims for additional hoardings etc will be entertained. The contractor must ensure minimal disruption to the operation of the existing premises and keep dust and noise to a minimum.	
Services - known - specific requirements [B4.6]		None	
Water [B8.1]	By **contractor**	**Yes / No?**	**Yes**
	By **employer**	**Yes / No?**	**No**
	By **employer** – metered	**Yes / No?**	**No**
Electricity [B8.2]	By **contractor**	**Yes / No?**	**Yes**
	By **employer**	**Yes / No?**	**No**
	By **employer** – metered	**Yes / No?**	**No**
Ablution and welfare facilities [B8.3]	By **contractor**	**Yes / No?**	**Yes**
	By **employer**	**Yes / No?**	**No**
Communication facilities - specific requirements [B8.4]		No specific requirements	
Protection of the works - specific requirements [B11.1]		Yes. Refer to drawing MDA 483D-106	
Protection / isolation of existing works and works occupied in sections - specific requirements [B11.2]		Yes. Refer to drawing MDA 483D-106	
Disturbance - specific requirements [B11.5]		Yes. Refer to drawing MDA 483D-106	
Environmental disturbance - specific requirements [B11.6]		Yes, removal of asbestos, when demolishing the existing structure.	

B 17.0 Changes made to JBCC® documentation

Reference may be made to other documents forming part of this **agreement**

1.1 Definitions

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

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

CONTRACT DATA FOR ORGANS OF STATE AND OTHER PUBLIC SECTOR BODIES: The document listing the Organs of State and other Public Sector Bodies' requirements and the project specific information.

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

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

3.0 Offer and Acceptance

Amend 3.3 to read as follows:
This **agreement** shall come into force on the date as stated on the Form of Offer and Acceptance and continue to be of force and effect until the end of the **latent defects** liability period [22.0] notwithstanding termination [29.0] or the certification of **final completion** [21.0] and final payment [25.0]

6.0 Employer's Agents

Add the following as 6.7:

In terms of the clauses listed hereunder, the **employer** has retained its authority and has not given a mandate to the **principal agent**. The **employer** shall sign all documents in relation to clauses 4.2, 14.1.2,14.1.4, 14.4.1, 14.6, 23.1, 23.2, 23.3, 23.7, 23.8, 26.1, 26.7, 26.12 and 28.4

9.0 Indemnities

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

10.0 Insurances

Add the following as 10.1.5.1:

Hi risk Insurance

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

10.1.5.1.1 Damage to **the works**

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

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

10.1.5.1.2 Injury **to persons or loss of or damage to property**

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

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

10.1.5.1.3

It is the responsibility of the **contractor** to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.1.5.1.1 and 10.1.5.1.2. Without limiting the **contractor's** obligations in terms of the contract, the **contractor** shall, within twenty-one (21) **calendar days** of the date of possession of the site, but before commencement of the **works**, submit to the **employer** proof of such insurance policy, if requested to do so

10.1.5.1.4

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

11.0 Securities

Amend 11.10 to read as follows:
There shall be no lien or right of retention held by any **contractor** in respect of the **works** executed on **site**

12.0 Obligations of the Parties

12.1.1 No Clause

Replace Clause 12.1.5 with the following:

Give possession of the site to the contractor within ten (10) working days of the contractor complied with the terms of 12.2.22

12.2.2: Not applicable

Add the following as Clause 12.2.22:
Within fourteen (15) working days of the date of the agreement submit to the principal agent an acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993)

19.0 Practical Completion

19.5: Delete the words “subject to the **contractor’s** lien or right of continuing possession of the **works** where this has not been waived”

21.0 Defects Liability Period and Final Completion

Add the following as Clause 21.13:
The ninety (90) calendar days defects liability period for the works [21.1] is replaced with an extended defects liability period of three hundred and sixty-five (365) calendar days in respect of the listed applicable elements

25.0 Payment

25.7.5 No clause.

25.10: Delete the words “and/or **compensatory interest**”

25.14.2: Not applicable

27.0 Recovery of Expense and/or Loss

27.1.5 No Clause

29.0 Termination

Add the following after 29.1.3:
Or where….

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

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

C TENDERER'S SELECTIONS

C 1.0 Security [11.0]

Guarantee for construction: Select Option A or B	**Option:**	

Option A	**Guarantee for construction** (variable) by **contractor [11.1.1]**
Option B	**Guarantee for construction** (fixed) by **contractor [11.1.2]**

Guarantee for payment by **employer** [11.5.1; 11.10]	Not Applicable
Advance payment, subject to a **guarantee for advance payment** [11.2.2; 11.3]	Not Applicable

C 2.0 Contractor's annual holiday periods during the construction period

Year 1 **contractor's** annual holiday period	start date	Not Applicable	end date	Not Applicable
Year 2 **contractor's** annual holiday period	start date	Not Applicable	end date	Not Applicable
Year 3 **contractor's** annual holiday period	start date	Not Applicable	end date	Not Applicable

C 3.0 Payment of preliminaries [25.0]

Contractor's selection: Select Option A or B	**Option:**	

Where the contractor does not select an option, Option A shall apply

Payment methods

Option A	The **preliminaries** shall be paid in accordance with an amount prorated to the value of the **works** executed in the same ratio as the amount of the **preliminaries** to the **contract sum**, which **contract sum** shall exclude the amount of **preliminaries**. Contingency sum(s) and any provision for cost fluctuations shall be excluded for the calculation of the aforesaid ratio
Option B	The **preliminaries** shall be paid in accordance with an amount agreed by the **principal agent** and the **contractor** in terms of the **priced document** to identify an initial establishment charge, a time-related charge and a final dis-establishment charge. Payment of the time-related charge shall be assessed by the **principal agent** and adjusted from time to time as may be necessary to take into account the rate of progress of the **works**

Lump sum contract

Where the amount of **preliminaries** is not provided it shall be taken as 7.5% (seven and a half per cent) of the **contract sum**, excluding contingency sum(s) and any provision for cost fluctuations.

C 4.0 Adjustment of preliminaries [26.9.4]

Contractor's selection: Select Option A or B	**Option:**	

Where the contractor does not select an option, Option A shall apply

Provision of particulars

The **contractor** shall provide the particulars for the purpose of the adjustment of **preliminaries** in terms of his selection. Where completion in sections **is** required, the **contractor** shall provide an apportionment of **preliminaries** per **section**

Option A	An allocation of the **preliminaries** amounts into Fixed, Value-related and Time-related amounts as defined for adjustment method Option A below, within fifteen (15) **working days** of the date of acceptance of the tender
Option B	A detailed breakdown of the preliminaries amounts within fifteen (15) working **days of** possession of the site. Such breakdown shall include, inter alia, the administrative and supervisory staff, the use of **construction equipment**, establishment and dis-establishment charges, insurances and guarantees, all in terms of the **programme**

Adjustment Methods

The amount of **preliminaries** shall be adjusted to take account of the effect which changes in time and/or value have on **preliminaries**. Such adjustment shall be based on the particulars provided by the **contractor** for this purpose in terms of Options A or B, shall preclude any further adjustment of the amount of **preliminaries** and shall apply notwithstanding the actual employment of resources by the **contractor** in the execution of the **works**

Option A	The **preliminaries** shall be adjusted in accordance with the allocation of **preliminaries** amounts provided by the **contractor,** apportioned to **sections** where completion in **sections** is required Fixed - An amount which shall not be varied Value-related - An amount varied in proportion to the **contract value** as compared to the **contract sum**. Both the **contract sum** and the **contract value** shall exclude the amount of **preliminaries**, contingency sum(s) and any provision for cost fluctuations Time-related - An amount varied in proportion to the number of **calendar days** extension to the date of **practical completion** to which the **contractor** is entitled with an adjustment of the **contract value** [23.2; 23.3] as compared to the number of **calendar days** in the initial **construction period** [26.9.4]
Option B	The adjustment of **preliminaries** shall be based on the number of **calendar days** extension to the date of **practical completion** to which the **contractor** is entitled with an adjustment of the **contract value** [23.2; 23.3] as compared to the number of **calendar days** in the initial **construction period** [26.9.4] The adjustment shall take into account the resources as set out in the detailed breakdown of the **preliminaries** for the period of construction during which the delay occurred

Failure to provide particulars within the period stated

Option A	Where the allocation of **preliminaries** amounts for Option A is not provided, the following allocation of **preliminaries** amounts shall apply: Fixed - Ten per cent (10%) Value-related - Fifteen per cent (15%) Time-related - Seventy-five per cent (75%) Where the apportionment of the **preliminaries** per **section** is not provided, the categorized amounts shall be prorated to the cost of each **section** within the **contract sum** as determined by the **principal agent**
Option B	Where the detailed breakdown of **preliminaries** amounts for Option B is not provided, Option A shall apply

Lump sum contract

Where the amount of **preliminaries** is not provided it shall be taken as 7.5% (seven and a half per cent) Of the **contract sum**, excluding contingency sum(s) and any provision for cost fluctuations