

Item No	Quantity	Rate	Amount
<u>SECTION NO. 1</u>			
<u>BILL NO. 1</u>			
<u>PRELIMINARIES</u>			
<u>BILL NO. 1</u>			
<u>PRELIMINARIES</u>			
<u>BUILDING AGREEMENT AND PRELIMINARIES</u>			
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 abovementioned documents are hereinafter referred to by clause number and heading only			
Where any item is not relevant to this agreement such item is marked N/A signifying "not applicable"			
Where standard clauses or alternatives are not entirely applicable to this agreement such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the above mentioned documents			
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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 : A recital of the headings of the individual clauses in the aforementioned **JBCC** Principal Building Agreement

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

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

PRICING OF PRELIMINARIES

Should the **contractor** select Option A in the **contract data** for 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

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Interpretation (A1-A7)

1 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

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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
3. The **contractor** shall not alter its composition or legal status without the prior written consent of the **employer**

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

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2 Clause 2.0 - **Law**, regulations and **notices**

3 Clause 3.0 - Offer and acceptance

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

Item

Amend clause 3.3 to read as follows:

This agreement shall come into force on the date as stated in Form of Offer and Acceptance effectively communicated 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)

Add new sub-clause 3.6 as follows:

The Form of Offer and Acceptance and schedule of Deviations shall form part of the contract document and constitutes the tender acceptance and agreement.

4 Clause 4.0 - Cession and assignment

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

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5 Clause 5.0 - Documents

Value Added Tax

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

Priced document as specification

Clause 5.4 is deemed to be deleted

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]

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

Item

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 **works**

1.2 **Contract instructions** [6.2; 17.1] :

1.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

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1.2.2	Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works				
1.2.3	The site [13.0]				
1.2.4	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				
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 practical 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]				
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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			
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.	<u>Mechanical engineer</u>			
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 JBCC Principal Building Agreement			
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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.	<u>Electrical engineer</u>			
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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

5.2 **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]

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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.	<u>Wet services engineer</u>				
6.1	Duties [6.2] :				
	The wet services engineer is responsible for all aspects of wet services engineering design and quality inspection of the works				
6.2	Contract instructions [6.2; 17.1] :				
6.2.1	Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement				
6.2.2	Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works				
6.2.3	Compliance with the law , regulations and bylaws [2.1]				
6.2.4	Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works				
6.2.5	Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]				
6.2.6	Removal or re-execution of work				
6.2.7	Removal or substitution of any materials and goods				
6.2.8	Protection of the works				
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6.2.9	Making good physical loss and repairing damage to the works [23.2.2]			
6.2.10	Rectification of defects [21.2]			
6.2.11	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			
6.2.12	Expenditure of budgetary allowances , prime cost amounts and provisional sums			
7.	<u>Fire consultant</u>			
7.1	Duties [6.2] :			
	The fire consultant is responsible for all aspects of rational fire design and quality inspection of the works			
7.2	Contract instructions [6.2; 17.1] :			
7.2.1	Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement			
7.2.2	Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works			
7.2.3	Compliance with the law , regulations and bylaws [2.1]			
7.2.4	Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works			
7.2.5	Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]			
7.2.6	Removal or re-execution of work			
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- 7.2.7 Removal or substitution of any **materials and goods**
- 7.2.8 Protection of the **works**
- 7.2.9 Making good physical loss and repairing damage to the **works** [23.2.2]
- 7.2.10 Rectification of **defects** [21.2]
- 7.2.11 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**
- 7.2.12 Expenditure of **budgetary allowances, prime cost amounts** and **provisional sums**

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

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	8.1.5 Stop the execution of the works where the agreed specification or plan is not adhered to F:..... V:..... T:.....	Item	
7	Clause 7.0 - Design responsibility F:..... V:..... T:.....	Item	
	<u>Insurances and securities (A8-A11)</u>		
8	Clause 8.0 - Works risk F:..... V:..... T:.....	Item	
9	Clause 9.0 - Indemnities F:..... V:..... T:..... Amend sub-clause 9.2.7 by adding the following to the end of the first sentence: '.....due to no fault of the contractor'	Item	
10	Clause 10.0 - Insurances <u>Add the following as clause 10.1.5.2</u> The insurance for the project to expire on the date of practical completion or extended practical completion. Any costs to extend insurances must be for the contractor's account. F:..... V:..... T:.....	Item	
11	Clause 11.0 - Securities Guarantee for payment		
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The **employer** shall provide to the **contractor** a **guarantee for payment** in the amount of**N/A**.....Rand
(R.....) [11.5.1]. The **contractor** shall consequently waive his lien or right of continuing possession of the **works** [11.10]

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**

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

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	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 F:..... V:..... T:.....				
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 use 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				
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	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 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:..... <u>Completion (A18 - A24)</u>	Item		
18	Clause 18.0 - Interim completion	N/A		
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		
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23	Clause 23.0 - Revision of the date for practical completion Substitution of materials and goods 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] F:..... V:..... T:.....	Item		
24	Clause 24.0 - Penalty for late or non-completion F:..... V:..... T:..... <u>Payment (A25 - A27)</u>	Item		
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 F:..... V:..... T:.....	Item		
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]			
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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**

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**

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

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

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]

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

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27 Clause 27.0 - Recovery of expense and/or loss

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

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<u>Suspension and termination (A28 - A29)</u>			
28	Clause 28.0 - Suspension by the contractor F:..... V:..... T:.....	Item	
29	Clause 29.0 - Termination F:..... V:..... T:.....	Item	
<u>Dispute resolution (A30)</u>			
30	Clause 30.0 - Dispute resolution F:..... V:..... T:.....	Item	
31	<u>Agreement</u> 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 F:..... V:..... T:.....	Item	
32	<u>Contract data</u> Tenderer's selections Before submission of his tender the contractor is to complete the tenderer's selections in the contract data F:..... V:..... T:.....	Item	
<u>SECTION B: GENERAL PRELIMINARIES</u>			
<u>Definitions and interpretation (B1)</u>			
33	Clause 1.1 - Definitions F:..... V:..... T:.....	Item	
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34	Clause 1.2 - Interpretation F:..... V:..... T:..... <u>Documents (B2)</u>	Item		
35	Clause 2.1 - Checking of documents F:..... V:..... T:.....	Item		
36	Clause 2.2 - Provisional bills of quantities Multiple procurement These bills of quantities are in multiple procurement format ie the "wet trades" - N/A F:..... V:..... T:.....	Item		
37	Clause 2.3 - Availability of construction information F:..... V:..... T:.....	Item		
38	Clause 2.4 - Ordering of materials and goods F:..... V:..... T:..... <u>Previous work and adjoining properties (B3)</u>	Item		
39	Clause 3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item		
40	Clause 3.2 - Previous work - defects F:..... V:..... T:.....	Item		
41	Clause 3.3 - Inspection of adjoining properties F:..... V:..... T:.....	Item		
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	<u>The site (B4)</u>			
42	Clause 4.1 - Handover of site in stages F:..... V:..... T:.....	Item		
43	Clause 4.2 - Enclosure of the works F:..... V:..... T:.....	Item		
44	Clause 4.3 - Geotechnical and other investigations F:..... V:..... T:.....	Item		
45	Clause 4.4 - Encroachments F:..... V:..... T:.....	Item		
46	Clause 4.5 - Existing premises occupied F:..... V:..... T:.....	Item		
47	Clause 4.6 - Services - known F:..... V:..... T:.....	Item		
	<u>Management of contract (B5)</u>			
48	Clause 5.1 - Management of the works F:..... V:..... T:.....	Item		
49	Clause 5.2 - Progress meetings F:..... V:..... T:.....	Item		
50	Clause 5.3 - Technical meetings F:..... V:..... T:.....	Item		
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<u>Samples, shop drawings and manufacturer's instructions (B6)</u>			
51	Clause 6.1 - Samples of materials F:..... V:..... T:.....	Item	
52	Clause 6.2 - Workmanship samples F:..... V:..... T:.....	Item	
53	Clause 6.3 - Shop drawings F:..... V:..... T:.....	Item	
54	Clause 6.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....	Item	
<u>Deposits and fees (B7)</u>			
55	Clause 7.1 - Deposits and fees F:..... V:..... T:.....	Item	
<u>Temporary services (B8)</u>			
56	Clause 8.1 - Water F:..... V:..... T:.....	Item	
57	Clause 8.2 - Electricity F:..... V:..... T:.....	Item	
58	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item	
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59	Clause 8.4 - Communication facilities F:..... V:..... T:..... <u>Prime cost amounts (B9)</u>	Item		
60	Clause 9.1 - Responsibility for prime cost amounts F:..... V:..... T:..... <u>Attendance on subcontractors (B10)</u>	Item		
61	Clause 10.1 - General attendance F:..... V:..... T:.....	Item		
62	Clause 10.2 - Special attendance It is important to note that general attendance only requires the contractor to "permit the subcontractor 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" (refer to 12.2.13 of the JBCC n/s subcontract agreement). Many n/s subcontractors qualify their tenders to exclude scaffolding and/or hoisting facilities. Especially scaffolding could be an expensive item and it may be necessary in order to avoid claims to require the contractor to provide for the extended use of scaffolding for specific subcontracts within a description of "special attendance" in the applicable bill F:..... V:..... T:..... <u>General (B11)</u>	Item		
63	Clause 11.1 - Protection of the works F:..... V:..... T:.....	Item		
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64	Clause 11.2 - Protection/isolation of existing works and works occupied in sections F:..... V:..... T:.....	Item		
65	Clause 11.3 - Security of the works F:..... V:..... T:.....	Item		
66	Clause 11.4 - Notice before covering work F:..... V:..... T:.....	Item		
67	Clause 11.5 - Disturbance 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 F:..... V:..... T:.....	Item		
68	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, wind-blown 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			
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	Environmental management plan The employer has prepared an environmental management plan (EMP) (refer to Annexure for a copy of the relevant plan). The contractor shall price opposite this item for compliance with all the requirements of such EMP F:..... V:..... T:..... 69 Clause 11.7 - Works cleaning and clearing F:..... V:..... T:..... 70 Clause 11.8 - Vermin F:..... V:..... T:..... 71 Clause 11.9 - Overhand work F:..... V:..... T:..... 72 Clause 11.10 - Tenant installations F:..... V:..... T:..... 73 Clause 11.11 - Advertising F:..... V:..... T:..... <u>SECTION C: SPECIFIC PRELIMINARIES</u> 74 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 Carried to Collection Section No. 1 SECTION 1: PRELIMINARIES Bill No. 1 Preliminaries KwaZulu Natal Botanical Gardens - Durban	Item Item Item Item Item Item		
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77	Overloading			
	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 eg 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		
78	Propping of floors below			
	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		
79	Testing of flat roof waterproofing for water tightness			
	Flat roof waterproof areas shall be flooded and kept "ponded" for at least forty eight (48) hours as a test to ensure the water tightness of the waterproofing and before any further construction work is carried out above the waterproofing F:..... V:..... T:.....	Item		
80	Health and safety			
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Without limiting the generality of the provisions of clause 2.0, the **contractor's** attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the **employer** shall prepare a documented health and safety specification for the **works** and that the **employer** shall ensure that the **contractor** has made provision for the cost of health and safety measures during the execution of the **works**. The **contractor** shall price opposite this item for compliance with the act and the regulations and the reasonable provisions of the aforementioned health and safety specification [2.1]

Health and safety

Without limiting the generality of the provisions of clause 2.0, the **contractor's** attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the **employer** shall prepare a documented health and safety specification for the **works** (refer to Annexure for a copy of the relevant specification) and that the **employer** shall ensure that the **contractor** has made provision for the cost of health and safety measures during the execution of the **works**. The **contractor** shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1]

The **contractor** shall:

1. Comply with the health and safety specification for the **works**
2. Prepare and agree with the health and safety consultant the health and safety plan for the **works**
3. Cooperate with the health and safety consultant in all respects
4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification
5. Conform to the conditions contained in the **employer's** health and safety specification

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	F:..... V:..... T:.....	Item		
81	Green star building certification			
	F:..... V:.....T:.....	Item		
82	Broad based black economic empowerment (BBBEE)			
	Tenders submitted will be evaluated taking into account their empowerment rating			
	The employer will be monitoring the broad based black economic empowerment (BBBEE) status of the contractor throughout the execution of the works			
	The contractor is to submit to the principal agent on an annual basis a schedule of spend, split into vendors engaged as subcontractors and suppliers indicating their BBBEE rating including proof of the said rating			
	F:..... V:.....T:.....	Item		
83	Advertising rights			
	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			
	F:..... V:.....T:.....	Item		
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84	Confidentiality		
	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 F:..... V:..... T:.....	Item	
85	Media releases		
	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 F:..... V:..... T:.....	Item	
	<u>SUMMARY OF CATEGORIES</u>		
	Category : Fixed R.....		
	Category : Value R.....		
	Category : Time R.....		
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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u> <u>BILL NO. 1</u> <u>ALTERATIONS (PROVISIONAL)</u> <u>PREAMBLES</u> <u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>SUPPLEMENTARY PREAMBLES</u> <u>View site</u> 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 <u>Explosives</u> No explosives whatsoever may be used for demolition purposes unless otherwise stated <u>General</u> 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			
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Water supply pipes and other piping 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

Doors, fanlights, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately

Prices for taking out of doors, windows, etc shall include for removal of all beads, architraves, ironmongery, etc

Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc and making good floor and wall finishes to match existing

With regard to building up of openings in existing walls, cement screeds and pavings, granolithic, tops of walls, etc, shall be levelled and prepared for raising of brickwork

Making good of finishes shall include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary

The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)

PROTECTION OF EXISTING WORK

General allowances

- | | |
|---|---|
| 1 | Allow for watering the works by spraying to prevent any nuisance from dust, etc and supply, erect and remove at completion all temporary dust screens, etc required |
|---|---|

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2	Allow for protecting all existing work liable to suffer damage (ie. walls, finishes, floors, windows, etc) from damage during the building operations, alterations, etc and make good all work damaged with new material to match existing to the approval of the Principal Agent		Item		
<u>TEMPORARY BARRIERS, SCREENS, ETC</u>					
<u>Temporary barriers, screens, etc including removal</u>					
3	Dust screen 2 400mm high on gravel floor formed of suitable timber framing with corrugated iron sheeting fixed to one side including corners, ends, etc	m	145		
4	Extra over ditto single leaf gate size 1 000 x 2 400mm high including all necessary posts, framing, locks, etc	No	1		
5	Extra over ditto double leaf gate size 3 000 x 2 400mm high including all necessary posts, framing, locks, etc	No	1		
<u>DEMOLISHING AND REMOVING</u>					
<u>Asbestos removal and disposal</u>					
6	Take out, carefully remove asbestos roof sheeting and stack on a designated area for cart away by specialist	m2	85		
7	Cart away asbestos sheets to a designated site located by specialist.		Item		
<u>Sundries</u>					
8	Issue of certificate of asbestos disposal.		Item		
<u>REMOVAL OF EXISTING WORK</u>					
<u>Breaking up and removing unreinforced concrete</u>					
9	Cut concrete for 110mm diameter pipe	m	5		
<u>Breaking down and removing brickwork etc</u>					
10	Half brick walls	m2	10		
11	One brick walls	m2	40		
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	<u>Taking out and removing doors, windows, etc, including thresholds, sills, etc and building up openings in brick walls, including making good cement plaster on both sides (making good paintwork elsewhere)</u>				
12	Timber frame size 7 460 x 1 500mm high from one brick wall	No	1		
13	Timber frame size 3 280 x (1 500 + 1 650mm) high extreme from one brick wall	No	2		
	<u>Taking out and removing doors, windows, etc, including thresholds, sills, etc and building up openings in brick walls, including making good cement plaster on both sides (making good paintwork elsewhere)</u>				
14	Timber single door size 813 x 2 032mm high overall from one brick wall	No	1		
15	Garage door size 2 500 x 3 000mm high from one brick walls	No	2		
	<u>Taking down and removing roofs, floors, panelling, ceilings, partitions, etc</u>				
16	Roof sheeting, etc	m2	207		
17	Gypsum plasterboard ceilings, including timber bandering, etc	m2	20		
	<u>Taking out and removing timber columns</u>				
18	Timber columns 2 400mm high	No	1		
	<u>Taking out/off and removing sundry metalwork</u>				
19	Eaves gutters and down pipes	m	183		
	<u>Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screed, plaster, tile finishes, etc</u>				
20	40mm screed from floors	m2	5		
21	Internal plaster from walls	m2	15		
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	Hacking up/off and removing ceramic tile floor and wall finishes including removing mortar bed or backing and preparing concrete or brick surfaces for new screed, plaster or tile finishes		
22	Suspended timber floor	m2	13
23	Floor tiles from floors	m2	25
24	Wall tiles from walls	m2	20
	<u>REPAIR AND SERVICING OF EXISTING</u>		
	<u>Repair and servicing of existing timber louveres</u>		
25	Inspect and service roof timber louveres size 2 000 x 1 500mm high including sanding down, etc leave in good working order	No	10
	<u>Repair and servicing of existing windows</u>		
	<u>Servicing of existing windows including thoroughly cleaning down of all dirt, scale and general contamination from all surfaces, pulleys, handles ,rods,openners,catches,etc,and servicing and lubricating all moving parts,carefully removing all paint,from and polishing all brassware and replacing of damaged or missing screws, nuts,etc (replacement of ironmongery ,removal of glass, etc else where measured)</u>		
26	Window size 500 x 600mm high	No	1
27	Window size 1 000 x 600mm high	No	1
	<u>Supply and fit the following window ironmongery sundries</u>		
	<u>Brass</u>		
28	Window handles	No	25
29	Peg stays	No	12
30	Sliding stays	No	8
	<u>CLEANING OF EXISTING SURFACES</u>		
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<u>Preparation to existing vertical surfaces</u>					
31	Clean existing face brick walls using a water pressure cleaning system and steel brushes and remove all dirt and loose particles	m2	579		
<u>Existing ceramic floor tiling</u>					
32	Clean existing surfaces with a high pressure water spray to remove all debris and oil, inspect recessed joints and fill with mortar where necessary to achieve flush joints.	m2	158		
<u>Clean existing roof covering using a high pressure water cleaning system and steel brushes removing all loose paint, spawl and deleterious matter</u>					
33	Clay roof tiles	m2	158		
<u>Sealing of existing roof</u>					
34	Carefully examine existing entire roof area, locate leaks with particular attention given to roof leaks where marks are visible on walls and ceilings, locate holes, replace defective screws using longer screws where necessary and leave in good order	m2	951		
<u>Repair roof tiles</u>					
35	Take out, remove and replace with new broken roof tiles to match with existing	m2	8		
<u>CRACK REPAIRS</u>					
<u>Reaming and sealing of cracks</u>					
Prepare and apply three coats Plascon Professional Waterproofing compound SAT520 ,or similar approved,by brush or long pile synthetic roller at a spreading rate of not exceeding 1.2m2/litre(approx.WFT 700um) per coat to yield a total combined DFT of 1mm					
36	To isolated walls areas, over repaired cracks	m2	1		
37	Clean existing surfaces with a high pressure water spray to remove all debris and oil ,inspect recessed joints and fill with mortar where necessary to achieve flush joints.	m2	5		
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38	Repair cracks in external face brick walls by raking out joints and grouting solid in cement mortar	m	3		
	<u>Breaking out for and forming openings through brick walls for new doors and frames, including pre-stressed concrete lintels, making good cement plaster on both sides and into reveals and with 25MPa concrete thresholds with steel trowelled finish (new doors and frames and making good paintwork elsewhere)</u>				
39	Opening for door with steel frame 813 x 2032mm high overall through one brick wall	No	2		
	<u>Remedial works to existing face brick walls</u>				
40	Provide the amount of R30 000.00 (Thirty Thousand Rands) for remedial work of crumbling face brick walls and match existing surfaces.		Item		30 000.00
	<u>UNDERPINNING</u>				
	<u>Underpinning complete</u>				
41	Provide the amount of R100 000.00 (One Hundred Thousand Rands) for underpinning of existing buildings as per Engineer's guidance, instruction and to be deducted if not required.		Item		100 000.00
	<u>MAKING GOOD OF FINISHES ETC</u>				
42	Floors in patches	m2	6		
43	Floors where half brick walls removed	m	5		
44	Floors where one brick walls removed	m	8		
45	Ceilings where one brick walls removed	m	8		
46	Walls in patches	m2	9		
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Item No		Quantity	Rate	Amount
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	<u>BILL NO. 2</u>			
	<u>EARTHWORKS (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Nature of ground</u>			
	The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"			
	<u>Subterranean water</u>			
	No subterranean water is expected			
	The water table is expected to vary between approximately 1,5m and 2m below natural ground level. The removal of subterranean water is given separately			
	<u>Carting away of excavated material</u>			
	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			
	<u>Filling</u>			
	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			
	Carried to Collection		R	
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<u>Testing</u>					
<i>Prices for filling are to include for all necessary density tests in accordance with SABS 1200D</i>					
<u>EXCAVATION, BULK</u>					
<u>EXCAVATIONS,</u>					
<u>Excavate</u>					
1	Open face excavations	m3	140		
<u>Extra</u>					
2	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	4		
<u>Keeping</u>					
3	Keeping excavations free of all water other than subterranean water			Item	
<u>FILLING</u>					
<u>G5 or better supplied by the Contractor, compacted to 93% MOD AASHTO</u>					
4	Under floors, steps, pavings, etc	m3	940		
<u>Compaction</u>					
5	Compaction of ground surface under pavings, aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	226		
<u>SOIL</u>					
<u>Soil</u>					
6	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	226		
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7	<u>Weedkiller (active ingredients metalaclor 102,8 g/l, terbitilasien 248,6 g/l and atrasiën 248,6 g/l) mixed in the proportion of 100 ml weedkiller to 100 l water and applied at a rate of 10 l/mg</u> Under paving, etc m2 226			
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 3</u>			
	<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Cost of tests</u>			
	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 principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)			
	<u>Formwork</u>			
	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			
	Carried to Collection			
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Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high 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

25Mpa/19mm concrete

- | | | | |
|---|---|----|-----|
| 1 | Aprons cast in panels | m3 | 140 |
| 2 | Thickening down the edge of apron 150mm deep ,200mm top and tapering to 100mm at bottom including all excavations, formwork, backfilling, etc | m | 39 |

TEST CUBES

- | | | | |
|---|--|----|----|
| 3 | Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional) | No | 90 |
|---|--|----|----|

35 MPa non-shrink grout

- | | | | |
|---|---|----|---|
| 4 | Bedding approximately 10mm thick under 200 x 200mm base plate including chamfered edges all round | No | 1 |
|---|---|----|---|

CONCRETE SUNDRIES

Finishing top surfaces of concrete smooth with a wood float

- | | | | |
|---|-----------------|----|----|
| 5 | Aprons to falls | m2 | 39 |
|---|-----------------|----|----|

ROUGH FORMWORK

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Concrete, Formwork and Reinforcement
KwaZulu Natal Botanical Gardens - Durban

	<u>Rough formwork to sides</u> 6 Edges, risers, beams, ends and reveals not exceeding 300mm high or wide m 2 Carried to Collection Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 3 Concrete, Formwork and Reinforcement KwaZulu Natal Botanical Gardens - Durban			R
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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 4</u>			
<u>MASONRY</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>BRICKWORK</u>			
<u>Sizes in descriptions</u>			
Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick			
<u>Hollow walls</u>			
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			
<u>Face bricks</u>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<u>Pointing</u>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc			
<u>BRICKWORK</u>			
Carried to Collection			R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 4 Masonry KwaZulu Natal Botanical Gardens - Durban			

**Incomplete New Office Building and Renovations
KwaZulu Natal Herbarium: National Botanical Garden - Durban**

SUPERSTRUCTURE

1	Half brick walls	m2	9
2	One brick walls	m2	45

BRICKWORK SUNDRIES

2,5mm Brickwork reinforcement

3	75mm Wide reinforcement built in horizontally	m	120
4	150mm Wide reinforcement built in horizontally	m	27

PRECAST CONCRETE

"Allied Concrete" or equal approved prestressed
fabricated lintels

5	110 x 75mm Lintels in lengths not exceeding 3m	m	14
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PAVING

**Paving of type 60mm interlocking precast concrete
paving blocks with butt joints including 50mm thick
river sand bed with sand swept into joints, including
preparation of ground or filling**

6	Paving, etc to falls, including necessary straight edge blocks	m2	550
7	Filling of gaps with concrete against edge restraints	m	20

Carried to Collection

R

Section No. 2
SECTION 2: MEDLEY WOOD HSE, THE HERBARIUM &
Bill No. 4
Masonry
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 5</u>			
<u>WATERPROOFING</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Waterproofing</u>			
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			
<u>DAMPPROOFING OF WALLS AND FLOORS</u>			
<u>One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)</u>			
1	In walls	m2	1
<u>One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape</u>			
2	Under surface beds	m2	26
<u>WATERPROOFING TO PLASTERED WALLS, ETC</u>			
Carried to Collection			R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 5 Waterproofing KwaZulu Natal Botanical Gardens - Durban			

3	<u>Apply Cemflex or equal approved primer to walls, lay SBP polypropylene membrane, saturate in two coats application and including allowing to cure</u>				
	To walls	m2	20		
4	<u>WATERPROOFING TO EXISTING EXTERNAL FACE BRICK WALLS, ETC</u>				
	<u>Prepare existing face brick surfaces and apply two coat of Permaseal Facade Cream, Remmers Funcosil FC Microshield Ultra or equal approved</u>				
4	To walls	m2	234		
	<u>SEALING STRIPS, JOINT SEALANTS, ETC</u>				
5	<u>"Compriband" bitumen impregnated foam plastic joint sealing strips</u>				
	30 x 50mm in expansion joints	m	26		
Carried to Collection					R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 5 Waterproofing KwaZulu Natal Botanical Gardens - Durban					

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Item No		Quantity	Rate	Amount
<u>SECTION NO. 2</u>				
<u>BILL NO. 6</u>				
<u>ROOF COVERINGS</u>				
<u>PREAMBLES</u>				
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
<u>PROFILED METAL SHEETING AND ACCESSORIES</u>				
<u>'Global Roofing Solutions' or equal approved 0,6mm thick 700mm cover Kli p-Lok 700™ profile ZINCAL® AZ150 shelter G550 Chromadek roof sheeting, with grey coating on underside and traffic green on top, fixed to steel intermediate purlins at 2 500mm centres and eaves and ridge p urlins at 2 100mm centres using KL700 clips fixed with 10No.16 x 16mm long self drilling wafer head PH2 screws, No. 3 drill point fasteners, all in accordance with the manufacturer's specifications</u>				
1	Roof coverings with pitch not exceeding 25 degrees	m2	207	
2	Ridge coverings 462mm girth	m	18	
<u>CONCRETE ROOF TILES</u>				
Carried to Collection				R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 6 Roof coverings KwaZulu Natal Botanical Gardens - Durban				

	<u>Infraset or equal horizontal concrete single roof tiles (Code: HZ SL STD) size 420 x 330mm laid in straight bond with minimum 75mm heap lap, fixed at a pitch of 20 degrees with three rows of tiles at the ridge, eaves and verge for the full overhang and every third tile in every row over the remainder of the roof raking pattern using non-corrosive nails to 38 x 38mm sawn softwood battened at maximum 345mm centres, on single sided radiant barrier with joints lapped 150mm fixed over rafters with trusses at 760mm centres</u>				
3	Roof covering with pitches not exceeding 26 degrees	m2	6		
	<u>ROOF AND WALL INSULATION</u>				
	<u>Roof insulation to be Isoboard® high density 32-36kg/m3 rigid extruded polystyrene 100% closed cell insulation boards 40mm thick x 600mm wide with brown paper and polyethylene laminate slip sheet factory applied to upper surface, with tongue & groove joints fixed concurrent with roof covering over steel purlins at maximum 1500mm centres with 5mm gap between boards butt-joined over purlins. Ridge vents are recommended to be allowed for in the roof covering (elsewhere specified) in order to prevent deflection due to heat build up above the boards.</u>				
4	Insulation laid taut over purlins (at approximately 1.80m centres) and fixed concurrent with roof covering, including taped laps and nylon straining wires	m2	207		
	<u>SHEET METAL FLASHINGS, LININGS, COPINGS, ETC</u>				
	<u>0.6mm Galvanised sheet iron</u>				
5	Linings to valleys with riveted and soldered joints 308mm girth	m	8		
Carried to Collection					
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 6 Roof coverings KwaZulu Natal Botanical Gardens - Durban					R

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 7</u>			
<u>CARPENTRY AND JOINERY</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Fixing</u>			
Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete			
Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere			
<u>Joinery</u>			
Descriptions of frames shall be deemed to include frames, transomes, rails, etc			
Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts			
<u>Decorative thermosetting plastic laminate covering</u>			
Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish			
<u>ROOFS, ETC.</u>			
<u>Plate nailed timber roof truss construction</u>			
Carried to Collection			R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban			

**Incomplete New Office Building and Renovations
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<u>Wrought softwood</u>					
1	Complete supply and erection of mono-pitched timber roof including wall plates, trusses, jack rafters, permanent bracing and 50 x 76mm purlins, etc. all as per the drawings attached to these bills of quantities (flat area 26m2)	No	1		
<u>Sawn softwood</u>					
2	38 x 114mm bracing in lengths exceeding 3,9m and not exceeding 6,6m	m	170		
3	38 x 114mm timber for wall plate	m	50		
4	50 x 76mm timber purlins	m	36		
5	38 x 114mm timber for bracing	m	28		
<u>Sundries</u>					
6	Two coats creosote on sawn timbers	m2	3		
<u>Wrought laminated Balu (Architectural finish)</u>					
7	76 x 228mm beams, pergola beams, etc bolted	m	25		
<u>EAVES, VERGES, ETC</u>					
<u>Medium density plain fibre-cement flat sheets</u>					
8	225 x 10mm Fascias and barge boards, including galvanised steel H-profile joiners	m	206		
<u>Tempered fibre-cement internal window sills</u>					
9	150 x 15mm thick internal window sill installed below window with sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in class II mortar with plastic slip joints at end at end of sills at plaster reveals and projecting from the finished face of wall, all in accordance with the manufacturer's recommendations	m	4		
<u>DOORS ETC</u>					
Carried to Collection				R	
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban					

**Incomplete New Office Building and Renovations
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	<u>44mm thick solid flush doors as Swartland or equal approved, MDF horizontal pane timber leaf hung to timber frame (elsewhere measured)</u>				
10	40mm Door 813 x 2 032mm high	No	1		
11	40mm Door 1 600 x 2 032mm high	No	1		
	<u>FRAMED FRAMES, ETC</u>				
	<u>Wrought meranti</u>				
12	135 x 53mm hardwood frames	m	18		
	<u>TIMBER FLOORING</u>				
	<u>Wrought saligna flooring of 20mm thick tongued and grooved boarding in 100mm widths</u>				
13	On floors	m2	13		
	<u>SKIRTINGS</u>				
	<u>Wrought saligna</u>				
14	19 x 76mm high skirting with and including Mm quarter round nailed to walls	m	15		
Carried to Collection					R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 8</u>			
	<u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Fixing</u>			
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete			
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere			
	<u>Ceilings</u>			
	Unless otherwise described ceilings shall be deemed to be horizontal			
	<u>INSULATION, ETC</u>			
	<u>Fibreglass insulation</u>			
1	100mm non-combustible lightweight fibreglass insulation blanket closely fitted between tie beams and laid loose on top of bracing, etc, all as per manufacturers instructions	m2	25	
	<u>NAIL UP CEILING</u>			
	Carried to Collection			R
	Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 8 Ceilings, Partitions and Access Flooring KwaZulu Natal Botanical Gardens - Durban			

Section No. 2
SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM &
Bill No. 8
Ceilings, Partitions and Access Flooring
KwaZulu Natal Botanical Gardens - Durban

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**Incomplete New Office Building and Renovations
KwaZulu Natal Herbarium: National Botanical Garden - Durban**

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 9</u>			
	<u>IRONMONGERY</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>The following Ironmongery by door Type Dormakaba or equally approved</u>			
1	Dormakaba Lever handle on rose with Cylinder escutcheons Code TH125 Cyl S.S	No	1	
2	Dormakaba Cylinder Sash Lock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. BackNo 57mm. Centres 61mm.Code D036S SS	No	2	
3	Dormakaba 66mm five pin Euro-profile Double Cylinder Grand Master Keyed Code DDC106601 GMK (66mm)	No	1	
4	Dormakaba Lever handle on rose with Cylinder escutcheons Code TH125 Cyl S.S	No	2	
5	Dormakaba Floor Mounted Door Stop Code DDS-NP-018	No	2	
6	Dormakaba hat and coat hook Code DDS-NP-019	No	3	
7	Dormakaba 50mm Padlock - Grand Master Keyed. Code DPL1000 GMK	No	1	
8	Dormakaba EN 3/4 Cam action slide channel NON HOLD OPEN Door Closer - Hydraulic Speed Control. Pull Side - leaf or transom fixing; Push Side - leaf or transom fixing. EN3 850-950, EN4 950-1100 Code TS90 - SL	No	1	
	Carried to Collection			
	Section No. 2			
	SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM &			
	Bill No. 9			
	Ironmongery			
	KwaZulu Natal Botanical Gardens - Durban			

LETTERS, NAMEPLATES, ETC

DCLSA or equal approved

9	160 x 160mm EO151560E/M/F anodised aluminium plate with shower sign	No	1
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6mm Perspex backing plates for fire signs, including natural anodised aluminium channel framing all round with mitred corner intersections and hanged 500mm below ceilings with two 3mm stainless steel cables

10	380 x 190mm Backing	No	1
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Carried to Collection

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Section No. 2
SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM &
Bill No. 9
Ironmongery
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 10</u>			
<u>STRUCTURAL STEELWORK</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Descriptions</u>			
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			
<u>BASE PLATES, ETC</u>			
1	200 x 200 x 100mm base plate	No	1
<u>BOLTS, FASTENERS,ETC</u>			
2	De-rust existing HD bolts and leave in good order	No	4
3	High tensile bolts	t	0.01
Carried Forward to Summary of Section No. 2 Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 10 Structural Steel KwaZulu Natal Botanical Gardens - Durban			R

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 11</u>			
	<u>METALWORK</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Descriptions of bolts, anchors, etc</u>			
	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 Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres			
	<u>ALUMINIUM WINDOWS, DOORS, ETC.</u>			
	<u>Purpose made powder coated aluminium shopfronts glazed with 6mm laminated toughened safety glazing fixed to brickwork, partitions, concrete, steel, etc ironmongery as per manufacturer's standard specifications</u>			
1	Shopfront size 7 640 x 1 500mm high	No	1	
2	Shop front size 3 240 x (1 500 + 1 650mm) high extreme	No	2	
	Carried to Collection			R
	Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 11 Metalwork KwaZulu Natal Botanical Gardens - Durban			

ALUMINIUM GARAGE DOORS, ETC.

Slide over aluminium electrically operated panel door for 2 500 x 3 000mm high opening including motor, electrical connection and commissioning by specialist

- 3 For opening size 2 500 x 3 000mm high complete with ironmongery and including motor supplied complete and installed as per manufacturer's specifications

No

2

Carried to Collection

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Section No. 2
SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM &
Bill No. 11
Metalwork
KwaZulu Natal Botanical Gardens - Durban

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 12</u>			
	<u>PLASTERING</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>FLOOR SCREEDS</u>			
	<u>1 : 4 wooden float screed to floor</u>			
1	30mm Thick on floors and landings	m2	5	
	<u>INTERNAL PLASTER</u>			
	<u>Cement plaster steel trowelled, on brickwork</u>			
2	On walls	m2	98	
	<u>INTERNAL PLASTER WITH CHICKEN MESH</u>			
	<u>Cement plaster with mesh</u>			
3	200mm Wide strip galvanised chicken mesh centrally over joints before plastering, brickwork to be moistened thoroughly before plastering	m2	40	
	<u>CORNER PROTECTORS, DIVIDING STRIPS, ETC</u>			
4	50 x 5mm Flat section brass dividing strips between differing floor finishes	m	2	
	Carried Forward to Summary of Section No. 2		R	
	Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 12 Plastering KwaZulu Natal Botanical Gardens - Durban			

Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 13</u>			
<u>TILING</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Fixing</u>			
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 Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts from the range of products as recommended by the manufacturer of the tiles			
<u>WALL TILING</u>			
<u>250 x 250 x 10mm glazed walls tiles fixed with adhesive to plaster (plaster elsewhere) and flush pointed with tinted grout</u>			
1	On walls	m2	20
Carried to Collection			R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 13 Tiling KwaZulu Natal Botanical Gardens - Durban			

KwaZulu Natal Herbarium: National Botanical Garden - Durban

Section No. 2
SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM &
Bill No. 13
Tiling
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 14</u>			
<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Wire gratings</u>			
Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings			
<u>Stormwater channels</u>			
Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc, and disposal of surplus material on site			
<u>Stainless steel basins, sinks, wash troughs, urinals, etc</u>			
Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)			
Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)			
Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)			
Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable			
Carried to Collection			R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 14 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban			

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

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 or sealed with butyl rubber rings

uPVC pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm 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

High density polyethylene (HDPE) pipes and fittings

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

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

Carried to Collection

Section No. 2

SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 14

Plumbing and Drainage (Provisional)

KwaZulu Natal Botanical Gardens - Durban

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Copper pipes

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. 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-siphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and 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

Fixing of pipes

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

Laying, backfilling, bedding, etc of pipes

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

Carried to Collection

Section No. 2
SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM &
Bill No. 14
Plumbing and Drainage (Provisional)
KwaZulu Natal Botanical Gardens - Durban

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Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

SABS 1200L : Medium-pressure pipelines

SABS 1200LD : Sewers

SABS 1200LE: Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB :
Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB : Bedding (Pipes)

Unless otherwise described bedding of rigid pipes shall be Class B bedding

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

Carried to Collection

Section No. 2

SECTION 2: MEDLEY WOOD HSE, THE HERBARIUM &
Bill No. 14

Plumbing and Drainage (Provisional)

KwaZulu Natal Botanical Gardens - Durban

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As-built drawings

Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)

RAINWATER DISPOSAL

Mr Gutter or equal approved charcoal colour, powder coated aluminium gutter and downpipes complete with, outlets, plinths offsets, bends and shoes

1	80 x 55 x 5mm thick powder coated aluminium rainwater eaves gutter	m	183
2	Extra over gutter for stopped end	No	22
3	Extra over gutter for angle	No	6
4	Extra over gutter for outlet for 85 x 55mm pipe	No	50
5	85 x 55mm Rainwater pipes	m	200
6	Extra over rainwater pipe for shoe	No	50
7	Extra over rainwater pipe for bend	No	50

SANITARY FITTINGS

SHOWER CUBICLE PANELS AND DOORS

Powder coated aluminium shower cubicle panels and doors with frames, sliding gear, pivot hinges, cleats, stops, etc and 6.38mm toughened clear safety glass, plugged to tiled walls and sealed with silicone sealant

8	Fixed panel 800 x 1800mm high	No	1
9	Pivot door 800 x 1800mm high.	No	1

Carried to Collection

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	<u>Cobra Watertech or other approved</u>				
	<u>TRAPS, ETC.</u>				
10	40 x 50mm Rubber butyl deep seal "P" or "S" trap	No	1		
	<u>TAPS, VALVES, ETC.</u>				
	<u>"Cobra Watertech" or other equal approved</u>				
11	22mm T-956 "Taryn" or equal approved shower mixer	No	1		
12	15mm 072-15 Shower rose.	No	1		
13	15mm 029CP overhead shower arm.	No	1		
	<u>SANITARY PLUMBING</u>				
	<u>uPVC soil and vent pipes</u>				
14	50mm Pipes	m	8		
15	110 mm Pipes	m	17		
16	110 mm Pipes laid in and including trenches not exceeding 1m deep under surface beds	m	10		
	<u>Extra over 50 mm uPVC pipes for fittings</u>				
17	BSP adaptor	No	2		
18	Bend	No	2		
19	Junction	No	2		
20	Access bend	No	2		
21	Access junction	No	2		
22	Two-way vent valve	No	2		
	<u>Extra over 110 mm uPVC pipes for fittings</u>				
23	Pan collar	No	1		
24	Bend	No	2		
	Carried to Collection			R	
	Section No. 2				
	SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM &				
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25	Junction	No	2		
26	Access bend	No	2		
27	Access junction	No	2		
	<u>HDPE gulleys</u>				
28	110mm Gulley not exceeding 750mm deep	No	1		
	<u>Sundries</u>				
29	Testing waste pipe system		Item		
	<u>WATER SUPPLIES</u>				
	<u>Class 0 copper pipes</u>				
30	15mm Pipes	m	14		
31	22mm Pipes	m	10		
32	28mm Pipes	m	8		
	<u>Extra over class 0 copper pipes for capillary fittings</u>				
33	15mm Fittings	No	6		
34	22mm Fittings	No	6		
35	28mm Fittings	No	4		
	<u>Copper overflow and service pipes</u>				
36	15 mm Service pipe 380 mm girth	No	1		
	<u>Sundries</u>				
37	Testing water pipe system		Item		
Carried to Collection				R	
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 14 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban					

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 16</u>			
<u>PAINTWORK</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>PREPARATORY WORK TO EXISTING WORK</u>			
<u>Previously painted plastered surfaces</u>			
Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
<u>Previously painted metal surfaces</u>			
Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
<u>Previously painted wood surfaces</u>			
Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
<u>PAINT SPECIFICATIONS</u>			
All painting shall be done in accordance with "SANS" specifications unless otherwise described			
Carried to Collection			
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & Bill No. 16 Paintwork KwaZulu Natal Botanical Gardens - Durban			

COLOURS

Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091

PAINTWORK ETC, TO NEW WORK

ON INTERNAL FLOATED PLASTER SURFACES

One coat alkali resistant primer, one coat undercoat and two coats "Eggshell enamel" paint

1	Internal walls	m2	179	
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One coat alkali resistant primer, one coat undercoat and two coats "Eggshell enamel" paint

2	External walls	m2	40	
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One coat alkali resistant primer, one coat undercoat and two coats "Eggshell enamel" paint

3	External PCC units	m	6	
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4	On PCC handrail (both sides measured)	m2	40	
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ON PLASTERBOARD SURFACES

One coat alkali resistant primer and two coats PVA emulsion paint for interior use

5	Ceilings and cornices	m2	20	
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ON FIBRE CEMENT BOARD SURFACES

One coat alkali resistant primer and two coats PVA emulsion paint for exterior use

6	Fascias and barge boards, including priming metal jointing strips	m	242	
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7	Window cills, etc	m	72	
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ON METAL SURFACES

Carried to Collection

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Section No. 2
SECTION 2: MEDLEY WOOD HSE, THE HERBARIUM &
Bill No. 16
Paintwork
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	<u>Prepare ,etc as specified and apply two coats of bitumen based paint inside the gutter</u>				
8	Inside eaves gutter	m2	66		
	<u>One coat alkyd based zinc phosphate primer, one coat alkyd based universal undercoat and two coats premium quality polyurethane enamel paint, on steel</u>				
9	Structural steel members	m2	40		
	<u>ON WOOD SURFACES</u>				
	<u>Spot priming defects with alkyd based universal undercoat and two coats gloss enamel paint on</u>				
10	On doors	m2	15		
11	On timber beams	m2	24		
12	On timber columns	m2	29		
13	On timber roof louvers	m2	12		
	<u>Two coats polyurethane suede varnish</u>				
14	On roof timbers	m2	45		
15	On timber shelves	m2	12		
16	On timber floors	m2	13		
17	Skirtings	m2	2		
	<u>PAINTWORK ETC, TO PREVIOUSLY PAINTED WORK</u>				
	<u>ON INTERNAL FLOATED PLASTER SURFACES</u>				
	<u>One coat alkali resistant primer, one coat undercoat and two coats "Eggshell enamel" paint</u>				
18	Walls	m2	276		
Carried to Collection					R
Section No. 2 SECTION 2: MEDLEY WOOD HSE, THE HERBARIUM & Bill No. 16 Paintwork KwaZulu Natal Botanical Gardens - Durban					

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	<u>One coat alkali resistant primer, one coat undercoat and two coats roof and steep paint</u>				
19	On floors	m2	30		
	<u>ON PLASTERBOARD SURFACES</u>				
	<u>One coat alkali resistant primer and two coats PVA emulsion paint for interior use</u>				
20	Ceilings and cornices	m2	20		
	<u>One coat alkali resistant primer and two coats PVA emulsion paint for exterior use</u>				
21	Fibre cement cills	m	24		
	<u>One coat water based primer and two coats UV-resistant water based alkyd roof paint, on roof tiles</u>				
22	Roof tiles	m2	158		
23	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	16		
24	Rails, bars, pipes, etc not exceeding 300mm girth (Provisional)	m	130		
	<u>One coat water based galvanised iron primer and two coats UV-resistant water based alkyd roof paint, roof tiles</u>				
25	Steel roof sheeting	m2	793		
	<u>ON WOOD SURFACES</u>				
	<u>Spot priming defects with alkyd based universal undercoat and two coats gloss enamel paint on</u>				
26	Windows with burglar bars	m2	181		
27	Door frames	m2	45		
28	Doors	m2	126		
29	On timber roof louvers	m2	43		
	Carried to Collection			R	
	Section No. 2				
	SECTION 2: MEDLEY WOOD HSE, THE HERBARIUM &				
	Bill No. 16				
	Paintwork				
	KwaZulu Natal Botanical Gardens - Durban				

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u> <u>BILL NO. 1</u> <u>ALTERATIONS (PROVISIONAL)</u> <u>PREAMBLES</u> <u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>SUPPLEMENTARY PREAMBLES</u> <u>View site</u> 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 <u>Explosives</u> No explosives whatsoever may be used for demolition purposes unless otherwise stated <u>General</u> 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			
Carried to Collection			R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 1 Alterations (Provisional) KwaZulu Natal Botanical Gardens - Durban			

Water supply pipes and other piping 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

Doors, fanlights, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately

Prices for taking out of doors, windows, etc shall include for removal of all beads, architraves, ironmongery, etc

Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc and making good floor and wall finishes to match existing

With regard to building up of openings in existing walls, cement screeds and pavings, granolithic, tops of walls, etc, shall be levelled and prepared for raising of brickwork

Making good of finishes shall include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary

The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)

PROTECTION OF EXISTING WORK

General allowances

- | | |
|---|---|
| 1 | Allow for watering the works by spraying to prevent any nuisance from dust, etc and supply, erect and remove at completion all temporary dust screens, etc required |
|---|---|

Item

Carried to Collection

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Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 1
Alterations (Provisional)
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2	Allow for protecting all existing work liable to suffer damage (ie. walls, finishes, floors, windows, etc) from damage during the building operations, alterations, etc and make good all work damaged with new material to match existing to the approval of the Principal Agent		Item		
<u>TEMPORARY BARRIERS, SCREENS, ETC</u>					
<u>Temporary barriers, screens, etc including removal</u>					
3	Dust screen 2 400mm high on gravel floor formed of suitable timber framing with corrugated iron sheeting fixed to one side including corners, ends, etc	m	150		
4	Extra over ditto single leaf gate size 1 000 x 2 400mm high including all necessary posts, framing, locks, etc	No	1		
5	Extra over ditto double leaf gate size 3 000 x 2 400mm high including all necessary posts, framing, locks, etc	No	1		
<u>REMOVAL OF EXISTING WORK</u>					
<u>Break up and remove reinforced concrete, including cutting off and removing reinforcement</u>					
6	100mm thick concrete surface bed	m3	6		
<u>Taking down and removing roofs, floors, panelling, ceilings, partitions, etc</u>					
7	Gypsum plasterboard ceilings, including timber brandering, etc	m2	61		
8	Roof trusses including timber battens, etc	m2	61		
9	Roof tiles from timber battens	m2	61		
10	Timber rafters size 38 x 228mm thick	m	24		
11	Timber roof purlins size 50 x 76mm	m	36		
<u>Taking out and removing sundry joinery work, fittings, etc</u>					
12	Timber cornice	m	89		
Carried to Collection				R	
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 1 Alterations (Provisional) KwaZulu Natal Botanical Gardens - Durban					

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<u>Taking out/off and removing sundry metalwork</u>					
13	Eaves gutters and down pipes	m	42		
<u>Taking out and removing piping, sanitary fittings, etc, including cutting off as necessary, disconnecting piping from fittings and making good floor and wall finishes (making good tiling and paintwork elsewhere)</u>					
14	Vitreous china wash hand basin, including short lengths of piping, etc	No	1		
15	Vitreous china WC pan with cistern	No	1		
<u>Repair and servicing of existing windows</u>					
<u>Servicing of existing timber windows including thoroughly cleaning down of all dirt, scale and general contamination from all surfaces, pulleys, handles, rods, openers, catches, replacing damaged glass, etc, and servicing and lubricating all moving parts, carefully removing all paint, from and polishing all brass ware and replacing of damaged or missing screws, nuts, etc (replacement of ironmongery, removal of glass, etc else where measured)</u>					
16	Window size 630 x 700mm high	No	5		
17	Window size 1 000 x 1 500mm high	No	1		
<u>Supply and fit the following window ironmongery sundries</u>					
<u>Brass</u>					
18	Window handles	No	7		
<u>Servicing of existing door frame including replacing striking plates</u>					
19	Door frame size 813 x 2 032mm high	No	8		
<u>Repair and servicing of existing sanitary fittings</u>					
Carried to Collection				R	
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 1 Alterations (Provisional) KwaZulu Natal Botanical Gardens - Durban					

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<u>Repair leaking water supply pipe</u>				
20	Investigate as necessary to identify location and extent of leaks in plastered walls finish	No	6	
21	Hack into existing plastered wall finish to allow for repair including temporarily blanking off branch and reinstating ,all to match existing (pipe repair elsewhere measured)	No	4	
22	Cut into existing copper pipe not exceeding 30mm diameter to remove damaged portion and reinstate, including testing (cutting into plaster and making good elsewhere measured)	No	7	
<u>Repair to soil waste and vent pipes</u>				
23	Investigate as necessary to identify location and extent of leaks in plastered walls finish	No	5	
24	Hack into existing plastered wall finish to allow for repair including temporarily blanking off branch and reinstating ,all to match existing (pipe repair elsewhere measured)	No	8	
25	Cut into existing copper pipe not exceeding 30mm diameter to remove damaged portion and reinstate, including testing (cutting into plaster and making good elsewhere measured)	No	5	
<u>CLEANING OF EXISTING SURFACES</u>				
<u>Preparation to existing vertical surfaces</u>				
26	Clean existing face brick walls using a water pressure cleaning system and steel brushes and remove all dirt and loose particles	m2	165	
<u>MAKING GOOD OF FINISHES ETC</u>				
27	Floors in patches	m2	110	
28	Floors where half brick walls removed	m	12	
29	Floors where one brick walls removed	m	18	
30	Walls in patches	m2	88	
<u>CRACK REPAIRS</u>				
Carried to Collection				R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 1 Alterations (Provisional) KwaZulu Natal Botanical Gardens - Durban				

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	<u>Reaming and sealing of cracks</u>				
31	Clean existing surfaces with a high pressure water spray to remove all debris and oil ,inspect recessed joints and fill with mortar where necessary to achieve flush joints.	m2	5		
	<u>Prepare and apply three coats Plascon Professional Waterproofing compound SAT520 ,or similar approved by brush or long pile synthetic roller at a spreading rate of not exceeding 1.2m2/litre (approx.WFT 700um) per coat to yield a total combined DFT of 1mm</u>				
32	To isolated walls areas, over repaired cracks	m2	47		
	<u>Breaking out for and forming openings through brick walls for new window frames, including pre-stressed concrete lintels, making good cement plaster on internally, face brickwork externally and into reveals and with 25MPa concrete thresholds with steel trowelled finish (new window frames and making good paintwork elsewhere)</u>				
33	Opening for window frame size 1 000 x 1 500mm high overall through one brick wall	No	4		
Carried to Collection					
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 1 Alterations (Provisional) KwaZulu Natal Botanical Gardens - Durban					R

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 2</u>			
<u>EARTHWORKS (PROVISIONAL)</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Nature of ground</u>			
The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"			
<u>Subterranean water</u>			
No subterranean water is expected The water table is expected to vary between approximately 1,5m and 2m below natural ground level. The removal of subterranean water is given separately			
<u>Carting away of excavated material</u>			
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			
<u>Filling</u>			
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			
Carried to Collection			
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 2 Earthworks (Provisional) KwaZulu Natal Botanical Gardens - Durban			R

<u>Testing</u>					
<i>Prices for filling are to include for all necessary density tests in accordance with SABS 1200D</i>					
<u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u>					
<u>EXCAVATIONS, ETC</u>					
<u>Excavate in earth not exceeding 2m deep</u>					
1	Reduce levels under floors	m3	60		
2	Trenches	m3	58		
<u>Extra over excavations in earth for excavation in:</u>					
3	Soft rock	m3	10		
4	Hard rock	m3	5		
<u>Back excavation of vertical sides of excavation in earth for working spaces including backfilling compacted to 98% Mod AASHTO density</u>					
5	Not exceeding 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	30		
6	Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	20		
<u>Extra over excavations in earth for working space for excavation in soft rock:</u>					
7	Not exceeding 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	20		
8	Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	15		
Carried to Collection				R	
Section No. 3					
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS					
Bill No. 2					
Earthworks (Provisional)					
KwaZulu Natal Botanical Gardens - Durban					

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<u>Extra over excavations in earth for working space for excavation in hard rock:</u>					
9	Not exceeding 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	5		
10	Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	3		
<u>Extra over all excavations for carting away</u>					
11	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	22		
<u>Risk of collapse of excavations</u>					
12	Sides of trench and hole excavations not exceeding 1,5m deep	m2	165		
<u>Keeping excavations free of water</u>					
13	Keeping excavations free of all water other than subterranean water		Item		
<u>FILLING ETC</u>					
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density</u>					
14	Backfilling to trenches, holes, etc	m3	32		
15	Under floors, steps, pavings, etc	m3	64		
<u>Earth filling supplied by the Contractor, compacted to 98% Mod AASHTO density</u>					
16	Crusher run stone base course material compacted in layers of 150mm thick to 98% MOD AASHTO density	m3	8		
<u>Earth filling from commercial sources supplied by the Contractor, compacted to 98% Mod AASHTO density</u>					
17	G5 materials in accordance with SABS 1200 ME, compacted to 93% MOD AASHTO density	m3	640		
Carried to Collection				R	
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 2 Earthworks (Provisional) KwaZulu Natal Botanical Gardens - Durban					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 3</u>			
	<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Cost of tests</u>			
	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 principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)			
	<u>Formwork</u>			
	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			
	Carried to Collection			
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 3 Concrete, Formwork and Reinforcement KwaZulu Natal Botanical Gardens - Durban			
			R	

Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high 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

25Mpa/19mm concrete

1	Aprons cast in panels	m3	15
2	Thickening down the edge of apron 150mm deep, 200mm top and tapering to 100mm at bottom including all excavations, formwork, backfilling, etc	m	50
3	Ramps	m3	1

REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

25Mpa/19mm concrete

4	Surface beds in panels	m3	85
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TEST CUBES

5	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	10
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35 MPa non-shrink grout

6	Bedding approximately 10mm thick under 200 x 200mm base plate including chamfered edges all round	No	8
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Carried to Collection

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Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 3
Concrete, Formwork and Reinforcement
KwaZulu Natal Botanical Gardens - Durban

CONCRETE SUNDRIES

Finishing top surfaces of concrete smooth with a wood float

7	Aprons to falls	m2	50	
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ROUGH FORMWORK

Rough formwork to sides

8	Edges, risers, beams, ends and reveals not exceeding 300mm high or wide	m	28	
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MOVEMENT JOINTS, ETC

Expansion joints with expanded polystyrene with tear off strip between vertical concrete and brick surfaces

9	10mm joints not exceeding 300mm high	m	55	
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Saw cut joints

10	30 x 5mm saw cut joints on top of concrete	m	20	
----	--	---	----	--

Vertical joggle construction joints through concrete including thick cement slurry to one face

11	Surface beds not exceeding 300mm thick	m	40	
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REINFORCEMENT (PROVISIONAL)

High tensile steel reinforcement to structural concrete work

12	Various diameter bars	t	8.00	
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Fabric reinforcement

13	Type 193 fabric reinforcement in surface beds, ramps,etc	m2	251	
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SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 3
Concrete, Formwork and Reinforcement
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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 4</u>			
<u>MASONRY</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>BRICKWORK</u>			
<u>Sizes in descriptions</u>			
Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick			
<u>Hollow walls</u>			
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			
<u>Face bricks</u>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<u>Pointing</u>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc			
<u>BRICKWORK</u>			
<u>FOUNDATIONS (PROVISIONAL)</u>			
Carried to Collection			
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 4 Masonry KwaZulu Natal Botanical Gardens - Durban			R

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	<u>Brickwork of NFP bricks (14 MPa nominal compressive strength) in class II mortar</u>				
1	One brick walls	m2	87		
	<u>SUPERSTRUCTURE</u>				
	<u>Brickwork of NFX bricks in class I mortar</u>				
2	Half brick walls	m2	30		
3	One brick walls	m2	99		
	<u>BRICKWORK SUNDRIES</u>				
	<u>2,5mm Brickwork reinforcement</u>				
4	75mm Wide reinforcement built in horizontally	m	100		
5	150mm Wide reinforcement built in horizontally	m	619		
	<u>Turning pieces</u>				
6	230mm Wide turning piece to lintels etc	m	16		
	<u>Joint forming material in movement joints</u>				
7	Movement joint formed of 20mm soft board built in vertically between brickwork (Provisional)	m2	18		
	<u>Galvanised hoop iron cramps, ties, etc</u>				
8	38 x 1,6mm Galvanised hoop iron roof tie with one end built six courses deep into top of brickwork and other end wrapped around and nailed to trusses (Provisional)	No	56		
	<u>PRECAST CONCRETE</u>				
	<u>Prestressed fabricated concrete lintels including necessary temporary supports</u>				
9	100 x 75mm Lintels in lengths not exceeding 3m	m	16		
	<u>FACE BRICKWORK</u>				
Carried to Collection				R	
Section No. 3					
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS					
Bill No. 4					
Masonry					
KwaZulu Natal Botanical Gardens - Durban					

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	<u>Corobrik Red Terracota satin FBS or equally approved face brick pointed with flush horizontal and vertical joints in stretcher bond</u>				
10	Extra over brickwork for face brickwork in foundation	m2	43		
11	Extra over brickwork for face brickwork	m2	99		
	<u>Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces</u>				
12	Extra over brickwork for 220mm wide brick-on-edge coping	m	22		
13	Brick-on-edge header course lintel pointed on both faces and 230mm wide soffit	m	16		
14	Cut face brick-on-edge external window cill, 180mm wide, set sloping and slightly projecting in cement mortar and pointed on top, front edge and projecting soffit including all necessary fair raking cutting to facings under and fair and fitted ends	m	15		
	<u>NUTEC-CEMENT/FIBRE CEMENT WINDOW SILLS</u>				
	<u>Everite Nutec or equal approved window sills in single lengths bedded in class I mortar including fixing lugs screwed to underside with self tapping screws</u>				
15	150 x 15mm wide sills set flat and slightly projecting	m	15		
Carried to Collection					R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 4 Masonry KwaZulu Natal Botanical Gardens - Durban					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 5</u>			
	<u>WATERPROOFING</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Waterproofing</u>			
	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			
	<u>DAMPPROOFING OF WALLS AND FLOORS</u>			
	<u>One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)</u>			
1	In walls	m2	13	
	<u>One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape</u>			
2	Under surface beds	m2	51	
	<u>SEALING STRIPS, JOINT SEALANTS, ETC</u>			
	<u>"Compriband" bitumen impregnated foam plastic joint sealing strips</u>			
3	30 x 50mm in expansion joints	m	60	
	Carried to Collection			
	Section No. 3			
	SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS			
	Bill No. 5			
	Waterproofing			
	KwaZulu Natal Botanical Gardens - Durban			
			R	

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	<u>Silicone sealing compound</u>			
4	4 x 4mm around sanitary fittings (Provisional)	m	11	
	Carried to Collection		R	
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 5 Waterproofing KwaZulu Natal Botanical Gardens - Durban			

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Item No		Quantity	Rate	Amount
<u>SECTION NO. 2</u>				
<u>BILL NO. 6</u>				
<u>ROOF COVERINGS</u>				
<u>PREAMBLES</u>				
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
<u>PROFILED METAL SHEETING AND ACCESSORIES</u>				
<u>'Global Roofing Solutions' or equal approved 0,6mm thick 700mm cover Kli p-Lok 700™ profile ZINCAL® AZ150 shelter G550 Chromadek roof sheeting, with grey coating on underside and traffic green on top, fixed on top, fixed to timber purlins at 1 200mm centres</u>				
1	Roof coverings with pitch not exceeding 25 degrees	m2	228	
2	Hip capping 462mm girth	m	15	
3	Ridge capping 462mm girth	m	18	
<u>Global Roofing Solutions 0,55mm thick 700mm cover Kli p-Lok 700™ refile ZINCAL® AZ150 G550 roof sheeting, with grey coating on underside and Colour purlins "Rustic Bark" on top, fixed to steel intermediate purlins at 2 500mm centres and eaves and ridge purlins at 2 100mm centres using KL700 clips fixed with 10No.16 x 16mm long self drilling wafer head PH2 screws, No. 3 drill point fasteners, all in accordance with the manufacturer's specifications</u>				
4	Roof coverings with pitch not exceeding 25 degrees	m2	56	
Carried to Collection				R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 6 Roof coverings KwaZulu Natal Botanical Gardens - Durban				

**SHEET METAL FLASHINGS, LININGS,
COPINGS, ETC**

0.6mm Galvanised sheet iron

- | | | | | |
|---|--|---|----|--|
| 5 | Linings to valleys with riveted and soldered joints
308mm girth | m | 28 | |
|---|--|---|----|--|

ROOF AND WALL INSULATION

Roof insulation to be Isoboard® high density 32-36kg/m3 rigid extruded polystyrene 100% closed cell insulation boards 40mm thick x 600mm wide with brown paper and polyethylene laminate slip sheet factory applied to upper surface, with tongue & groove joints fixed concurrent with roof covering over steel purlins at maximum 1500mm centres with 5mm gap between boards butt-joined over purlins. Ridge vents are recommended to be allowed for in the roof covering (elsewhere specified) in order to prevent deflection due to heat build up above the boards.

- | | | | | |
|---|--|----|-----|--|
| 6 | Insulation laid taut over purlins (at approximately 1.80m centres) and fixed concurrent with roof covering, including taped laps and nylon straining wires | m2 | 148 | |
|---|--|----|-----|--|

Carried to Collection

Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 6
Roof coverings
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 7</u>			
<u>CARPENTRY AND JOINERY</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Fixing</u>			
Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete			
Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere			
<u>Joinery</u>			
Descriptions of frames shall be deemed to include frames, transomes, rails, etc			
Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts			
<u>Decorative thermosetting plastic laminate covering</u>			
Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish			
<u>PREFABRICATED METAL CONNECTOR PLATE</u>			
<u>TIMBER ROOF TRUSSES</u>			
Carried to Collection			R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban			

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Complete prefabricated timber roof trusses with a pitch not exceeding 25 degree pitch including all necessary hoisting labour, timber for bracing, purlins, 50 x 50mm timber battens, wall plates, beams, gang boards, certificate and guarantee for design and erection to be supplied by truss manufacturer. All exposed timber sections as well as sections in contact with wet trades to be creosote treated before fixing into position.

Sawn softwood

Sundries

Wrought laminated Balu (Architectural finish)

EAVES, VERGES, ETC

Medium density plain fibre-cement flat sheets

Tempered fibre-cement internal window sills

6	150 x 15mm thick internal window sill installed below window with sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in class II mortar with plastic slip joints at end at end of sills at plaster reveals and projecting from the finished face of wall, all in accordance with the manufacturer's recommendations	m	60
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DOORS ETC

Wrought meranti doors

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SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 7
Carpentry and joinery
KwaZulu Natal Botanical Gardens - Durban

	<u>44mm thick solid flush door as 'Swartland' or equal approved, MDF horizontal pine timber leaf hung to timber frame (elsewhere measured)</u>			
7	40mm Door 813 x 2 032mm high	No	7	
8	40mm double door 1 600 x 2 032mm high	No	1	
	<u>FRAMED FRAMES, ETC</u>			
	<u>Wrought meranti</u>			
9	69 x 107mm rebated frames	m	44	
	<u>CUPBOARDS TO KITCHENS, BEDROOMS, ETC</u>			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>General</u>			
	The following cupboard fittings have been given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc			
	Prices are to include for all necessary filler pieces against walls etc			
	<u>References</u>			
	References given in descriptions refer to the respective types of fittings detailed on the architect's drawings annexed to these bills of quantities for tender purposes			
	<u>Kitchen cupboards etc</u>			
	<u>Timber kitchen cupboards etc with concealed automatic hinges, stainless steel handles and epoxy coated telescopic drawer slides</u>			
10	Wall cupboard 450 x 300 x 720mm high with top, sides, bottom, division, shelf, back and double hinged door	No	2	
	Carried to Collection			R
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban			

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11	Wall cupboard 900 x 300 x 720mm high with top, sides, bottom, division, shelf, back and double hinged doors	No	2		
12	Floor cupboard type 500 x 550 x 880mm high with top, sides, bottom, division, shelf, back and double hinged doors, dividing framework and two drawers and one door including 75mm aluminium skirting all round	No	2		
13	Floor cupboard type 1 735 x 550 x 880mm high with top, sides, bottom, division, shelf, back and double hinged doors, dividing framework and two drawers and one door including 75mm aluminium skirting all round	No	2		
14	Floor cupboard type 2 300 x 550 x 880mm high with top, sides, bottom, division, shelf, back and double hinged doors, dividing framework and two drawers and one door including 75mm aluminium skirting all round	No	1		
15	Sink cupboard type 1 500 x 550 x 880mm high with sides, bottom, divisions, shelf, back and double hinged doors (sink elsewhere)	No	1		
	<u>Vanity basin</u>				
16	Vanity basin size 2 000 x 550 x 910mm high with sides, bottom, divisions, shelf, back and double hinged doors (basin elsewhere)	No	1		
	<u>GRANITE WORKTOPS</u>				
	<u>Rustenburg or equal approved grey with polished finish</u>				
17	30mm Thick worktop 400 mm wide with one bullnosed edge, plugged to one brick wall	m	3		
18	30mm Thick worktop 600 mm wide with one bullnosed edge, screwed to timber from below	m	11		
	<u>"Rustenburg grey" or equal approved granite with polished finish</u>				
19	Cut 400 x 450mm hole through 30mm granite top	No	3		
20	Cut 1 150 x 457mm hole through 30mm granite top	No	1		
Carried to Collection					R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban					

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**6.4mm Gypsum Plasterboard ceilings finished
smooth with gypsum skim plaster**

- | | | | |
|---|--|----|-----|
| 2 | Horizontal ceiling formed of 6.4mm thick x 1200mm wide boards with and including H-type pressed steel jointing strips over joints, 38 x 50mm sawn softwood brandering at 400mm centres in one direction and around edges where required for fixing cornices, brandering spiked to roof timber, and finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer | m2 | 110 |
| 3 | Extra over ceiling for hinged pressed metal trap door size 600 x 600mm including all necessary ironmongery | No | 2 |

Rhino gypsum plasterboard cornices

- | | | | |
|---|------------------------------|---|-----|
| 4 | 19 x 76 mm Cornices, plugged | m | 188 |
|---|------------------------------|---|-----|

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Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 8
Ceilings, Partitions and Access Flooring
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 9</u>			
<u>IRONMONGERY</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Proprietary items</u>			
Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered On request returnable samples are to be provided to the principal agent for consideration			
Carried to Collection			
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 9 Ironmongery KwaZulu Natal Botanical Gardens - Durban			

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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
AN Anodised natural
AS Anodised silver
AB Anodised bronze
AG Anodised gold
ABL Anodised black
PB Polished brass
PL Polished and lacquered
PT Epoxy coated
SD Sanded

The following Ironmongery by door type Geze or equally approved

Door Type : Entrance

1	Geze 76mm profile arch sash lock S/S Code 730/68	No	2
2	Geze N/PL double cylinder 66mm STD Code IG95093338	No	2
3	Geze Daytona 19mm lever on rose Code EDD/101	Pairs	2.0
4	Geze Prof cylinder escutcheon S/SS Code ED908/CYL	Pairs	2.0
5	Geze 096/76-S/S B/B hinge 100x75x2.7 304GR Code GES211076	Pairs	4.0
6	Geze S/steel F/MNT door stop Code 140/69	No	2

Door Type : Toilets

7	096/76-S/S B/B hinge 100x 75 x 2.7 304GR Code GERS21076	Pairs	4.0
8	Geze S/ST P/PL 160 x 160 x 1.2mm E/FEM Code 079/160E/F	No	2

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Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
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Ironmongery
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9	265/01 - Helping hand L/H L/H or R/H Code 295/01	No	2
10	Geze B/T S.S P/hand 375 x 350 x 25mm Code JD213/350 B/T	No	2
11	Geze S/ST P/PL 160 x 160 1.2mm E/PAR Code 079/160E/P	No	2
12	TS4000G DA DCL C/W guide rail SR Code AZ4003DA	No	2
	<u>Door Type : Main</u>		
13	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	1.0
14	Geze Prof cylinder deadlock SS Code 642/35	No	1
15	Geze BTB S.S O/Set 375x350x25mm JBS2090S/350BTB	Pairs	2.0
16	TS5000 with guide rail SR Code AZ5003SR	No	1
17	Geze N/PL double cylinder 66mm STD Code IG95093338	No	1
18	SS N/Style Oval cylinder escutcheon Code GZZW4405/CYL	Pairs	2.0
19	Geze S/steel F/MNT door stop Code 140/69	No	1
	<u>Door Type : Toilets 1</u>		
20	TS2000G DCL with g/rail and arm SR Code AZ2003SR	No	4
21	Geze S/ST P/PL 160 x 160 x 1.2mm E/M&F Code 079/160E/MF	No	4
22	096/76-S/S B/B hinge 100x 75 x 2.7 304GR Code GERS21076	Pairs	4.0
23	265/01 - Helping hand L/H L/H or R/H Code 295/01	No	4
24	Geze BTB S.S O/Set 375x350x25mm JBS2090S/350BTB	Pairs	4.0

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Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 9
Ironmongery
KwaZulu Natal Botanical Gardens - Durban

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<u>Supply and fit the following window ironmongery sundries</u>					
<u>Brass</u>					
25	Window handles	No	2		
<u>BATHROOM FITTINGS, ETC</u>					
<u>Franke stainless steel or other equal approved</u>					
<u>"Franke" or other equal approved</u>					
26	600 x 55mm polished stainless steel single towel rail, Model BHM9H Code 359933 plugged	No	1		
27	68mm long x 40mm wide polished stainless steel wall mounted Robe hook with rubber Model BHM8P Code 359945 plugged	No	5		
28	203mm diameter polished stainless steel towel ring Model BHM18P Code 359937, plugged	No	3		
29	300mm x 305mm x 134mm wall mounted paper towel dispenser 18/10 stainless steel with satin finished with surface treatment - InoxPlus (Anti fingerprint), Model STRX600 Code 359700 supplied complete with standard cylinder lock and key plugged	No	2		
30	141 x 295 x 127mm wall mounted double toilet roll holder, 18/10 stainless steel with satin finish, Model CHRX672 Code 359808 toilet roll holder to be supplied complete with a single piece pressed lid, welded container and standard cylinder lock with key plugged.	No	5		
31	18L stainless steel sanitary bin plugged	No	1		
32	355mm x 460mm x 168mm wall mounted waste bin, 0.8mm stainless steel , surface satin finish Model RODX605, Code 359983 complete with all screws and dowels plugged.	No	5		
33	235mm x 135mm diameter wall toilet brush holder, 0.9mm stainless steel with polished finish, nylon brush included, Model BS686 Code 359800.	No	5		
Carried to Collection				R	
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 9 Ironmongery KwaZulu Natal Botanical Gardens - Durban					

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34	300mm x 305mm x 134mm wall mounted liquid soap dispenser 18/10 stainless steel with satin finish Model BSP618 Code 359800 supplied complete with standard cylinder lock and key plugged.	No	2		
	<u>"VAAL" or other approved</u>				
35	32mm diameter grab rail code 'VAA SR1' with flush valve grab rail size 750mm x 90mm deep fixed to wall with stainless steel screws plugged.	No	1		
36	Dogleg grab with 2 flanges rail code 'VAA DL2' size 300 x 300 x 300mm deep fixed to with stainless steel screws plugged	No	1		
	<u>LETTERS, NAMEPLATES, ETC</u>				
	<u>DCLSA or equal approved</u>				
37	160 x 160mm EO151560E/M/F anodised aluminium plate with male or female engraving	No	2		
	<u>Fire signage, mounted to walls, doors, backing plates, etc</u>				
38	190 x 190mm Photoluminescent sign	No	2		
	<u>6mm Perspex backing plates for fire signs, including natural anodised aluminium channel framing all round with mitred corner intersections and hanged 500mm below ceilings with two 3mm stainless steel cables</u>				
39	380 x 190mm Backing	No	5		
Carried to Collection					R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 9 Ironmongery KwaZulu Natal Botanical Gardens - Durban					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 10</u>			
	<u>STRUCTURAL STEELWORK</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Descriptions</u>			
	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			
	<u>STEEL COLUMNS AND BEAMS</u>			
	<u>Welded columns in single lengths with flat base, cap, bearer and connection plates, bolted to concrete</u>			
1	100 x 50 x 3mm SHS (column)	t	0.55	
2	101.6 x 3 CHS column	t	0.36	
	<u>Welded beams in single lengths with angle section cleats bolted to brickwork</u>			
3	IPE 180 UB	t	0.45	
	Carried to Collection			R
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 10 Structural Steel KwaZulu Natal Botanical Gardens - Durban			

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 11</u>			
	<u>METALWORK</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Descriptions of bolts, anchors, etc</u>			
	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 Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres			
	<u>STAINLESS STEEL HANDRAILS, BALUSTRATES, ETC</u>			
	<u>Supply, fabricate, deliver and erect to site stainless steel handrails and balustrades including all necessary stanchions, closed ends, ramps, cleats, bolts, welding, picking, etc complete as per Architect specification</u>			
1	1 000mm high raking to stairs and ramps	m	120	
2	1 000mm high straight to walkways	m	60	
	Carried to Collection			
	Section No. 3			
	SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS			
	Bill No. 11			
	Metalwork			
	KwaZulu Natal Botanical Gardens - Durban			

ALUMINIUM DOORS, ETC.

Powder coated aluminium windows with stainless steel windows stays, glazed with 5mm thick clear safety glass fixed to brickwork (colour to be confirmed by Architect)

3	Window size 600 x 800mm high	No	5
4	Window size 900 x 1 500mm high	No	6
5	Window size 1 500 x 900mm high	No	2

ALUMINIUM DOORS, ETC.

Powder coated aluminium doors with stainless steel door stays, glazed with 5mm thick laminated toughened safety glazing and fixed to brickwork complete including ironmongery as per Architect specification (colour to be confirmed by Architect)

6	Double door size 1 600 x 2 250mm high complete with ironmongery	No	1
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Carried to Collection

R

Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 11
Metalwork
KwaZulu Natal Botanical Gardens - Durban

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Item No		Quantity	Rate	Amount
<u>SECTION NO. 2</u>				
<u>BILL NO. 12</u>				
<u>PLASTERING</u>				
<u>PREAMBLES</u>				
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
<u>FLOOR SCREEDS</u>				
<u>1 : 4 wooden float screed to floor</u>				
1	30mm Thick on floors and landings	m2	158	
<u>INTERNAL PLASTER</u>				
<u>Cement plaster steel trowelled, on brickwork</u>				
2	On walls	m2	262	
<u>CORNER PROTECTORS, DIVIDING STRIPS, ETC</u>				
3	50 x 5mm Flat section brass dividing strips between differing floor finishes	m	8	
Carried Forward to Summary of Section No. 3				R
Section No. 3 SECTION 3: UMDONI BLOCK AND GARAGE (PROVIS Bill No. 12 Plastering KwaZulu Natal Botanical Gardens - Durban				

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 13</u>			
	<u>TILING</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Fixing</u>			
	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 Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts from the range of products as recommended by the manufacturer of the tiles			
	<u>WALL TILING</u>			
	<u>600 x 600 x 10mm thick ceramic tiles laid on Corprox or equal approved waterproof tile grout on screed (screed elsewhere) and flush pointed with tinted waterproof jointing compound</u>			
1	On walls	m2	4	
	Carried to Collection			R
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 13 Tiling KwaZulu Natal Botanical Gardens - Durban			

FLOOR TILING

600 x 600 x 10mm thick ceramic tiles laid on Corprox or equal approved waterproof tile grout on screed (screed elsewhere) and flush pointed with tinted waterproof jointing compound

2	On floors and landings	m2	158
3	Skirting 75mm high of cut tiles	m	188

EDGE TRIMS, NOSING, ETC

Edge trims, nosings, etc

4	9mm "ASE090.MS" aluminium straight edge trims	m	18
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Carried to Collection

Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 13
Tiling
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 14</u>			
<u>PLUMBING AND DRAINAGE</u>			
<u>(PROVISIONAL)</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Wire gratings</u>			
Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings			
<u>Stormwater channels</u>			
Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc, and disposal of surplus material on site			
<u>Stainless steel basins, sinks, wash troughs, urinals, etc</u>			
Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)			
Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)			
Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)			
Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable			
Carried to Collection			R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 14 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban			

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

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 or sealed with butyl rubber rings

uPVC pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm 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

High density polyethylene (HDPE) pipes and fittings

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

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

Carried to Collection

Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 14
Plumbing and Drainage (Provisional)
KwaZulu Natal Botanical Gardens - Durban

R

Copper pipes

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. 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

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and 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

Fixing of pipes

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

Laying, backfilling, bedding, etc of pipes

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

Carried to Collection

Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 14
Plumbing and Drainage (Provisional)
KwaZulu Natal Botanical Gardens - Durban

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Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

SABS 1200L : Medium-pressure pipelines

SABS 1200LD : Sewers

SABS 1200LE: Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB :
Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB : Bedding (Pipes)

Unless otherwise described bedding of rigid pipes shall be Class B bedding

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

Carried to Collection

Section No. 3

SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS

Bill No. 14

Plumbing and Drainage (Provisional)

KwaZulu Natal Botanical Gardens - Durban

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<u>As-built drawings</u>					
Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)					
<u>RAINWATER DISPOSAL</u>					
<u>Mr Gutter or equal approved charcoal colour, powder coated aluminium gutter and downpipes complete with, outlets, plinths offsets, bends and shoes</u>					
1	80 x 55 x 5mm thick powder coated aluminium rainwater eaves gutter	m	50		
2	Extra over gutter for stopped end	No	4		
3	Extra over gutter for outlet for 85 x 55mm pipe	No	16		
4	85 x 55mm Rainwater pipes	m	64		
5	Extra over rainwater pipe for shoe	No	16		
6	Extra over rainwater pipe for bend	No	16		
<u>12mm Stainless steel type 304 (grade 18/10)</u>					
7	Double bowl sink 1 160 x 460mm with end bowls 460 x 355 x 150mm deep each, 40mm sink outlet chrome plated with back nut plug and chain un-slotted as cobra 316, 40mm butyl rubber combination resealing P-trap	No	1		
<u>White glazed 'Vaal' or equal approved</u>					
8	"Hibiscus" 540 x 45 rounded basin with single tap hole product code 702303	No	2		
9	"Daisy" semi-closed couple wash down suite including heavy duty plastic seat 772403	No	4		
Carried to Collection				R	
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 14 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban					

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10	Vaal Sanitaryware 600 x 385 x 380mm Lavatera white vitreous china wall mounted top inlet urinal (code: 705426) including 38mm chromium plated domical grating (code: 8787Z0) and chromium plated top inlet spreader spreader (code: 7054Z1), flush valve (by others - Recommended: Cobra FJ6000), fixed on and including two hanger brackets (code: 8127Z0)	No	1		
	<u>WASTE UNIONS, ETC.</u>				
11	32 mm Chromium plated basin waste union	No	1		
12	38 mm Chromium plated bath or sink waste union	No	1		
	<u>TRAPS, ETC.</u>				
13	40 x 50mm Rubber butyl deep seal "P" or "S" trap	No	1		
14	40 x 50mm Double bowl wash trough or sink reseal P trap combination.	No	1		
	<u>TAPS, VALVES, ETC.</u>				
	<u>"Cobra Watertech" or other equal approved</u>				
15	15mm 832/350F Angle valve with 350mm flexible hose connector	No	1		
16	15mm 181CP "Tudor" exposed basin mixer, TD-294	No	1		
17	22 mm CS-296CP "Capstan" or equal approved sink mixer with swivel spout outlet	No	1		
18	15mm 1001/125-20RB fullway gate valve	No	7		
19	32mm FM1 .1 OOCF or equal approved "Flush master" exposed back entry toilet flush valve	No	1		
	<u>SANITARY PLUMBING</u>				
	<u>uPVC soil and vent pipes</u>				
20	50mm Pipes	m	70		
21	110 mm Pipes	m	68		
	Carried to Collection			R	
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 14 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban				

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22	110 mm Pipes laid in and including trenches not exceeding 1m deep under surface beds	m	48	
	<u>Extra over 50 mm uPVC pipes for fittings</u>			
23	BSP adaptor	No	7	
24	Bend	No	8	
25	Junction	No	8	
26	Access bend	No	7	
27	Access junction	No	7	
28	Two-way vent valve	No	4	
	<u>Extra over 110 mm uPVC pipes for fittings</u>			
29	Pan collar	No	4	
30	Bend	No	8	
31	Junction	No	8	
32	Access bend	No	8	
33	Access junction	No	8	
34	Two-way vent valve	No	4	
	<u>Sundries</u>			
35	Testing waste pipe system		Item	
	<u>WATER SUPPLIES</u>			
	<u>Class 0 copper pipes</u>			
36	15mm Pipes	m	64	
37	22mm Pipes	m	72	
38	28mm Pipes	m	50	
	Carried to Collection			R
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 14 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban			

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	<u>Extra over class 0 copper pipes for capillary fittings</u>			
39	15mm Fittings	No	30	
40	22mm Fittings	No	30	
41	28mm Fittings	No	8	
	<u>Copper overflow and service pipes</u>			
42	15mm Service pipe 380mm girth	No	1	
	<u>ELECTRIC WATER HEATERS</u>			
	<u>"Kwikot" or equal approved</u>			
43	Kwikot or equal approved 10 litre under sink water heater installed complete including all piping, fittings, valves, etc fitted in strict accordance to manufacturer's instructions.	No	1	
	<u>Sundries</u>			
44	Testing water pipe system		Item	
	<u>WATER SUPPLIES TO FIRE APPLIANCES</u>			
	<u>Galvanised mild steel</u>			
45	22mm Pipes	m	53	
46	28mm Pipes	m	52	
	<u>Extra over galvanised mild steel pipes for fittings</u>			
47	22mm Fittings	No	10	
48	28mm Fittings	No	10	
	<u>Sundries</u>			
49	Testing fire water pipe system		Item	
	Carried to Collection			R
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 14 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban			

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 15</u>			
	<u>GLAZING</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>TOPS, SHELVES, DOORS, MIRRORS, ETC</u>			
	<u>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</u>			
1	Mirror size 450 x 600mm high	No	5	
	Carried Forward to Summary of Section No. 3		R	
	Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 15 Glazing KwaZulu Natal Botanical Gardens - Durban			

Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u> <u>BILL NO. 16</u> <u>PAINTWORK</u> <u>PREAMBLES</u> NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>SUPPLEMENTARY PREAMBLES</u> <u>PREPARATORY WORK TO EXISTING WORK</u> <u>Previously painted plastered surfaces</u> Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth <u>Previously painted metal surfaces</u> Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal <u>Previously painted wood surfaces</u> Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth <u>PAINT SPECIFICATIONS</u> All painting shall be done in accordance with "SANS" specifications unless otherwise described			
Carried to Collection			R
Section No. 3 SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS Bill No. 16 Paintwork KwaZulu Natal Botanical Gardens - Durban			

COLOURS

Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091

PAINTWORK ETC, TO NEW WORK

ON INTERNAL FLOATED PLASTER SURFACES

One coat alkali resistant primer, one coat undercoat and two coats "Eggshell enamel" paint

1	Internal walls	m2	156
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ON PLASTERBOARD SURFACES

One coat alkali resistant primer and two coats PVA emulsion paint for interior use

2	Ceilings and cornices	m2	158
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ON FIBRE CEMENT BOARD SURFACES

One coat alkali resistant primer and two coats PVA emulsion paint for exterior use

3	Fascias and barge boards, including priming metal jointing strips	m	68
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ON METAL SURFACES

Prepare ,etc as specified and apply two coats of bitumen based paint inside the gutter

4	Inside eaves gutter	m2	15
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One coat alkyd based zinc phosphate primer, one coat alkyd based universal undercoat and two coats premium quality polyurethane enamel paint, on steel

5	Rails, bars, pipes, etc exceeding 300mm girth (Provisional)	m	337
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ON WOOD SURFACES

Carried to Collection

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Section No. 3
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS
Bill No. 16
Paintwork
KwaZulu Natal Botanical Gardens - Durban

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	<u>Spot priming defects with alkyd based universal undercoat and two coats gloss enamel paint on</u>				
6	On roof timbers	m2	26		
7	On windows	m2	12		
8	On door frames and doors	m2	44		
	<u>PAINTWORK ETC, TO PREVIOUSLY PAINTED WORK</u>				
	<u>ON INTERNAL FLOATED PLASTER SURFACES</u>				
	<u>One coat alkali resistant primer, one coat undercoat and two coats "Eggshell enamel" paint</u>				
9	Walls	m2	98		
	<u>ON WOOD SURFACES</u>				
	<u>Spot priming defects with alkyd based universal undercoat and two coats gloss enamel paint on</u>				
10	Windows with burglar bars	m2	8		
Carried to Collection					R
Section No. 3					
SECTION 3: UMNDONI BLOCK AND GARAGE (PROVIS					
Bill No. 16					
Paintwork					
KwaZulu Natal Botanical Gardens - Durban					

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u> <u>BILL NO. 1</u> <u>ALTERATIONS (PROVISIONAL)</u> <u>PREAMBLES</u> <u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>SUPPLEMENTARY PREAMBLES</u> <u>View site</u> 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 <u>Explosives</u> No explosives whatsoever may be used for demolition purposes unless otherwise stated <u>General</u> 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			
Carried to Collection			R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 1 Alterations (Provisional) KwaZulu Natal Botanical Gardens - Durban			

Water supply pipes and other piping 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

Doors, fanlights, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately

Prices for taking out of doors, windows, etc shall include for removal of all beads, architraves, ironmongery, etc

Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc and making good floor and wall finishes to match existing

With regard to building up of openings in existing walls, cement screeds and pavings, granolithic, tops of walls, etc, shall be levelled and prepared for raising of brickwork

Making good of finishes shall include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary

The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)

PROTECTION OF EXISTING WORK

General allowances

- | | |
|---|---|
| 1 | Allow for watering the works by spraying to prevent any nuisance from dust, etc and supply, erect and remove at completion all temporary dust screens, etc required |
|---|---|

Item

Carried to Collection

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Section No. 4
SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 1
Alterations (Provisional)
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 2</u>			
<u>EARTHWORKS (PROVISIONAL)</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Nature of ground</u>			
The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"			
<u>Subterranean water</u>			
No subterranean water is expected The water table is expected to vary between approximately 1,5m and 2m below natural ground level. The removal of subterranean water is given separately			
<u>Carting away of excavated material</u>			
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			
<u>Filling</u>			
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			
Carried to Collection			
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 2 Earthworks (Provisional) KwaZulu Natal Botanical Gardens - Durban			R

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<u>Testing</u>					
<i>Prices for filling are to include for all necessary density tests in accordance with SABS 1200D</i>					
<u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u>					
<u>EXCAVATIONS, ETC</u>					
<u>Excavate in earth not exceeding 2m deep</u>					
1	Reduce levels under floors	m3	12		
<u>Extra over excavations in earth for excavation in:</u>					
2	Soft rock	m3	2		
3	Hard rock	m3	1		
<u>Extra over all excavations for carting away</u>					
4	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	12		
<u>Risk of collapse of excavations</u>					
5	Sides of trench and hole excavations not exceeding 1,5m deep	m2	20		
<u>Keeping excavations free of water</u>					
6	Keeping excavations free of all water other than subterranean water			Item	
<u>FILLING ETC</u>					
<u>Coarse river sand filling supplied by the contractor</u>					
7	30mm thick sand spread level	m2	383		
<u>Earth filling supplied by the Contractor, compacted to 90% Mod AASHTO density</u>					
8	Under floors, steps, pavings, etc	m3	12		
Carried to Collection				R	
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 2 Earthworks (Provisional) KwaZulu Natal Botanical Gardens - Durban					

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Bill No. 2
Earthworks (Provisional)
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 3</u>			
	<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Cost of tests</u>			
	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 principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)			
	<u>Formwork</u>			
	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			
	Carried to Collection			
	Section No. 4			
	SECTION 4: NEW HERBARIUM OFFICE BLOCK			
	Bill No. 3			
	Concrete, Formwork and Reinforcement			
	KwaZulu Natal Botanical Gardens - Durban			
			R	

Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high 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

15Mpa/19mm concrete

1	Blinding under footings and bases	m3	1	
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REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

25Mpa/19mm concrete

2	Surface beds	m3	17	
3	Concrete in-fill	m3	2	
4	Aprons cast in panels	m3	7	
5	Thickening down the edge of apron 150mm deep, 200mm top and tapering to 100mm at bottom including all excavations, formwork, backfilling, etc	m	65	

REINFORCED CONCRETE CAST AGAINST FORMWORK

30Mpa/19mm concrete

6	Plinths	m3	4	
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Carried to Collection

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SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 3
Concrete, Formwork and Reinforcement
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7	Slabs including beams and inverted beams	m3	6	
<u>TEST CUBES</u>				
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	6	
<u>Core Drilling</u>				
9	Allow a sum of R20 000.00 (Twenty Thousand Rands) for additional tests required on existing concrete slab		Item	
<u>35 MPa non-shrink grout</u>				
10	Bedding approximately 10mm thick under 250 x 345mm base plate including chamfered edges all round	No	30	
<u>CONCRETE SUNDRIES</u>				
<u>Finishing top surfaces of concrete smooth with a wood float</u>				
11	Aprons to falls	m2	74	
<u>SMOOTH FORMWORK</u>				
<u>Smooth formwork to soffits</u>				
12	Soffits of slabs exceeding 1 500mm and not exceeding 3 500mm high	m2	25	
13	Beams propped up not exceeding 3 500mm high	m2	13	
<u>Smooth formwork to sides</u>				
14	Sides of plinths	m2	42	
<u>MOVEMENT JOINTS, ETC</u>				
<u>Expansion joints with expanded polystyrene with tear off strip between vertical concrete and brick surfaces</u>				
15	10mm joints not exceeding 300mm high	m	47	
<u>Saw cut joints</u>				
16	30 x 5mm saw cut joints on top of concrete	m	67	
Carried to Collection				R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 3 Concrete, Formwork and Reinforcement KwaZulu Natal Botanical Gardens - Durban				

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 4</u>			
<u>MASONRY</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>BRICKWORK</u>			
<u>Sizes in descriptions</u>			
Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick			
<u>Hollow walls</u>			
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			
<u>Face bricks</u>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<u>Pointing</u>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc			
<u>BRICKWORK</u>			
<u>SUPERSTRUCTURE</u>			
Carried to Collection			R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 4 Masonry KwaZulu Natal Botanical Gardens - Durban			

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	<u>Corobrik or equal approved 7Mpa nominal compressive strength imperial NFP load bearing perforated plaster brick laid in walls, bedded and jointed in Class II mortar</u>		
1	Half brick walls	m2	64
2	One brick walls	m2	56
3	350mm thick wall	m2	324
	<u>BRICKWORK SUNDRIES</u>		
	<u>Bagging of 1:3 cement and sand mixture</u>		
4	One brick surfaces	m2	250
	<u>2,5mm Brickwork reinforcement</u>		
5	75mm Wide reinforcement built in horizontally	m	1 390
6	150mm Wide reinforcement built in horizontally	m	1 560
	<u>PRECAST CONCRETE</u>		
	<u>Prestressed fabricated concrete lintels including necessary temporary supports</u>		
7	100 x 75mm Lintels in lengths not exceeding 3m	m	115
8	100 x 75mm Lintels in lengths exceeding 3m and not exceeding 6m	m	84
	<u>NUTEC-CEMENT/FIBRE CEMENT WINDOW SILLS</u>		
	<u>Everite Nutec or equal approved window sills in single lengths bedded in class I mortar including fixing lugs screwed to underside with self tapping screws</u>		
9	150 x 15mm wide sills set flat and slightly projecting	m	133
	Carried to Collection		R
	Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 4 Masonry KwaZulu Natal Botanical Gardens - Durban		

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Item No		Quantity	Rate	Amount
<u>SECTION NO. 2</u>				
<u>BILL NO. 5</u>				
<u>WATERPROOFING</u>				
<u>PREAMBLES</u>				
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
<u>SUPPLEMENTARY PREAMBLES</u>				
<u>Waterproofing</u>				
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				
<u>DAMPPROOFING OF WALLS AND FLOORS</u>				
<u>One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)</u>				
1	In walls	m2	65	
<u>'Sika Cemflex' acrylic based emulsion waterproofing membrane or equal approved</u>				
2	In walls and floors	m2	15	
<u>One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape</u>				
3	Under surface beds	m2	5	
Carried to Collection				R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 5 Waterproofing KwaZulu Natal Botanical Gardens - Durban				

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	<u>Two coats 'ABE Brixéal' bitumen emulsion waterproofing coating</u>				
4	On bagged brick walls	m2	250		
	<u>'Fixit Dampshield' or equal approved cementitious waterproofing paint</u>				
5	In walls	m2	119		
	<u>WATERPROOFING TO ROOFS, BASEMENTS, ETC</u>				
	<u>Sikalastic-841 ST or equal approved waterproofing over all upstands and roof installed in strict accordance with manufacturers specification. Waterproofing to be installed by an Approved Waterproofing Contractor under a ten year guarantee</u>				
6	On flat roofs	m2	35		
7	Additional membrane 150mm girth at turn-ups including flashing strip 150mm girth and sealing top edge into groove with mastic	m	55		
	<u>Two coats bituminous aluminium paint</u>				
8	On waterproofing to roofs	m2	35		
	<u>SEALING STRIPS, JOINT SEALANTS, ETC</u>				
	<u>"Compriband" bitumen impregnated foam plastic joint sealing strips</u>				
9	10 x 10mm in expansion joints	m	165		
	<u>Polysulphide sealing compound including backing cord, bond breaker, primer, etc or approved joint filler</u>				
10	8 x 13mm in saw cut joints in floors	m	70		
11	10 x 10mm in expansion joints	m	20		
12	20 x 20mm in construction joints	m	180		
Carried to Collection				R	
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 5 Waterproofing KwaZulu Natal Botanical Gardens - Durban					

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Item No		Quantity	Rate	Amount
<u>SECTION NO. 2</u>				
<u>BILL NO. 6</u>				
<u>ROOF COVERINGS</u>				
<u>PREAMBLES</u>				
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
<u>PROFILED METAL SHEETING AND ACCESSORIES</u>				
<u>'Global Roofing Solutions' or equal approved 0,6mm thick 700mm cover Kli p-Lok 700™ profile ZINCAL® AZ150 shelter G550 Chromadek roof sheeting, with grey coating on underside and traffic green on top, fixed to steel intermediate purlins at 2 500mm centres and eaves and ridge p urlins at 2 100mm centres using KL700 clips fixed with 10No.16 x 16mm long self drilling wafer head PH2 screws, No. 3 drill point fasteners, all in accordance with the manufacturer's specifications</u>				
1	Roof coverings with pitch not exceeding 40 degrees	m2	340	
2	Ridge capping	m	30	
3	Close fitting adjustable ridge capping	m	60	
4	Eaves filler	m	78	
5	Eaves flashing	m	78	
<u>ROOF AND WALL INSULATION</u>				
<u>25mm thick Lambda board or equal approved thermal insulation ceiling board fixed directly onto galvanised purlins</u>				
6	Insulation laid on galvanised purlins	m2	340	
Carried Forward to Summary of Section No. 4				R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 6 Roof coverings KwaZulu Natal Botanical Gardens - Durban				

Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u> <u>BILL NO. 7</u> <u>CARPENTRY AND JOINERY</u> <u>PREAMBLES</u> NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>SUPPLEMENTARY PREAMBLES</u> <u>Fixing</u> Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere <u>Joinery</u> Descriptions of frames shall be deemed to include frames, transomes, rails, etc Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts <u>Decorative thermosetting plastic laminate covering</u> Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish <u>EAVES, VERGES, ETC</u>			
Carried to Collection			R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban			

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<u>Everite Nutec or equal approved</u>					
1	12 x 225mm fascias boards fixed to galvanised portal frames including galvanised steel H-profile joiners	m	60		
2	80 x 275mm barge boards fixed to galvanised portal frames including galvanised steel H-profile joiners	m	30		
<u>Tempered fibre-cement internal window sills</u>					
3	150 x 15mm thick internal window sill installed below window with sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in class II mortar with plastic slip joints at end at end of sills at plaster reveals and projecting from the finished face of wall, all in accordance with the manufacturer's recommendations	m	55		
<u>SKIRTINGS</u>					
<u>Hammond Timbers & Maching or equal timber skirting</u>					
4	140 x 20mm solid timber skirting plugged	m	130		
<u>DOORS ETC</u>					
<u>44mm thick solid flush door as 'Swartland' or equal approved, MDF horizontal pane timber leaf hung to timber frame (elsewhere measured)</u>					
5	Single door size 875 x 2 090mm high (DT01)	No	6		
6	Single door size 1 000 x 2 090mm high (DT05)	No	2		
<u>44mm thick external solid door as 'Swartland' or equal approved, PD60 horizontal pane timber leaf hung to timber frame (elsewhere measured)</u>					
7	Single door size 875 x 2 090mm high (DT12)	No	1		
<u>BEADS, ARCHITRAVES, ETC</u>					
<u>Wrought Meranti</u>					
8	19 x 60mm meranti architrave	No	100		
Carried to Collection				R	
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 7 Carpentry and joinery KwaZulu Natal Botanical Gardens - Durban					

FRAMED FRAMES, ETC

Wrought Meranti

9	135 x 53mm hardwood frame	m	50	
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JOINERY FITTINGS, ETC

SUPPLEMENTARY PREAMBLES

General

The following cupboard fittings have been given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc

Prices are to include for all necessary filler pieces against walls etc

References

References given in descriptions refer to the respective types of fittings detailed on the architect's drawings annexed to these bills of quantities for tender purposes

Joinery fittings

10	Provide the amount of R370 000.00 (Three Hundred and Seventy Thousand Rands) for joinery fittings installations including builders works complete		Item	370 000.00
11	Allow for profit on above		Item	
12	Allow for attendance on the above		Item	

Carried to Collection

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Section No. 4
SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 7
Carpentry and joinery
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 8</u>			
	<u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>SUPPLEMENTARY PREAMBLES</u> <u>Fixing</u> Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere <u>Ceilings</u> Unless otherwise described ceilings shall be deemed to be horizontal <u>SUSPENDED CEILINGS</u>			
	Carried to Collection			
	Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 8 Ceilings, Partitions and Access Flooring KwaZulu Natal Botanical Gardens - Durban			
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	<u>OWA Acoustic Futura Premium or equal approved biological absorbable mineral wool ceiling tiles, NRC - 0.75, size 1 200 x 600 x 15mm with square-edge and white painted finish laid on fire rated OWAconstruct S3 exposed demountable T24 suspension system comprising of galvanised main tees and cross tees with main tees suspended by means of galvanised hangers at centres not exceeding 1 200mm with ceiling perimeter finished with OWAconstruct shadow line W-trim, plugged and screwed at 200mm centres and all installed to manufacturer's instruction</u>				
1	Ceiling suspended not exceeding 1m below steel structure at approximately 1 000mm centres	m2	200		
	<u>Lafarge or equal approved gypsum ceiling access panel comprising of 635 x 635 white epoxy coated aluminium with 580 x 580 white epoxy coated steel bottom hinged pan as supplied Lafarge or equal approved gypsum fitted flush to flush plaster steel T-suspended ceiling, pop reverted through stalk of frame into prepared ceiling structure material, all in accordance with the manufacturer's recommendations</u>				
2	Access panels	No	4		
	<u>CAPCO or equal approved cornices to suspended ceilings</u>				
3	30mm light grey powder coated aluminium shadow line plugged	m	77		
	<u>INSULATION, ETC</u>				
	<u>'Aerolite' or equal approved insulation</u>				
4	75mm thick 'Isover Aerolite' or equal approved flexible non-combustible lightweight fibreglass reinforced thermal insulation blanket closed fitted with ends butted firmly and placed on top of ceiling, etc	m2	200		
	<u>Signage and wayfinding</u>				
	<u>PARTITIONS ETC</u>				
	<u>FIXED PARTITIONS</u>				
Carried to Collection					R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 8 Ceilings, Partitions and Access Flooring KwaZulu Natal Botanical Gardens - Durban					

SUPPLEMENTARY PREAMBLES

Drywall partition systems

Partitions consisting of 63,5mm steel studs inserted at 600mm centres into 63,5mm steel track at top and bottom, cladded on both sides as described, including additional studs as necessary at abutments, ends, etc. Boards shall be fixed in strict accordance with the manufacturer's instructions and all joints shall be taped and jointed

Unless otherwise described rates for partitions shall be deemed to include for standard flat section aluminium skirtings on both sides

Wall paper and/or paint and varnish finishes are given elsewhere

Operable Partition

5	Provide the sum of R50 000,00 (Fifty Thousand Rands) for operable partition complete by Specialists	Item	50 000.00
6	Allow for profit on above	Item	
7	Allow for attendance on the above	Item	

Carried to Collection

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Section No. 4
SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 8
Ceilings, Partitions and Access Flooring
KwaZulu Natal Botanical Gardens - Durban

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 8</u>			
	<u>FLOOR COVERINGS, WALL LININGS, ETC</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>FLOOR COVERINGS</u>			
	<u>ROCOCO 'Flaming Dahlia' or equal approved stick down vinyl planks from Van Dyck or equal approved with Eco-Lay 2.5mm Anti-microbial, anti fatigue, thermal recycled rubber underlay laid in accordance with the code of practise for the installation of textile floor coverings (SANS 10186)</u>			
1	187 x 1 227mm timber floor boards laid in accordance with the Code of Practice for installation of textile floor coverings (SANS10186)	m2	174	
	<u>POLISH, SEALERS, ETC</u>			
	<u>Sweep, clean with detergent complying with SABS 825, rinse and apply three coats of water emulsion polish complying with SABS 1042, including buffing after application of each coat of polish</u>			
2	On laminate flooring	m2	174	
	Carried Forward to Summary of Section No. 4			
	Section No. 4			
	SECTION 4: NEW HERBARIUM OFFICE BLOCK			
	Bill No. 9			
	Floor Coverings			
	KwaZulu Natal Botanical Gardens - Durban			

Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 9</u>			
<u>IRONMONGERY</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Proprietary items</u>			
Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items			
Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered			
On request returnable samples are to be provided to the principal agent for consideration			
Carried to Collection			R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 10 Ironmongery KwaZulu Natal Botanical Gardens - Durban			

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
 AN Anodised natural
 AS Anodised silver
 AB Anodised bronze
 AG Anodised gold
 ABL Anodised black
 PB Polished brass
 PL Polished and lacquered
 PT Epoxy coated
 SD Sanded

The following Ironmongery by door Type Geze or equally approved

Door Type : DT01

1	Geze 76mm profile arch sash lock S/S Code 730/68	No	6
2	Geze N/PL double cylinder 66mm STD Code IG95093338	No	6
3	Geze Daytona 19mm lever on rose Code EDD/101	Pairs	6.0
4	Geze Prof cylinder escutcheon S/SS Code ED908/CYL	Pairs	6.0
5	Geze 096/76-S/S B/B hinge 100x75x2.7 304GR Code GES211076	Pairs	9.0
6	Geze S/steel F/MNT door stop Code 140/69	No	6

Door Type : DT02

7	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	6.0
8	Geze BTB S.S O/Set 375x350x25mm JBS2090S/350BTB	Pairs	3.0
9	Aluminium flush bolt Code FLUSHBOLT	No	4

Carried to Collection

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Section No. 4
 SECTION 4: NEW HERBARIUM OFFICE BLOCK
 Bill No. 10
 Ironmongery
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10	Geze SS N/Style oval cylinder escutcheon Code GZZW4405/CYL	Pairs	2.0
11	Geze N/PL double cylinder 66mm STD Code IG95093338	No	4
12	Geze Prof cylinder deadlock SS Code 642/35	No	4
13	TS5000 with guide rail SR Code AZ5003SR	No	4
<u>Door Type : DT03</u>			
14	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	2.0
15	SS N/Style Oval cylinder escutcheon Code GZZW4405/CYL	Pairs	1.0
16	Daytona 19mm lever handle on narrow style rose Code Geze EDD/101NS	Pairs	1.0
17	Geze Prof CYL S/lock D/back latch SS Code 625/35	No	1
18	Geze N/PL double cylinder 66mm STD Code IG95093338	No	1
<u>Door Type : DT05-1</u>			
19	096/76-S/S B/B hinge 100x 75 x 2.7 304GR Code GERS21076	Pairs	2.0
20	Geze S/ST P/PL 160 x 160 x 1.2mm E/Male	No	1
21	265/01 - Helping hand L/H L/H or R/H Code 295/01	No	1
22	Geze B/T S.S P/hand 375 x 350 x 25mm Code JD213/350 B/T	No	2
23	Geze S/ST P/PL 160 x 160 1.2mm E/PAR Code 079/160E/P	No	1
24	TS4004G DA DCL C/W Guide Rail SR Code AZ4003DA	No	1
Carried to Collection			
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 10 Ironmongery KwaZulu Natal Botanical Gardens - Durban			

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<u>Door Type : DT05-2</u>					
25	096/76-S/S B/B hinge 100x 75 x 2.7 304GR Code GERS21076	Pairs	2.0		
26	Geze S/ST P/PL 160 x 160 x 1.2mm E/FEM Code 079/160E/F	No	1		
27	265/01 - Helping hand L/H L/H or R/H Code 295/01	No	1		
28	Geze B/T S.S P/hand 375 x 350 x 25mm Code JD213/350 B/T	No	2		
29	Geze S/ST P/PL 160 x 160 1.2mm E/PAR Code 079/160E/P	No	1		
30	TS4000G DA DCL C/W guide rail SR Code AZ4003DA	No	1		
<u>Door Type : DT06</u>					
31	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	8.0		
32	Geze BTB S.S O/Set 375x350x25mm JBS2090S/350BTB	Pairs	4.0		
33	Aluminium flush bolt Code FLUSHBOLT	No	4		
34	SS N/Style Oval cylinder escutcheon Code GZZW4405/CYL	Pairs	2.0		
35	Geze N/PL double cylinder 66mm STD Code IG95093338	No	2		
36	Geze Prof cylinder deadlock SS Code 642/35	No	2		
<u>Door Type : DT07-1</u>					
37	Geze BTB S.S O/Set 375x350x25mm JBS2090S/350BTB	Pairs	1.0		
38	Geze Prof cylinder deadlock SS Code 642/35	No	1		
Carried to Collection				R	
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 10 Ironmongery KwaZulu Natal Botanical Gardens - Durban					

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39	TS5000 with guide rail SR Code AZ5003SR	No	1	
40	Geze N/PL double cylinder 66mm STD Code IG95093338	No	1	
41	SS N/Style Oval cylinder escutcheon Code GZZW4405/CYL	Pairs	1.0	
42	Geze S/steel F/MNT door stop Code 140/69	No	1	
43	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	2.0	
<u>Door Type : DT07-2</u>				
44	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	4.0	
45	Geze Prof cylinder deadlock SS Code 642/35	No	2	
46	Geze BTB S.S O/Set 375x350x25mm JBS2090S/350BTB	Pairs	2.0	
47	TS5000 with guide rail SR Code AZ5003SR	No	2	
48	Geze N/PL double cylinder 66mm STD Code IG95093338	No	2	
49	SS N/Style Oval cylinder escutcheon Code GZZW4405/CYL	Pairs	2.0	
50	Geze S/steel F/MNT door stop Code 140/69	No	2	
<u>Door Type : DT08</u>				
51	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	4.0	
52	SS N/Style Oval cylinder escutcheon Code GZZW4405/CYL	Pairs	2.0	
53	Geze Daytona 19mm lever handle on narrow style Code Geze EDD/101NS	Pairs	2.0	
54	Geze Prof cylinder deadlock SS Code 642/35	No	2	
Carried to Collection				
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 10 Ironmongery KwaZulu Natal Botanical Gardens - Durban				

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55	Geze N/PL double cylinder 66mm STD Code IG95093338	No	2		
	<u>Door Type : DT10</u>				
56	Geze 76mm profile arch sash lock S/S Code 730/68	No	1		
57	Geze N/PL double cylinder 66mm STD Code IG95093338	No	1		
58	Geze Daytona 19mm lever on rose Code EDD/101	Pairs	1.0		
59	Geze Prof cylinder escutcheon S/SS Code ED908/CYL	Pairs	1.0		
60	Geze 096/76-S/S B/B hinge 100x75x2.7 304GR Code GES211076	Pairs	1.5		
61	Geze S/steel F/MNT door stop Code 140/69	No	1		
	<u>Door Type : DT11</u>				
62	Geze 091/01-Sinkless Hinge 100x44 ALU Code GER020066	Pairs	2.5		
63	Geze SS N/Style oval cylinder escutcheon Code GZZW4405/CYL	Pairs	1.0		
64	Geze Daytona 19mm lever handle on narrow style rose Code EDD/101NS	Pairs	1.0		
65	Geze Prof CYL S/lock D/back latch SS Code 625/35	No	1		
66	Geze N/PL double cylinder 66mm STD Code IG95093338	No	1		
	<u>Door Type : DT12</u>				
67	TS2000G DCL with g/rail and arm SR Code AZ2003SR	No	2		
68	Geze S/ST P/PL 160 x 160 x 1.2mm E/M&F Code 079/160E/MF	No	2		
Carried to Collection				R	
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 10 Ironmongery KwaZulu Natal Botanical Gardens - Durban					

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69	096/76-S/S B/B hinge 100x 75 x 2.7 304GR Code GERS21076	Pairs	2.0		
70	265/01 - Helping hand L/H L/H or R/H Code 295/01	No	3		
71	Geze BTB S.S O/Set 375x350x25mm JBS2090S/350BTB	Pairs	2.0		
<u>BATHROOM FITTINGS, ETC</u>					
<u>"Franke" or other equal approved</u>					
72	600 x 55mm polished stainless steel single towel rail, Model BHM9H Code 359933 plugged	No	2		
73	68mm long x 40mm wide polished stainless steel wall mounted Robe hook with rubber Model BHM8P Code 359945 plugged	No	6		
74	203mm diameter polished stainless steel towel ring Model BHM18P Code 359937, plugged	No	2		
75	300mm x 305mm x 134mm wall mounted paper towel dispenser 18/10 stainless steel with satin finished with surface treatment - InoxPlus (Anti fingerprint), Model STRX600 Code 359700 supplied complete with standard cylinder lock and key plugged	No	2		
76	141 x 295 x 127mm wall mounted double toilet roll holder, 18/10 stainless steel with satin finish, Model CHRX672 Code 359808 toilet roll holder to be supplied complete with a single piece pressed lid, welded container and standard cylinder lock with key plugged.	No	2		
77	18L stainless steel sanitary bin plugged	No	1		
78	355mm x 460mm x 168mm wall mounted waste bin, 0.8mm stainless steel , surface satin finish Model RODX605, Code 359983 complete with all screws and dowels plugged.	No	2		
79	235mm x 135mm diameter wall toilet brush holder, 0.9mm stainless steel with polished finish, nylon brush included, Model BS686 Code 359800.	No	2		
Carried to Collection				R	
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 10 Ironmongery KwaZulu Natal Botanical Gardens - Durban					

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80	300mm x 305mm x 134mm wall mounted liquid soap dispenser 18/10 stainless steel with satin finish Model BSP618 Code 359800 supplied complete with standard cylinder lock and key plugged.	No	2		
	<u>"VAAL" or other approved</u>				
81	32mm diameter grab rail code 'VAA SR1' with flush valve grab rail size 750mm x 90mm deep fixed to wall with stainless steel screws plugged.	No	1		
82	Dogleg grab with 2 flanges rail code 'VAA DL2' size 300 x 300 x 300mm deep fixed to with stainless steel screws plugged	No	1		
<u>VERTICAL BLINDS</u>					
	<u>Hunters Douglas SA or equal approved Luxaflex aluminium internal vertical blinds to be installed in strict accordance with manufacturers specifications</u>				
83	Allow a sum of R150 000.00 (One Hundred and Fifty Thousand Rands) for supply and installations of vertical blinds by specialist			Item	
<u>ENTRANCE MAT</u>					
	<u>CFD Nuway or equal approved reversible open construction double sided entrance mate size 1 600 x 1 800mm x 12mm gauge consisting of grey nylon pile and rubber wiper inserts fixed into modular double sided anodised aluminium matwell frame (Code: FRAW346) or equal approved complete with mitred edged and corner connectors, bedded into screed, all in accordance with the manufacturer's recommendations</u>				
84	1 600mm x 1 800mm x 12mm gauge entrance mat	No	1		
Carried to Collection					R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 10 Ironmongery KwaZulu Natal Botanical Gardens - Durban					

Incomplete New Office Building and Renovations
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 10</u>			
	<u>STRUCTURAL STEELWORK</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Descriptions</u>			
	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			
	<u>CAREFULLY DISMANTLE AND SET ASIDE FOR GALVANIZING</u>			
	<u>Carefully dismantle existing structural steel frame complete and set-aside for galvanizing:</u>			
	<u>Portal Frames</u>			
1	254 x 146 x 31 UB Portal Frame	t	8.15	
	<u>Beams</u>			
2	152 x 152 x 23UC eaves beam	t	2.30	
	Carried to Collection			R
	Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 11 Structural Steel KwaZulu Natal Botanical Gardens - Durban			

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	<u>Portal Frames</u>				
13	254 x 146 x 31 UB Portal Frame	t	8.15		
	<u>Beams</u>				
14	152 x 152 x 23UC eaves beam	t	2.30		
	<u>Bracing</u>				
15	60 x 60 x 4L cross bracing	t	0.43		
16	80 x 80 x 6L cross bracing	t	0.04		
	<u>Columns</u>				
17	60 x 3 CHS column	t	0.81		
18	101.6 x 3 CHS column	t	1.30		
19	120 x 60 x 3RHS column	t	0.17		
20	IPE 160 AA UB supports	t	0.11		
	<u>Rafters</u>				
21	120 x 60 x 3RHS rafter	t	0.25		
	<u>Channels</u>				
22	180 x 70 PFC closer beam	t	1.47		
	<u>DELIVERY OF STEEL WORK TO SITE</u>				
	<u>Delivery of steel work to site from galvanizing workshop</u>				
23	Normal delivery	t	15.03		
	<u>ERECTION ON SITE</u>				
	<u>Take steel from site and erect</u>				
24	Erect columns, roof trusses, rafters, lattice girders and beams on site	t	16.37		
	Carried to Collection			R	
	Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 11 Structural Steel KwaZulu Natal Botanical Gardens - Durban				

CORROSION PROTECTION OF STRUCTURAL STEELWORK

Preparation of steel work

25	General surfaces of steel work as per Engineers guidance	m2	462
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Painting steelwork

26	General surfaces of steel work as per Engineers guidance	m2	462
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GALVANISED STEEL COLUMNS, BEAMS, RAFTERS, ETC

Beams

27	152 x 152 x 23UC eaves beam	t	1.28
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SUNDRY STRUCTURAL STEEL WORKS

Galvanised sundry structural steel works

28	Galvanised sundry structural steel works	t	1.50
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PLATES, GUSSETS, BOLTS, ETC

Galvanised plates, gussets, bolts, etc

29	Galvanised plates, gussets, cleats, etc	t	2.00
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30	Bolts, nuts, etc	t	2.40
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BOLTS, FASTENERS, ETC

Hot dipped galvanised bolts to columns, beams, rafters, etc

31	M12 anchor bolts	No	64
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32	M16 grade 4.8 HD bolts	No	144
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33	M16 grade 4.8 shield expansion anchor bolts	No	80
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Carried to Collection

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Section No. 4
SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 11
Structural Steel
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Bill No. 11
Structural Steel
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 11</u>			
<u>METALWORK</u>			
<u>PREAMBLES</u>			
<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Descriptions of bolts, anchors, etc</u>			
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 Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres			
<u>ALUMINIUM WINDOWS, DOORS, ETC.</u>			
<u>ALUMINIUM DOORS, ETC.</u>			
<u>Powder coated aluminium windows with stainless steel windows stays, glazed with 6mm thick obscured laminated toughened safety glazing fixed to brickwork (colour to be confirmed by Architect)</u>			
1	Window type WT01 size 595 x 595mm high	No	3
Carried to Collection			R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 12 Metalwork KwaZulu Natal Botanical Gardens - Durban			

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	<u>Powder coated aluminium windows with stainless steel windows stays, glazed with 6mm thick clear safety glass fixed to brickwork (colour to be confirmed by Architect)</u>				
2	Window type WT04 size 2 100 x 480mm high	No	4		
3	Window type WT05 size 2 850 x 1 300mm high	No	2		
4	Window type WT06 size 2 890 x 480mm high	No	4		
5	Window type WT19 size 5 600 x 3 200mm high	No	1		
6	Window type WT11 size 7 020 x 590mm high	No	2		
7	Triangular shaped window type WT11 size 7 020 x 2 985mm high	No	2		
8	Extra over for tinting of above window glazing - bronze colour	m2	49		
	<u>Powder coated aluminium windows with stainless steel windows stays, glazed with 6mm thick laminated toughened safety glazing fixed to brickwork (colour to be confirmed by Architect)</u>				
9	Window size 2 140 x 2 570mm high	No	1		
	<u>Powder coated aluminium windows with stainless steel windows stays, glazed with 6mm thick obscured laminated toughened safety glazing fixed to brickwork (colour to be confirmed by Architect)</u>				
10	Window type WT09 size 800 x 2 625mm high	No	2		
11	Window WT14 size 1 300 x 1 275mm high	No	4		
12	Window type WT12 size 1 900 x 480mm high	No	6		
13	Window type WT07 size 1 900 x 2 795mm high	No	4		
14	Window type WT10 size 2 100 x 1 300mm high	No	1		
15	Window type WT02 size 2 100 x 2 570mm high	No	1		
16	Window type WT16 size 2 800 x 830mm high	No	2		
Carried to Collection				R	
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 12 Metalwork KwaZulu Natal Botanical Gardens - Durban					

**Incomplete New Office Building and Renovations
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17	Window type WT13 size 2 890 x 430mm high	No	4		
18	Window type WT08 size 2 850 x 1 000mm high	No	2		
19	Window WT03 size 3 100 x 480mm high	No	6		
20	Window WT17 size 5 600 x 3 200mm high	No	2		
<u>ALUMINIUM SHOPFRONT</u>					
<u>Powder coated aluminium shopfronts glazed with 6mm laminated toughened safety glazing fixed to brickwork, partitions, concrete, steel, etc ironmongery as per manufacturer's standard specifications</u>					
21	Shopfront type DT11 overall size 2 825 x 3 515mm high including single 1 175 x 2 250mm high manual operated complete	No	1		
22	Shopfront type DT02 overall size 2 850 x 1 890mm high including 2No double door size 1 890 x 2 275mm high complete	No	2		
23	Shopfront type DT06 overall size 2 850 x 5 600mm high with self closing sliding door size 925 x 2 375mm high complete	No	1		
24	Shopfront type DT03 overall size 3 515 x 2 850mm high including single door size 1 175 x 2 250mm high complete	No	2		
25	Shopfront type DT03 overall size 3 515 x 2 850mm high including single door size 1 175 x 2 250mm high complete	No	1		
26	Shopfront type DT04 overall size 5 600 x 2 850mm high including 8No x 695 x 2 275mm high single leaf door manual operated complete	No	2		
<u>ALUMINIUM DOORS, ETC.</u>					
Carried to Collection					R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 12 Metalwork KwaZulu Natal Botanical Gardens - Durban					

	<u>Powder coated aluminium doors with stainless steel door stays, glazed with 6mm thick laminated toughened safety glazing and fixed to brickwork complete including ironmongery as per Architect specification (colour to be confirmed by Architect)</u>				
27	Single door type DT08 size 945 x 2 275mm high complete	No	2		
28	Double door type DT06 size 1 890 x 2 275mm high complete	No	2		
29	Double door type DT07 size 1 500 x 2 300mm high complete	No	4		
	<u>ALUMINIUM LOUVRES</u>				
	<u>Hunters Douglas Aerowing 200AW or equal approved fixed system aluminium extruded fin-shaped Aerowing 200AW 200 x 45 aluminium, following Aerofoil shape end caps with Luxalon Aerowing or equal approved proprietary click in sliding U-profiles and plastic fixation disks and fin-suspension connector (GF PA6). Stainless steel suspension bolt. All fastening materials to be stainless steel in either A2 (304) or A4 (316) quality. Surface treatment to be two layer polyester powder coated, 90 micron, gloss level. Colour to be YW207F from Interpon or equal approved provided that a colour sample is given prior to procurement. Supporting structure to be aluminium structure. Structure to be sufficiently strong and suitable to support occurring loads. Contact between mild steel and aluminium to be avoided.</u>				
30	Aluminium louvres to Architect specifications complete	m2	40		
	<u>SECURITY INSTALLATIONS</u>				
	<u>Security Installations</u>				
31	Allow a sum of R200 000.00 (Two Hundred Thousand Rands) for security installations by specialist		Item		
	<u>STAINLESS STEEL HANDRAILS, BALUSTRATES, ETC</u>				
Carried to Collection					R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 12 Metalwork KwaZulu Natal Botanical Gardens - Durban					

KwaZulu Natal Herbarium: National Botanical Garden - Durban

Section No. 4
SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 12
Metalwork
KwaZulu Natal Botanical Gardens - Durban

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 2</u>			
	<u>BILL NO. 12</u>			
	<u>PLASTERING</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>FLOOR SCREEDS</u>			
	<u>1 : 3 cement plaster screed wood floated on concrete</u>			
1	30mm Thick on floors and landings	m2	25	
2	30mm Thick on floors and landings	m2	259	
	<u>SELF LEVEELING SCREED</u>			
	<u>UZINNC 145 or equal approved self levelling screed interior application compound laid on minimum 30mm thick screed to Architect Specification</u>			
3	On floors	m2	241	
	<u>INTERNAL PLASTER</u>			
	<u>Cement plaster on brickwork</u>			
4	On walls	m2	380	
5	On narrow walls	m2	62	
	<u>EXTERNAL PLASTER</u>			
	 Carried to Collection Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 13 Plastering KwaZulu Natal Botanical Gardens - Durban		R	

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KwaZulu Natal Herbarium: National Botanical Garden - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 13</u>			
<u>TILING</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Fixing</u>			
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			
Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat			
Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts from the range of products as recommended by the manufacturer of the tiles			
<u>WALL TILING</u>			
<u>600 x 600 x 10mm thick ceramic tiles laid on Corprox or equal approved waterproof tile grout on screed (screed elsewhere) and flush pointed with tinted waterproof jointing compound</u>			
1	On walls	m2	32
2	Splashbacks	m2	3
Carried to Collection			R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 14 Tiling KwaZulu Natal Botanical Gardens - Durban			

FLOOR TILING

**600 x 600 x 10mm thick ceramic tiles laid on
Corprox or equal approved waterproof tile grout on
screed (screed elsewhere) and flush pointed with
tinted waterproof jointing compound**

3	On floors and landings	m2	18
4	100mm high cut tile skirting	m	44

EDGE TRIMS, NOSING, ETC

Edge trims, nosings, etc

5	9mm "ASE090.MS" aluminium straight edge trims	m	6
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Section No. 4
SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 14
Tiling
KwaZulu Natal Botanical Gardens - Durban

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 14</u>			
<u>PLUMBING AND DRAINAGE</u>			
<u>(PROVISIONAL)</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Wire gratings</u>			
Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings			
<u>Stormwater channels</u>			
Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc, and disposal of surplus material on site			
<u>Stainless steel basins, sinks, wash troughs, urinals, etc</u>			
Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)			
Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)			
Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)			
Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable			
Carried to Collection			R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 15 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban			

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

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 or sealed with butyl rubber rings

uPVC pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm 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

High density polyethylene (HDPE) pipes and fittings

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

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

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Copper pipes

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. 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

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and 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

Fixing of pipes

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

Laying, backfilling, bedding, etc of pipes

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

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Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

SABS 1200L : Medium-pressure pipelines

SABS 1200LD : Sewers

SABS 1200LE: Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB :
Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB : Bedding (Pipes)

Unless otherwise described bedding of rigid pipes shall be Class B bedding

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

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As-built drawings

Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)

RAINWATER DISPOSAL

Mr Gutter or equal approved charcoal colour, powder coated aluminium gutter and downpipes complete with, outlets, plinths offsets, bends and shoes

1	80 x 55 x 5mm thick powder coated aluminium rainwater eaves gutter	m	60
2	Extra over gutter for stopped end	No	8
3	Extra over gutter for outlet for 85 x 55mm pipe	No	16
4	80 x 55mm powder coated aluminium rainwater downpipe	m	64
5	Extra over rainwater pipe for shoe	No	16
6	Extra over rainwater pipe for bend	No	16
7	Extra over rainwater pipe for offset plinth	No	2

SANITARY FITTINGS

12mm Stainless steel type 304 (grade 18/10)

8	Franke or equal approved Quinline QLX611 stainless steel single bowl end bowl drop in sink fixed to worktop (elsephwere)	No	2
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<u>'Vaal' or equal approved</u>					
9	VAAL Code VAA-439010WH or equal approved water closet comprising VAAL Orchid wall hung pan fitted with Jazz Urea or equal approved seat cover and fixed to Groghe UNISSET 130 (code 38643001) concealed cistern fitted with Skate or equal approved bright chrome flush plate	No	1		
10	Paraplegic water closet compromising Val Orchid or equal approved wall hung pan fitted with Jazz Urea or equal approved seat cover and fixed to Groghe UNISSET 130 or equal approved (code 38643001) conceal cistern fitted with Skate or equal approved bright chrome flush plate (code GRO 38564000)	No	2		
11	Vaal Hibiscus or equal approved (code VAA - 702303) vitreuos china wash hand basin size 510 x 405mm with pre punched tap holes and integral overflow and fixed to wall using 2no. 10mm fixing bolts (code VAA - 844820)	No	3		
12	VAAL or equal approved universal full pedestal fixed to floor and basin (Code VAA715000)	No	1		
<u>Cobra Watertech or other approved</u>					
13	COB303-32 Click slotted cp waste with 62mm flanged and 80mm long shank	No	3		
14	Code 345/50 cp bottle trap with 75mm deep seal trap and adjustable telescopic pipe, 32mm inlet and 50mm outlet for 50mm pvc pipe	No	3		
15	40 x 40mm flexi P-trap	No	1		
<u>WASTE UNIONS, ETC.</u>					
16	32 mm Chromium plated basin waste union	No	3		
<u>TRAPS, ETC.</u>					
17	40 x 50mm Rubber butyl deep seal "P" or "S" trap	No	2		
18	32 x 50 mm Chromium plated bottle trap	No	1		
19	40 x 50mm Chromium plated bottle trap	No	1		
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<u>TAPS, VALVES, ETC.</u>					
<u>"Cobra Watertech" or other equal approved</u>					
20	15mm 832/350F Angle valve with 350mm flexible hose connector	No	1		
21	Cobra Ledimo or equal approved (Code LO 214-15) CP basin pillar tap	No	1		
22	Cobra or equal approved (code 503 - 21) cp elbow action basin pillar tap	No	2		
23	Cobra or equal approved (Code 3215ST) deck mounted pillar tap with S0141 overarm swivel spout	No	2		
24	15mm cp braided tap connector	No	5		
25	Cobra or equal approved (code 832-10) cp angle regulating valve	No	5		
26	15mm ball o stop isolating valve with lever type handle	No	3		
27	22mm ball o stop isolating valve with lever type handle	No	3		
28	25mm ball o stop isolating valve with lever type handle	No	2		
29	35mm ball o stop isolating valve with lever type handle	No	1		
30	50mm ball o stop isolating valve with lever type handle	No	1		
31	35mm brass non-return valve	No	1		
32	50mm brass non-return valve	No	1		
33	35mm brass in line strainer	No	1		
34	50mm brass in line strainer	No	1		
<u>SANITARY PLUMBING</u>					
<u>uPVC soil and vent pipes</u>					
35	50mm Pipes	m	80		
36	110 mm Pipes	m	95		
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37	50 mm Pipes laid in and including trenches not exceeding 1m deep under surface beds	m	60	
	<u>Extra over 50 mm uPVC pipes for fittings</u>			
38	BSP adaptor	No	4	
39	Bend	No	6	
40	Junction	No	9	
41	Access bend	No	10	
42	Access junction	No	10	
43	Two-way vent valve	No	4	
	<u>Extra over 110 mm uPVC pipes for fittings</u>			
44	Pan collar	No	3	
45	Bend	No	10	
46	Junction	No	7	
47	Access bend	No	8	
48	Access junction	No	4	
49	Two-way vent valve	No	5	
	<u>Sundries</u>			
50	Testing waste pipe system		Item	
	<u>WATER SUPPLIES</u>			
	<u>Class 0 copper pipes</u>			
51	15mm Pipes	m	155	
52	22mm Pipes	m	125	
53	28mm Pipes	m	70	
54	38mm Pipes	m	40	
	Carried to Collection			R
	Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 15 Plumbing and Drainage (Provisional) KwaZulu Natal Botanical Gardens - Durban			

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	<u>Extra over class 0 copper pipes for capillary fittings</u>				
55	15mm Fittings	No	65		
56	22mm Fittings	No	45		
57	28mm elbow	No	15		
58	28mm reducer	No	7		
59	35mm reducer	No	7		
60	35mm elbow	No	12		
61	35mm tee	No	6		
62	35mm reducing tee	No	6		
63	35mm copper to iron coupler	No	6		
	<u>Copper overflow and service pipes</u>				
64	15 mm Service pipe 380 mm girth	No	4		
	<u>Sundries</u>				
65	Testing water pipe system		Item		
	<u>ELECTRIC WATER HEATERS</u>				
	<u>"Kwikot" or equal approved</u>				
66	Kwikot or equal approved 10 litre under sink water heater installed complete including all piping, fittings, valves, etc fitted in strict accordance to manufacturer's instructions.	No	2		
	<u>Sundries</u>				
67	Testing water pipe system		Item		
	<u>WATER SUPPLIES TO FIRE APPLIANCES</u>				
	<u>Galvanised mild steel</u>				
68	22mm Pipes	m	30		
	Carried to Collection			R	
	Section No. 4				
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Item No		Quantity	Rate	Amount
<u>SECTION NO. 2</u>				
<u>BILL NO. 15</u>				
<u>GLAZING</u>				
<u>PREAMBLES</u>				
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
<u>GLAZING TO STEEL WITH PUTTY</u>				
<u>TOPS, SHELVES, DOORS, MIRRORS, ETC</u>				
<u>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</u>				
1	Mirror size 450 x 600mm high	No	3	
Carried Forward to Summary of Section No. 4				R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 16 Glazing KwaZulu Natal Botanical Gardens - Durban				

Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 16</u>			
<u>PAINTWORK</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>PREPARATORY WORK TO EXISTING WORK</u>			
<u>Previously painted plastered surfaces</u>			
Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
<u>Previously painted metal surfaces</u>			
Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
<u>Previously painted wood surfaces</u>			
Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
<u>PAINT SPECIFICATIONS</u>			
All painting shall be done in accordance with "SANS" specifications unless otherwise described			
Carried to Collection			
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 17 Paintwork KwaZulu Natal Botanical Gardens - Durban			R

COLOURS

Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091

PAINTWORK ETC, TO NEW WORK

ON INTERNAL FLOATED PLASTER SURFACES

Prepare surfaces and remove all loose material, one coat 'Dulux Alkali Resistant Plaster Primer' or equal approved as a primer and allow overnight drying. Thinning not permitted then apply 2 coats Dulux Luxurious Silk or equal approved with last coat to achieve a closed film and solid colour. All paints to be applied in strict accordance to manufacturer's guidelines

1	Internal walls	m2	369
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Prepare surfaces and remove all loose material, one coat 'Dulux Alkali Resistant Plaster Primer' or equal approved as a primer and allow overnight drying. Thinning not permitted. One coat Dulux or equal approved universal undercoat and two coats Dulux or equal approved Pearlgo solvent based enamel paint. All paints. All paints to be applied in strict accordance to manufacturer's guidelines

2	Internal walls - wet areas	m2	17
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Prepare surfaces and remove all loose material, one coat 'Dulux Alkali Resistant Plaster Primer' or equal approved as a primer and allow overnight drying. Thinning not permitted then apply 2 coats Dulux Wallguard or equal approved with last coat to achieve with last coat to achieve a closed film and solid colour. All paints to be applied in strict accordance to manufacturer's guidelines

3	External walls	m2	270
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ON EXTERNAL FLOATED PLASTER SURFACES

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SECTION 4: NEW HERBARIUM OFFICE BLOCK
Bill No. 17
Paintwork
KwaZulu Natal Botanical Gardens - Durban

<u>Prepare surfaces and remove all loose material, one coat Dulux or equal approved Trade Alkali Resistant Primer and two coats Dulux Trade 100 Low Sheen or equal approved interior quality paint</u>			
4	Ceilings and cornices	m2	190
<u>ON FIBRE CEMENT BOARD SURFACES</u>			
<u>Prepare surfaces and remove all loose materials, one coat Dulux Trade Alkali Resistant Plaster Primer or equal approved as a primer and thinning not permitted. One coat Dulux or equal approved universal undercoat and two coats Dulux or equal approved Pearlgo Solvent Based Enamel paint. All paints to applied in strict accordance to manufacturer's guidelines</u>			
5	Fascias and barge boards, including priming metal jointing strips	m2	23
<u>ON METAL SURFACES</u>			
<u>Prepare ,etc as specified and apply two coats of bitumen waterproofing based paint inside the gutter</u>			
6	Inside eaves gutter	m2	24
<u>ON WOOD SURFACES</u>			
<u>Prepare surfaces and remove all loose materials, one coat Dulux or equal approved Primer for wood and apply two coats Dulux or equal approved gloss enamel paint</u>			
7	On backs of frames, linings, skirting, etc not exceeding 300mm wide	m	180
<u>Prepare surfaces and remove all loose materials, one coat oil based primer, one universal undercoat and minimum two coats of Dulux or equal approved Pearlgo water based eggshell enamel paint. All paints to applied in strict accordance to manufacturer's guidelines</u>			
8	On door frames, etc	m2	5
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Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 17 Paintwork KwaZulu Natal Botanical Gardens - Durban			

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	<u>Prepare surfaces and remove all loose materials, one coat Dulux or equal approved primer for wood and two coats Dulux or equal approved Pearlgo water Based eggshell enamel paint. All paints to applied in strict accordance to manufacturer's guidelines</u>				
9	On interior skirting, rails, etc	m	219		
	<u>Prepare surfaces and remove all loose materials, one coat Dulux or equal approved Primer for wood and apply two coats Dulux or equal approved gloss enamel paint</u>				
10	On doors (both sides measured flat)	m2	36		
Carried to Collection					R
Section No. 4 SECTION 4: NEW HERBARIUM OFFICE BLOCK Bill No. 17 Paintwork KwaZulu Natal Botanical Gardens - Durban					

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 3</u> <u>BILL NO: 1</u> <u>EXTERNAL WORKS (PROVISIONAL)</u> <u>PREAMBLES</u> <u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill <u>SUPPLEMENTARY PREAMBLES</u> All work must be executed strictly according to SANS 1200 Supplementary preambles in previous bills or trades are equally applicable to this bill and the tenderer is referred to such previous bills for full descriptions which are equally applicable to all items and work in this bill, unless otherwise described <u>MEASUREMENT AND PAYMENT</u> Measurement and payment shall be in accordance with the "Standard System of Measuring Building Works", sixth edition, as well as the other documents referred to or contained in the Tender documents and not according to the SANS specifications. In addition to the "Standard System of Measuring Building Builder's work" the following item will also apply: 1. Classification of materials			
Carried to Collection			R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 1 General Siteworks KwaZulu Natal Botanical Gardens - Durban			

"Hard rock" shall mean granite, quartziz sandstone or other rock of similar hardness which, in the Engineer's opinion, requires drilling, wedging and splitting or the use of explosives.

"Soft rock" shall mean hard material, the removal of which warrants, in the Engineer's opinion, the use of pneumatic tools and includes hard shale, fericite, compact ouklip and stone of similar hardness

"Earth" shall mean all ground other than that classified as 'hard rock" or "soft rock" and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0.03m3 in volume.

Should the contractor consider that any of the excavations are more difficult in nature than excavations in "earth" he shall immediately notify the Quantity Surveyor in writing. Failing such notification the excavation shall deemed to be in "earth" and shall be measured and valued accordingly.

The contractor may use any method he chooses to excavate any class of material, but his chosen method of excavation shall not determine the classification of the excavation.

GENERAL SITE WORKS

SITE CLEARANCE ETC

Site clearance

- | | | | |
|---|--|----|-----|
| 1 | Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc | m2 | 300 |
|---|--|----|-----|

Break up / take down and remove existing work including carting off site by Contractor

- | | | | |
|---|-----------------------|----|----|
| 2 | Unreinforced concrete | m2 | 30 |
|---|-----------------------|----|----|

REMEDIAL WORKS TO EXISTING FENCING

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Section No. 5
SECTION 5: EXTERNAL WORKS (PROVISIONAL)
Bill No. 1
General Siteworks
KwaZulu Natal Botanical Gardens - Durban

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3	<u>Remedial works to existing wire mesh fencing</u> Provide the amount of R70 000.00 (Seventy Thousand Rands) for remedial works to fencing and gates complete.	Item		70 000.00
	Carried to Collection Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 1 General Siteworks KwaZulu Natal Botanical Gardens - Durban		R	

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Item No		Quantity	Rate	Amount
<u>SECTION NO. 3</u>				
<u>BILL NO. 2</u>				
<u>STORMWATER DRAINAGE</u>				
<u>PREAMBLES</u>				
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
<u>STORMWATER DRAINAGE</u>				
<u>Class 34 uPVC pipe laid in Class B bedding including excavations in pickable materials, backfilling and compacting to 95% Modified AASHTO density and all necessary risk of collapse and dewatering of trenches</u>				
1	110mm pipe laid and including excavations not exceeding 1 000mm deep	m	160	
2	160mm pipe laid and including excavations not exceeding 1 000mm deep	m	140	
3	160mm pipe laid and including excavations exceeding 1 000mm and not exceeding 12 000mm deep	m	155	
4	Set of 3 x 100mm PVC pipe laid side by side in ground exceeding 1 000mm and not exceeding 2 000mm deep	m	151	
<u>Extra over 110mm dia for fittings</u>				
5	110mm dia bend.	No	11	
6	160mm dia bend	No	5	
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Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 2 Stormwater Drainage KwaZulu Natal Botanical Gardens - Durban				

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	<u>Catchpit Inlets ,etc</u>				
7	Excavate for and build kerb inlet size 1360 x 780 x 780mm deep externally to invert with one brick wall sides in engineering bricks built in english bond on and including 20Mpa insitu concrete base 150mm thick with ref 245 mesh reinforcing, rendered smooth internally in 1:3 cement mortar, benching up bottom in 20Mpa concrete finished off smooth and 75mm thick 25Mpa concrete cover slab with ref 245 mesh reinforcing size 2000 x 1000mm on 80 x 80 x 5mm angle section frame including leaving or forming opening size 450mm diameter in wall for inlet and 450mm diameter hole for outlet pipe including all formwork, reinforcing, backfilling, compacting, transition kerbs, 8mm round bar anti-litter grilles, etc. Depth to invert exceeding 1000mm and not exceeding 2000mm.	No	5		
	<u>Gratings, Covers etc</u>				
8	400 x 600mm Stormwater grating and frame to SANS 1115 (Saint Gobian:product code 2892 or equal approved)	No	10		
	<u>SUMPS</u>				
	<u>Sumps</u>				
9	Excavate for and build one brickwall sump set on 100mm thick concrete base, with internal wall plaster finished and bottom of manhole graded to fall to open channels set on concrete base. The external face of the manhole to bagwashed and treated with one coat of bitumen paint - size of manhole internally 308 x 308mm not exceeding 1 000mm deep.	No	1		
10	Excavate for and build one brickwall sump set on 100mm thick concrete base, with internal wall plaster finished and bottom of manhole graded to fall to open channels set on concrete base. The external face of the manhole to bagwashed and treated with one coat of bitumen paint - size of manhole internally 800 x 800mm exceeding 1 000mm but not exceeding 1 500mm deep (Cover elsewhere)	No	1		
	<u>Gratings, Covers etc</u>				
11	300 x 300mm cast iron grating and frame	No	14		
Carried to Collection					R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 2 Stormwater Drainage KwaZulu Natal Botanical Gardens - Durban					

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12	450 x 450mm x 27.4kg cast iron dished grating and frame	No	11		
	<u>Sundries</u>				
13	100mm thick 20Mpa concrete encasement around 110mm PVC pipe	m	15		
14	Break into side of existing manahole, hack up benching, install new branch pipe and re-bench manhole to clean even fall. Depth not exceeding 1 500mm.	No	1		
15	Extra over excavation for Class B bedding and backfill material around pipe as supplied by contractor	m3	25		
16	Extra over excavation for pipe trenches, manhole, etc for carting away surplus material to a dumping site located by the contractor	m3	25		
	<u>Connections</u>				
17	Cut into existing stormwater grid inlet for and connect stormwater pipe including, temporary sealing-off, diverting, excavation, backfilling, making good all works on completion, etc	No	1		
	<u>STORMWATER CHANNELS</u>				
	<u>V-drain</u>				
	<u>25MPa/19mm concrete (600mm wide)</u>				
18	V-shaped channel 600mm wide x average 100mm thick reinforced with and including Type 193 fabric reinforcement, with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls (1:200) in panels not exceeding 2 000mm long with 12mm bitumen impregnated softboard movement joints with exposed edges raked out for a depth of 12mm and filled with two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc and including all necessary excavation, formwork, filling, etc	m	260		
19	Extra for angles, intersections, ends, dressing into sides of catchpits, etc	No	8		
	Carried to Collection			R	
	Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 2 Stormwater Drainage KwaZulu Natal Botanical Gardens - Durban				

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 3</u>			
	<u>SEWER DRAINAGE</u>			
	<u>PREAMBLES</u>			
	<u>NOTE:</u> All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>SEWER DRAINAGE</u>			
	<u>Decommissioning of existing sewer line</u>			
1	Decommissioning existing 110mm diameter sewer line	m	170	
	<u>Class 12 uPVC pipe laid in Class B bedding including excavations in pickable materials, backfilling and compacting to 95% Modified AASHTO density and all necessary risk of collapse and dewatering of trenches</u>			
2	50mm Pipes laid in and including trenches not exceeding 1m deep	m	150	
	<u>Class 34 uPVC pipe laid in Class B bedding including excavations in pickable materials, backfilling and compacting to 95% Modified AASHTO density and all necessary risk of collapse and dewatering of trenches</u>			
3	110mm Pipes vertical or ramped to cleaning eye (no excavation)	m	25	
4	110mm Pipes laid in and including trenches not exceeding 1m deep	m	42	
5	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	110	
	Carried to Collection		R	
	Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 3 Sewer Drainage KwaZulu Natal Botanical Gardens - Durban			

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6	110mm Pipes laid in and including trenches exceeding 2m and not exceeding 3m deep	m	71		
7	160mm Pipes vertical or ramped to cleaning eye (no excavation)	m	12		
8	160mm Pipes laid in and including trenches not exceeding 1m deep	m	168		
9	160mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	173		
10	160mm Pipes laid in and including trenches exceeding 2m and not exceeding 3m deep	m	66		
<u>Extra over uPVC sewer and drain pipes for fittings</u>					
11	50mm bend	No	4		
12	50mm junction	No	2		
13	110mm bend	No	18		
14	110mm junction	No	6		
15	160mm junction	No	8		
16	160mm bend	No	7		
<u>uPVC gulleys</u>					
17	Excavate for and construct gulley comprising of 110mm uPVC gulley trap with 190mm dia uPVC hopperhead with pvc grating, all set in mass concrete and not exceeding 500mm deep. The top of the gulley to be raised 75mm above surrounding ground level and internally dished down to hopper head with smoothened render and external of raised sides to be finished neatly.	No	5		
<u>Rodding eyes</u>					
18	110mm cast iron rodding eye set in 300 x 300 x 300mm thick 15MPa/19 unreinforced concrete surround finished smooth on exposed surfaces with round angles	No	9		
Carried to Collection				R	
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 3 Sewer Drainage KwaZulu Natal Botanical Gardens - Durban					

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Manhole, etc

19	Excavate for and build one brickwall manhole set on 100mm thick concrete base, with internal wall plaster finished and bottom of manhole graded to fall to open channels set on concrete base. The external face of the manhole to bagwashed and treated with one coat of bitumen paint size of manhole internally 670 x 1 000mm x exceeding 1 000mm deep. The manhole to have 150mm thick concrete slab with opening to take lid (cover elsewhere).	No	3
20	Excavate for and build one brickwall manhole set on 100mm thick concrete base, with internal wall plaster finished and bottom of manhole graded to fall to open channels set on concrete base. The external face of the manhole to bagwashed and treated with one coat of bitumen paint size of manhole internally 670 x 1 000mm x exceeding 1 000mm and not exceeding 1 500mm deep. The manhole to have 150mm thick concrete slab with opening to take lid (cover elsewhere).	No	10
21	Excavate for and build one brickwall manhole set on 100mm thick concrete base, with internal wall plaster finished and bottom of manhole graded to fall to open channels set on concrete base. The external face of the manhole to bagwashed and treated with one coat of bitumen paint size of manhole internally 1 000 x 1 000 x 850mm high for the top section with 150mm thick reducer slab and lower section of the manhole to be 1 400 x 1 400mm total depth. Total depth of manhole exceeding 2 500mm and not exceeding 3 000mm deep. The manhole to have 150mm thick concrete slab with opening to take lid (elsewhere measured)	No	1
22	Excavate for and build one brickwall manhole set on 100mm thick concrete base, with internal wall plaster finished and bottom of manhole graded to fall to open channels set on concrete base. The external face of the manhole to bagwashed and treated with one coat of bitumen paint size of manhole internally 1 000 x 1 000 x 850mm high for the top section with 150mm thick reducer slab and lower section of the manhole to be 1 400 x 1 400mm total depth. Total depth of manhole exceeding 3 000mm and not exceeding 3 500mm deep. The manhole to have 150mm thick concrete slab with opening to take lid (elsewhere measured)	No	2

Carried to Collection

R

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SECTION 5: EXTERNAL WORKS (PROVISIONAL)
Bill No. 3
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	<u>Gratings, Covers etc</u>				
23	Saint Gobain or equal approved double seal manhole cover and frame (Product No. 2170 Type 8A) size 450 x 600mm	No	13		
	<u>Sundries</u>				
24	Concrete encasing to 110mm horizontal pipes	m	40		
25	350 x 350 x 50mm Precast concrete inspection eye marker slab set in ground	No	4		
26	100mm thick 20Mpa concrete encasement around 110mm PVC pipe	m	10		
27	160mm thick 20Mpa concrete encasement around 160mm PVC pipe	m	12		
28	Break into side of existing manahole, hack up benching, install new branch pipe and re-bench manhole to clean even fall. Depth not exceeding 1 500mm.	No	2		
29	Extra over excavation for Class B bedding and backfill material around pipe as supplied by contractor	m3	12		
30	Extra over excavation for pipe trenches, manhole, etc for carting away surplus material to a dumping site located by the contractor	m3	25		
31	100 mm Cast iron "ABC" cleaning eye, including mortar bedding around	No	4		
32	300 x 300mm x 25kg Cast iron meter box over cleaning eye (cleaning eye elsewhere), including concrete encasing	No	1		
33	25Mpa concrete in marker block overall size 200 x 100 x 1 000mm high with 800mm projecting above ground including all necessary excavation, formwork, etc	No	4		
Carried to Collection					R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 3 Sewer Drainage KwaZulu Natal Botanical Gardens - Durban					

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	No	Item	R
Connections 34 Cut into existing sewer manhole for and connect new sewer line including all necessary fittings, investigations, temporary sealing-off, diverting, excavation, backfilling, making good all works on completion including asphalt, etc Testing 35 Testing soil drainage system			
Carried to Collection			R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 3 Sewer Drainage KwaZulu Natal Botanical Gardens - Durban			

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 4</u>			
	<u>WATER SUPPLIES</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>WATER SUPPLIES</u>			
	<u>Repair to water supply line</u>			
1	Investigate existing water pipe line and trace leaks	m	55	
2	Investigate as necessary to identify location and extent of leaks including excavations, cartaway, backfilling, etc	No	5	
3	Cut into existing pipe not exceeding 32mm diameter to remove damaged portion and reinstate, including testing (cutting into plaster and making good elsewhere measured)	No	3	
	<u>Class 12 HDPE pipe laid on Class B bedding including excavation in packable material, backfilling and compacting to 95% Modified AASHTO density and all necessary risk of collapse and dewatering of trenches</u>			
4	Excavate for and lay 50mm HDPE pipe in ground not exceeding 1 000mm deep	m	234	
	<u>Extra over water pipes for fittings</u>			
5	50mm HDPE to iron straight coupler	No	10	
6	50mm reducer	No	2	
7	50mm elbow	No	12	
	Carried to Collection			R
	Section No. 5			
	SECTION 5: EXTERNAL WORKS (PROVISIONAL)			
	Bill No. 4			
	Water Supplies			
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8	50mm tee	No	7		
9	50mm x 2 flanged adaptor with table D drilling and complete with gasket and bolt set	No	3		
10	50mm bend	No	26		
	<u>Valve chambers, etc</u>				
11	Excavate for and build one brickwall valve box set on 150mm thick concrete, size internally 450 x 600mm x not exceeding 1 000mm deep (cover elsewhere).	No	1		
	<u>Gratings, Covers etc</u>				
12	Saint Gobain or equal approved double seal manhole cover and frame (Product No. 2170 Type 8A) size 450 x 600mm	No	1		
	<u>VALVES AND HYDRANTS</u>				
	<u>Valve and hydrants:</u>				
13	100mm right angle hydrant with instantaneous connection and double temper proof valve including 100mm diameter stand pipe 1 000mm high and 90 degrees bend, bedded in and including 25Mpa concrete block size 300 x 300 x 150mm thick including all necessary excavations, formwork, backfilling, painting, denso tape, etc	No	4		
14	100mm diameter gate valve (RSV) and hand wheel with socket end for uPVC non rising spindle and anti-clockwise closing	No	4		
	<u>Water Meter</u>				
15	100mm Woltmann WP Type Class B or equal approved meter with and including internal piping, valves, fittings, adaptors, base plate, excavation, backfilling, etc installed in strict accordance with the manufacturers instructions	No	1		
Carried to Collection				R	
Section No. 5					
SECTION 5: EXTERNAL WORKS (PROVISIONAL)					
Bill No. 4					
Water Supplies					
KwaZulu Natal Botanical Gardens - Durban					

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 3</u>			
<u>BILL NO. 5</u>			
<u>PAVING TO OPEN AREAS</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Testing of material and filling</u>			
Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series			
<u>Precast concrete block road surfacing</u>			
Paving shall be laid in accordance with SABS 1200 MJ, SANS 1058 and the Concrete Masonry Association's specifications			
Paving shall be laid to herringbone pattern on 20mm thick (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere)			
Clean sand shall be swept into joints between roadstones at completion			
<u>EARTHWORKS</u>			
<u>Open face excavation in earth over sloping site</u>			
1	Open face excavation to form platforms under parking areas, roads, etc and dispose in prescribed stock piles on site	m3	24
Carried to Collection			R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 5 Paving to Open Areas KwaZulu Natal Botanical Gardens - Durban			

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	<u>Extra over all excavations for carting away</u>				
2	Surplus material from stock piles on site to a dumping site to be located by the Contractor	m3	24		
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted as specified</u>				
3	Subbase course of G5 material in 150mm layer, compacted to 93% Mod AASHTO density	m3	12		
4	Base course of C4 material in 150mm layer, compacted to 97% Mod AASHTO density	m3	12		
5	Extra over subbase or base course of natural gravel material for stabilisation with lime (cement) at the rate of 2,5%)	m3	12		
	<u>Compaction of surfaces</u>				
6	Compaction of ground surface under pavings, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	53		
	<u>Additional tests required by the engineer (Refer to Supplementary Preambles for contractor's tests: SABS 1200)</u>				
7	"Modified AASHTO Density" test	No	10		
	<u>Weedkiller (active ingredients metalaclor 102,8 g/l, terbitilasien 248,6 g/l and atrasiem 248,6 g/l) mixed in the proportion of 100 ml weedkiller to 100 l water and applied at a rate of 10 l/mg</u>				
8	Under paving, etc	m2	53		
	<u>Soil insecticide in accordance with SANS 5859</u>				
9	Under paving, etc	m2	53		
	<u>PAVING</u>				
Carried to Collection					R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 5 Paving to Open Areas KwaZulu Natal Botanical Gardens - Durban					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 6</u>			
	<u>RETAINING STRUCTURES</u>			
	<u>PREAMBLES</u>			
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
	<u>REMOVAL OF EXISTING RETAINING STRUCTURES</u>			
	<u>Take out and set aside on site for later re-use</u>			
1	Take out, set aside retaining structure blocks, store on site for later re-use	m2	160	
	<u>EARTHWORKS</u>			
	<u>Open face excavation in earth</u>			
2	To embankments behind retaining blocks including benching into embankments size 1 000 x 2 000mm high extreme in consecutive stages along sloping face of embankments	m3	50	
	<u>Excavation in earth not exceeding 2 000mm deep</u>			
3	Trenches	m3	12	
4	Hard rock	m3	2	
	<u>Extra over all excavations for carting away</u>			
5	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the Contractor	m3	12	
	Carried to Collection		R	
	Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 6 Retaining Structure KwaZulu Natal Botanical Gardens - Durban			

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	<u>Laffelstein or equal approved precast concrete interlocking planter blocks finished smooth on exposed surfaces with stepped face and curves as required to suit slopes of interlocking units laid with horizontal bed joints to 65 degrees slope including filling the units with garden soil slightly tamped as the work proceeds</u>				
15	Take from site retaining wall blocks and lay as above	m2	44		
16	Retaining walls with stepped face and curves as required to suit slopes of interlocking units laid with horizontal bed joints to 65 degrees slope including filling the units with garden soil slightly tamped as the work proceeds	m2	160		
	<u>Concrete, etc</u>				
	<u>25Mpa/19mm reinforced concrete</u>				
17	Strip footings	m3	17		
	<u>REINFORCEMENT</u>				
	<u>High tensile steel reinforcement to structural concrete work</u>				
18	Various diameter bars	t	7.40		
	<u>SUB-SOIL DRAINAGE</u>				
	<u>Perforated HDPE pipes</u>				
19	110mm dia pipes in trenches not exceeding 1000mm deep including excavations, cart away, backfilling, bedding, etc	m	123		
	<u>Extra over 110mm dia for fittings</u>				
20	110mm dia bend.	No	10		
21	110mm dia junction.	No	5		
	<u>Stone filling of 19mm Crushed stone</u>				
22	In sub-soil drain trenches around pipes	m3	80		
Carried to Collection					R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 6 Retaining Structure KwaZulu Natal Botanical Gardens - Durban					

FILTER FABRIC

**"Bidim U24" or equal approved non-woven
continuous filament needle punch polyester filter
fabric blanket with 200mm lapse**

23	On triangular shaped concrete spill basin	m2	246
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Carried to Collection

R

Section No. 5
SECTION 5: EXTERNAL WORKS (PROVISIONAL)
Bill No. 6
Retaining Structure
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Item No	Quantity	Rate	Amount
<u>SECTION NO. 3</u>			
<u>BILL NO. 7</u>			
<u>RAMPS AND SUPPORT WALLS</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>PROTECTION OF EXISTING WORK</u>			
<u>General allowances</u>			
1	Allow for watering the works by spraying to prevent any nuisance from dust, etc and supply, erect and remove at completion all temporary dust screens, etc required	Item	
2	Allow for protecting all existing work liable to suffer damage (ie. walls, finishes, floors, windows, etc) from damage during the building operations, alterations, etc and make good all work damaged with new material to match existing to the approval of the Principal Agent	Item	
<u>REMOVAL OF EXISTING WORK</u>			
<u>Breaking up and removing unreinforced concrete</u>			
3	100mm thick concrete in surface beds	m2	40
<u>Breaking down and removing brickwork etc</u>			
4	One brick walls	m2	60
5	One and half brick walls	m2	20
<u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u>			
Carried to Collection			R
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 7 Ramps and Support Walls KwaZulu Natal Botanical Gardens - Durban			

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	<u>EXCAVATIONS, ETC</u>			
	<u>Excavate in earth not exceeding 2m deep</u>			
6	Open face excavation	m3	208	
	<u>Excavate in earth not exceeding 2m deep</u>			
7	Trenches	m3	140	
	<u>Extra over excavations in earth for excavation in:</u>			
8	Soft rock	m3	43	
9	Hard rock	m3	20	
	<u>Back excavation of vertical sides of excavation in earth for working spaces including backfilling compacted to 98% Mod AASHTO density</u>			
10	Not exceeding 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	224	
11	Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	224	
	<u>Extra over excavations in earth for working space for excavation in soft rock:</u>			
12	Not exceeding 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	110	
13	Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	110	
	<u>Extra over excavations in earth for working space for excavation in hard rock:</u>			
14	Not exceeding 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	30	
	Carried to Collection			R
	Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 7 Ramps and Support Walls KwaZulu Natal Botanical Gardens - Durban			

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15	Exceeding 500mm and not exceeding 1 500mm deep for placing and removing formwork to walls, etc 500mm away from excavated face	m2	20		
	<u>Extra over all excavations for carting away</u>				
16	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	207		
	<u>Risk of collapse of excavations</u>				
17	Sides of trench and hole excavations not exceeding 1,5m deep	m2	468		
	<u>Keeping excavations free of water</u>				
18	Keeping excavations free of all water other than subterranean water		Item		
	<u>FILLING ETC</u>				
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density</u>				
19	Backfilling to trenches, holes, etc	m3	53		
20	Under floors, steps, pavings, etc	m3	22		
	<u>Earth filling supplied by the Contractor, compacted to 98% Mod AASHTO density</u>				
21	Crusher run stone base course material compacted in layers of 150mm thick to 98% MOD AASHTO density	m3	22		
	<u>Earth filling from commercial sources supplied by the Contractor, compacted to 98% Mod AASHTO density</u>				
22	G7 materials in accordance with SABS 1200 ME, compacted to 93% MOD AASHTO density	m3	36		
	<u>Stabilisation</u>				
23	Sub-base material in accordance with SABS 1200 ME, stabilised to attain 3% OPC compacted to 95% Mod AASHTO density.	m3	18		
Carried to Collection				R	
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 7 Ramps and Support Walls KwaZulu Natal Botanical Gardens - Durban					

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<u>Compaction of surfaces</u>				
24	Compaction of ground surface under pavings, aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	73	
<u>Prescribed density tests on filling</u>				
25	"Modified AASHTO Density" test	No	20	
<u>Coarse river sand filling supplied by the contractor</u>				
26	30mm thick sand spread level	m2	73	
<u>SOIL POISONING</u>				
<u>Soil insecticide in accordance with SANS 5859</u>				
27	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	73	
28	To bottoms and sides of trenches, etc	m2	326	
<u>DAMPPROOFING OF WALLS AND FLOORS</u>				
<u>Two coats ABE Brixéal or equal approved bitumen emulsion waterproofing coating</u>				
29	On bagged brick walls	m2	349	
<u>Sika Blackseal or equal approved brick one part, flexible, solvent free polymer modified bitumen emulsion coating to be installed in strict accordance behind retaining walls</u>				
30	Retaining walls	m2	312	
<u>One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)</u>				
31	In walls	m2	63	
Carried to Collection				R
Section No. 5				
SECTION 5: EXTERNAL WORKS (PROVISIONAL)				
Bill No. 7				
Ramps and Support Walls				
KwaZulu Natal Botanical Gardens - Durban				

	<u>One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape</u>				
32	Under surface beds	m2	73		
	<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
	<u>25Mpa/19mm unreinforced concrete</u>				
33	Strip footings	m3	21		
	<u>25Mpa/19mm concrete</u>				
34	In surface beds in panels	m3	25		
	<u>CONCRETE SUNDRIES</u>				
	<u>Finishing top surfaces of concrete smooth with a wood float</u>				
35	Surface beds to falls	m2	169		
	<u>ROUGH FORMWORK</u>				
	<u>Rough formwork to sides</u>				
36	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	22		
	<u>MOVEMENT JOINTS, ETC</u>				
	<u>Expansion joints with 10mm bitumen impregnated softboard expanded polyethylene between vertical concrete and brick surfaces</u>				
37	10mm joints not exceeding 300mm high	m	77		
	<u>Saw cut joints</u>				
38	30 x 5mm saw cut joints on top of concrete	m	50		
	<u>SEALING STRIPS, JOINT SEALANTS, ETC</u>				
Carried to Collection				R	
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 7 Ramps and Support Walls KwaZulu Natal Botanical Gardens - Durban					

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	<u>Polysulphide sealing compound including backing cord, bond breaker, primer, etc or equal approved joint filler</u>				
39	6 x 6mm in vertical expansion joints including raking out expansion joint filler as necessary	m	90		
40	10 x 10mm in vertical isolation joints	m	157		
	<u>REINFORCEMENT</u>				
	<u>Mild tensile steel reinforcement to structural concrete work</u>				
41	Various diameter bars	t	5.10		
	<u>Fabric reinforcement</u>				
42	Type 193 fabric mesh reinforcement in surface beds, etc	m2	169		
	<u>BRICKWORK</u>				
	<u>Corobrik or equal approved 7Mpa nominal compressive strength imperial NFP load bearing perforated plaster brick laid in walls, bedded and jointed in Class II mortar</u>				
43	One brick walls	m2	76		
44	One and half brick walls	m2	80		
	<u>Brickwork of NFX bricks in class I mortar</u>				
45	One brick walls	m2	35		
	<u>BRICKWORK SUNDRIES</u>				
	<u>Bagging of 1:3 cement and sand mixture</u>				
46	On brick surfaces	m2	167		
	<u>2,5mm Brickwork reinforcement</u>				
47	150mm Wide reinforcement built in horizontally	m	1 167		
48	230mm Wide reinforcement built in horizontally	m	1 350		
	Carried to Collection			R	
	Section No. 5				
	SECTION 5: EXTERNAL WORKS (PROVISIONAL)				
	Bill No. 7				
	Ramps and Support Walls				
	KwaZulu Natal Botanical Gardens - Durban				

<u>FACE BRICKWORK</u>					
<u>Corobrik Red Terracota satin FBS or equally approved face brick pointed with flush horizontal and vertical joints in stretcher bond</u>					
49	One brick wall in facings	m2	247		
50	One and half brick wall in facings	m2	242		
51	Extra over brickwork for face brickwork	m2	91		
<u>Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces</u>					
52	220mm Wide sill set sloping and slightly protecting	m	144		
53	345mm Wide sill set sloping and slightly protecting	m	100		
<u>COMPLETION OF CONCRETE WALKWAYS</u>					
<u>Site Clearance</u>					
54	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush and trees not exceeding 200mm girth, etc.	m2	137		
55	Stripping average 100mm thick layer of top soil and stockpiling on site	m2	137		
<u>Open face excavation in earth over sloping site</u>					
56	Reduce levels under floors	m3	63		
<u>Extra over all excavations for carting away</u>					
57	Surplus material from excavations and/stock piles on site to the dumping site to be located by the Contractor.	m3	63		
<u>Earth filling supplied by the contractor under parking areas, roadways, etc</u>					
58	Sub-base course of G5 material in accordance with SABS 1200 DM, compacted to 93% Mod AASHTO density	m3	63		
Carried to Collection				R	
Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 7 Ramps and Support Walls KwaZulu Natal Botanical Gardens - Durban					

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	<u>Coarse river sand filling supplied by the contractor</u>			
59	30mm thick sand spread level	m2	137	
	<u>Compaction of surfaces</u>			
60	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	137	
	<u>Prescribed density tests on filling</u>			
61	"Modified AASHTO Density" test	No	10	
	<u>Soil insecticide in accordance with SANS 5859</u>			
62	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	137	
	<u>One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape</u>			
63	Under surface beds	m2	137	
	<u>SOIL POISONING</u>			
	<u>Soil insecticide in accordance with SANS 5859</u>			
64	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	137	
	<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>			
	<u>25Mpa/19mm concrete</u>			
65	In surface beds in panels	m3	18	
	<u>CONCRETE SUNDRIES</u>			
	Carried to Collection			R
	Section No. 5 SECTION 5: EXTERNAL WORKS (PROVISIONAL) Bill No. 7 Ramps and Support Walls KwaZulu Natal Botanical Gardens - Durban			

	<u>Finishing top surfaces of concrete smooth with a wood float</u>				
66	Slabs to falls	m2	84		
	<u>ROUGH FORMWORK</u>				
	<u>Smooth formwork to sides</u>				
67	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	80		
	<u>MOVEMENT JOINTS, ETC</u>				
	<u>Expansion joints with 10mm bitumen impregnated softboard expanded polyethylene between vertical concrete and brick surfaces</u>				
68	10mm joints not exceeding 300mm high	m	103		
	<u>Saw cut joints</u>				
69	30 x 5mm saw cut joints on top of concrete	m	25		
	<u>SEALING STRIPS, JOINT SEALANTS, ETC</u>				
	<u>Polysulphide sealing compound including backing cord, bond breaker, primer, etc or equal approved joint filler</u>				
70	8 x 13mm in saw cut joints in floors	m	45		
71	10 x 10mm in vertical isolation joints	m	115		
	<u>REINFORCEMENT</u>				
	<u>High tensile steel reinforcement to structural concrete work</u>				
72	Various diameter bars	t	2.00		
	<u>Fabric reinforcement</u>				
73	Type 193 fabric mesh reinforcement in surface beds, etc	m2	84		
Carried to Collection				R	
Section No. 5					
SECTION 5: EXTERNAL WORKS (PROVISIONAL)					
Bill No. 7					
Ramps and Support Walls					
KwaZulu Natal Botanical Gardens - Durban					

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 4</u>			
<u>BILL NO.1</u>			
<u>PROVISIONAL SUMS</u>			
<u>PREAMBLES</u>			
NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill			
<u>SUPPLEMENTARY PREAMBLES</u>			
NOTE: Tenderers are referred to the definition of general attendance on nominated sub-contractors given in Clause 9 of the Preliminaries			
NOTE: Under no circumstances may any Prime Cost - Provisional Amount, etc be extended at an amount lower than the amount given in the Bill			
THE FOLLOWING PROVISIONAL SUMS ARE FOR WORK TO BE EXECUTED BY SELECTED SUBCONTRACTORS The following Provisional Sums are for specialists work to be executed by a selected Sub-contractor who upon appointment in terms of the Conditions of Contract shall be deemed to be a Domestic Sub-Contractor to the Contractor A Selected Sub-Contractor shall be a Sub-contractor executing work for which a sum of money is provided for in the Bills of Quantities or a Sub-contractor executing additional specialist work which arises as a result of an instruction by the Principal Agent/Engineer			
Carried to Collection			
			R
Section No. 6 SECTION 6: PROVISIONAL SUMS Bill No. 1 Provisional Sums KwaZulu Natal Botanical Gardens - Durban			

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Tender documents for such work shall be prepared by the Principal Agent/Engineer in consultation with and to the approval of the Contractor and such tender document shall be issued by the Principal Agent/Engineer to a list of tenderers agreed upon between the Principal Agent/Engineer and Contractor. Tenders shall be submitted to the Principal Agent/Engineer

Tender documents for such work shall be prepared by the Principal Agent/Engineer in consultation with and to the approval of the Contractor and such tender document shall be issued by the Principal Agent/Engineer to a list of tenderers agreed upon between the Principal Agent/Engineer and Contractor. Tenders shall be submitted to the Principal Agent/Engineer

The Selected Sub-contractor shall be chosen by the Principal Agent/Engineer and the Contractor, and the Contractor shall satisfy himself that such selected sub-contractor can meet the requirements of the Sub-Contract agreement and the Contractor shall inform the Principal Agent/Engineer accordingly
The procedure relating to the method of selection, obtaining of tenders, adjudication thereof and the appointment of the Selected Sub-contractor shall not create any contractual relationship between the Client and the Selected Sub-contractor

Landscapping

1	Provide the amount of R200 000.00 (Two Hundred Thousand Rands) for landscaping by specialist	Item	200 000.00
2	Allow for profit on above	Item	
3	Allow for attendance on the above	Item	

Signage

4	Provide the sum of R50 000,00 (Fifty Thousand Rands) for signage and way finding by Specialists	Item	50 000.00
5	Allow for profit on above	Item	
6	Allow for attendance on the above	Item	

Carried to Collection

R

Section No. 6

SECTION 6: PROVISIONAL SUMS

Bill No. 1

Provisional Sums

KwaZulu Natal Botanical Gardens - Durban

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Community Liaison Officer

7	Provide the sum of R54 000,00 (Fifty Four Thousand Rands) for allowance of community liaison officer	Item	54 000.00
8	Allow for profit on above	Item	

Carried to Collection

R

Section No. 6
SECTION 6: PROVISIONAL SUMS
Bill No. 1
Provisional Sums
KwaZulu Natal Botanical Gardens - Durban

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Section No	PAGE NO.	Description	Amount
1	33	SECTION 1: PRELIMINARIES	
2	92	SECTION 2: MEDLEY WOOD HSE, THE BERBARIUM & RESOURCE CENTRE (PROVISIONAL)	
3	157	SECTION 3: UMNDONI BLOCK AND GARAGE (PROVISIONAL)	
4	231	SECTION 4: NEW HERBARIUM OFFICE BLOCK	
5	270	SECTION 5: EXTERNAL WORKS (PROVISIONAL)	
6	274	SECTION 6: PROVISIONAL SUMS	
7	275	SECTION 7: CREDIT FOR MATERIALS ON SITE	
SUB - TOTAL			R
<u>ANNEXURE B: ELECTRICAL INSTALLATION</u>			
Electrical Installation (see separate document - Annexure B) (Value Added Tax Excluded)			Item
<u>ANNEXURE C: MECHANICAL INSTALLATION</u>			
Mechanical Installation (see separate document - Annexure C) (Value Added Tax Excluded)			Item
SUB - TOTAL			R
Provide 10% (TEN PERCENT) on Sub-total (A) as contingency to be deducted in whole or in part if not required			R
SUB TOTAL			R
ADD : VAT @ 15%			R
Carried to Form of Offer and Acceptance			R
KwaZulu Natal Botanical Gardens - Durban			



THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE (SANBI)

APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF NEW OFFICE BUILDINGS AND RENOVATIONS OF VARIOUS BUILDING FOR THE THE KWAZULU NATAL NATIONAL BOTANICAL GARDEN - DURBAN

ANNEXURE B

ELECTRICAL INSTALLATIONS

MARCH 2023

Issued by:

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Name of tenderer:

Address:

Tel no.: Fax no.:

Email:

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
<u>BILL 1: RETICULATION AND DISTRIBUTION BOARDS</u>					
New Distribution Boards					
Distribution board complete with all MCBs, switchgear, accessories, sheet metal frames, sub-frames, busbars, terminals, wiring, conduit terminations, labelling, fixtures and fittings as specified, with all equipment fitted and equipped in factory all strictly as per schematic diagram.					
<i>(Please note that the distribution board's shop drawing should be submitted to the Engineer for approval prior to manufacture).</i>					
DB-Main (Glass House)					
1.1	Supply	No.	1		
1.2	Install	No.	1		
DB-UB (Umndoni Building)					
1.3	Supply	No.	1		
1.4	Install	No.	1		
Low voltage cables					
600/1 000V PVC/PVC/SWA/PVC multi-core copper cable to SANS 1507-3 installed on cable tray, ground and sleeves including all fixings and accessories (cable trays and sleeves measured elsewhere)					
35mm ² 4 Core , ECC					
1.5	Supply	m	100		
1.6	Install	m	100		
25mm ² 4 Core, ECC					
1.7	Supply	m	100		Rate Only
1.8	Install	m	100		Rate Only
10mm ² 4 Core, ECC					
1.9	Supply	m	80		
1.10	Install	m	80		
6mm ² 4 Core, ECC					
1.11	Supply	m	0		Rate Only
1.12	Install	m	0		Rate Only
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Low voltage cable terminations				
	Make off and terminate the LV cable, complete with glands and shrouds including connection of cable to equipment terminals				
	35mm ² 4 Core , ECC				
1.13	Supply	No.	2		
1.14	Install	No.	2		
	25mm ² 4 Core, ECC				
1.15	Supply	No.	0		Rate Only
1.16	Install	No.	0		Rate Only
	10mm ² 4 Core, ECC				
1.17	Supply	No.	4		
1.18	Install	No.	4		
	6mm ² 4 Core, ECC				
1.19	Supply	No.	0		Rate Only
1.20	Install	No.	0		Rate Only
	Sleeves				
	Kabelflex high density (or equal and approved) polyethylene (HDPE) sleeve with double wall construction, corrugated outer wall and smooth inner wall finish inclusive of couplers, bends, etc				
	110mm diameter				
1.21	Supply	m	100		
1.22	Install	m	100		
	50mm diameter				
1.23	Supply	m	260		
1.24	Install	m	260		
	Excavations				
	All excavations, back filling and compaction must be done manually using local labour				
	Excavate for cable and sleeve trench including temporary support of sides, keeping excavations dry, backfilling and compacting to the Engineer's specification				
1.25	Pickable Soil	m ³	80		
1.26	For Soft Rock	m ³	0		Rate Only
1.27	For Hard Rock	m ³	0		Rate Only
1.28	Bedding under and filling around cables comprising sifted sand	m ³	20		
1.29	Remove all waste material	m ³	40		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Cable Tape and Markers				
1.30	PVC warning marking tape	Supply m	180		
1.31		Install m	180		
	Concrete cable route markers complete with properly secured inscription plate				
1.32		Supply No.	6		
1.33		Install No.	6		
	Manholes				
	Internal double-brick manhole complete heavy duty trafficable covers				
	600x600x600mm (Electrical Manhole)				
1.34		Supply No.	2		
1.35		Install No.	2		
	400x400x600mm (Telecommunications Manhole)				
1.36		Supply No.	2		
1.37		Install No.	2		
	Nylon Ski-Rope				
	Nylon ski-rope drawn into sleeves including approximately 300mm slack in boxes, manholes, etc.				
	7mm nylon ski-rope				
1.38		Supply m	360		
1.39		Install m	360		
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
	<u>BILL 2: GLASS HOUSE ELECTRICAL INSTALLATIONS</u>				
	PVC conduits				
	PVC conduit including bending, short lengths, draw boxes, cutting, bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
2.1	Supply	m	900		
2.2	Install	m	900		
	25mm				
2.3	Supply	m	600		
2.4	Install	m	600		
	32mm				
2.5	Supply	m	30		
2.6	Install	m	30		
	25mm PVC-coated Sprague Tubing				
2.7	Supply	m	20		
2.8	Install	m	20		
	PVC round boxes				
	Surface or flush mounted 60mm deep PVC conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
2.9	Supply	No.	150		
2.10	Install	No.	150		
	25mm				
2.11	Supply	No.	100		
2.12	Install	No.	100		
	32mm				
2.13	Supply	No.	5		
2.14	Install	No.	5		
	PVC boxes				
	Surface or flush mounted PVC boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
2.15	Supply	No.	50		
2.16	Install	No.	50		
	100 x 100 x 50mm				
2.17	Supply	No.	24		
2.18	Install	No.	24		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Power skirting				
	Aluminium power skirting, epoxy-coated, complete with separate straight cover plates, end caps, elbows and accessories.				
	2-Compartment 2-Cover				
2.19	Supply	m	60		
2.20	Install	m	60		
	Power trunking				
	Supply and install ceiling mounted single compartment galvanized steel trunking complete with covers, tees, bends, hangers, threaded rods, purlin clamps and all other accessories for a complete installation.				
	41mm wide x 41 mm deep (for lighting circuits, as Cabstrut P2000)				
2.21	Supply	m	140		
2.22	Install	m	140		
	127mm wide x 76 mm deep (for power circuits, as Cabstrut P9000)				
2.23	Supply	m	80		
2.24	Install	m	80		
	Cable Trays				
	Medium Duty Galvanised Cable Trays complete with cantilever hangers or suspension rods complete with all joints, bends, tees, splicing etc as specified on the Drawings				
	150mm wide cable tray				
2.25	Supply	m	20		
2.26	Install	m	20		
	150mm wide wiremesh cable tray				
2.27	Supply	m	80		
2.28	Install	m	80		
	PVC insulated conductors				
	600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	NOTE: All wiring to be run in PVC conduit and no flat twin earth surfix may be used.				
	2.5 mm ²				
2.29	Supply	m	3200		
2.30	Install	m	3200		
	4.0 mm ²				
2.31	Supply	m	2000		
2.32	Install	m	2000		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Insulated copper earth conductors Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc. NOTE: All wiring to be run in PVC conduit and no flat twin earth surfix may be used. 2.5 mm ²				
2.33	Supply	m	2600		
2.34	Install	m	2600		
	Draw wires Draw wire drawn into conduits including approximately 300mm slack in boxes, distribution board, etc. 1.6mm ² Galvanised steel draw wire				
2.35	Supply	m	100		
2.36	Install	m	100		
	Socket outlets Socket outlet complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes, drilling, etc, as Schneider Electric S3000 range or approved equal 16A, 230V, 3-pin and 2-pin Euro modular slimline combination switched socket outlet, wall mounted				
2.37	Supply	No.	10		
2.38	Install	No.	10		
	16A, 230V, 3-pin double switched socket outlet, wall mounted, IP65, weatherproof				
2.39	Supply	No.	1		
2.40	Install	No.	1		
	16A, 230V, 3-pin normal switched outlet with shaved earth pin, mounted on power skirting				
2.41	Supply	No.	26		
2.42	Install	No.	26		
	16A, 230V, 3-pin dedicated switched outlet with shaved earth pin, mounted on power skirting				
2.43	Supply	No.	26		
2.44	Install	No.	26		
	5A, 230V, 3-pin single switched				
2.45	Supply	No.	100		
2.46	Install	No.	100		
	230V, 3-pin single switched television outlet				
2.47	Supply	No.	1		
2.48	Install	No.	1		
	16A, Wireless service outlet point				
2.49	Supply	No.	2		
2.50	Install	No.	2		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Floor Box (FB) 2xSchneider Electric S3000 white 16A 3-pin, 2xRJ45, VGA/DVI/HDMI Ports in floor box with surface box and lid, with relevant conductors(live, neutral, earth etc) and Audio Visual cabling				
2.51	Supply	No.	2		
2.52	Install	No.	2		
	Audio Visual Cluster (AVC) 2xSchneider Electric S3000 white 16A 3-pin, VGA/DVI/HDMI Port mounted in trunking with surrounds and relevant conductors (live, neutral earth etc.) and audio visual cabling				
2.53	Supply	No.	1		
2.54	Install	No.	1		
	Isolators Isolator complete with box, cover plate and accessories, as Schneider Electric S3000 range or approved equal				
	20A DP Single phase isolator, flush mounted				
2.55	Supply	No.	5		
2.56	Install	No.	5		
	20A DP Single phase isolator, surface mounted				
2.57	Supply	No.	5		
2.58	Install	No.	5		
	20A DP Single phase isolator, surface mounted, weatherproof, IP56				
2.59	Supply	No.	10		
2.60	Install	No.	10		
	Light switches Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals, as Schneider Electric S3000 range or approved equal				
	16A, 230V, 1 Lever 1 Way				
2.61	Supply	No.	15		
2.62	Install	No.	15		
	16A, 230V, 1 Lever 2 Way				
2.63	Supply	No.	6		
2.64	Install	No.	6		
	16A, 230V, 2 Lever 1 Way				
2.65	Supply	No.	1		
2.66	Install	No.	1		
	16A, 230V, 2 Lever 2 Way, dimmer				
2.67	Supply	No.	1		
2.68	Install	No.	1		
	16A, 230V, 3 Lever 2 Way, dimmer				
2.69	Supply	No.	1		
2.70	Install	No.	1		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Light fittings				
	SABS approved light fittings as per the specification, complete with lamps, machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings.				
	<i>Please note that all ceiling mounted light fittings shall be delivered with 3m of 1,5mm² flexible cable with a 5 amp 3 pin plug top fitted.</i>				
	Type 1				
2.71	Supply	No.	7		
2.72	Install	No.	7		
	Type 2				
2.73	Supply	No.	2		
2.74	Install	No.	2		
	Type 3				
2.75	Supply	No.	7		
2.76	Install	No.	7		
	Type 4				
2.77	Supply	No.	33		
2.78	Install	No.	33		
	Type 5				
2.79	Supply	No.	17		
2.80	Install	No.	17		
	Type 6				
2.81	Supply	No.	1		
2.82	Install	No.	1		
	Type 7				
2.83	Supply	No.	17		
2.84	Install	No.	17		
	Type 8				
2.85	Supply	No.	13		
2.86	Install	No.	13		
	Type 9				
2.87	Supply	No.	4		
2.88	Install	No.	4		
	Type 10				
2.89	Supply	No.	2		
2.90	Install	No.	2		
	Type EXIT				
2.91	Supply	No.	4		
2.92	Install	No.	4		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
2.93	Photocell Photocell installed in a suitably sized rectangular bulkhead luminaire housing with clear UV stabilised high impact acrylic lens and labelling as specified 16A, 230V, Photocell	Supply	No.	1	
2.94		Install	No.	1	
2.95	Occupancy Sensors Ceiling/concrete slab mounted occupancy sensors for lighting control 10A, 250V, Passive 360° occupancy sensor	Supply	No.	18	
2.96		Install	No.	18	
2.97	Telecommunications distribution board Flush mounted distribution board, lockable, complete with 20mm thick wooden back board 450 x 450 x 150mm deep	Supply	No.	1	
2.98		Install	No.	1	
2.99	Telecommunications outlets Galvanised steel epoxy powder coated cradles and covers mounted on power skirting or wall complete with removable blank inserts. RJ45 socket outlet - Power Skirting Mounted	Supply	No.	46	
2.100		Install	No.	46	
2.101	Hand Dryer Stainless Steel Automatic Hand Dryer as 1400W Exellerator with a motor speed of 20,000rpm and air output temperature of 57 degrees Celsius, or equal and approved	Supply	No.	2	
2.102		Install	No.	2	
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	<u>BILL 3: UMNDONI BUILDING ELECTRICAL</u>				
	PVC conduits				
	PVC conduit including bending, short lengths, draw boxes, cutting, bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
3.1	Supply	m	200		
3.2	Install	m	200		
	25mm				
3.3	Supply	m	300		
3.4	Install	m	300		
	PVC round boxes				
	Surface or flush mounted 60mm deep PVC conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
3.5	Supply	No.	40		
3.6	Install	No.	40		
	25mm				
3.7	Supply	No.	50		
3.8	Install	No.	50		
	PVC boxes				
	Surface or flush mounted PVC boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
3.9	Supply	No.	12		
3.10	Install	No.	12		
	100 x 100 x 50mm				
3.11	Supply	No.	5		
3.12	Install	No.	5		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Power skirting				
	Aluminium power skirting, epoxy-coated, complete with separate straight cover plates, end caps, elbows and accessories.				
	2-Compartment 2-Cover				
3.13	Supply	m	20		
3.14	Install	m	20		
	Power trunking				
	Supply and install ceiling mounted single compartment galvanized steel trunking complete with covers, tees, bends, hangers, threaded rods, purlin clamps and all other accessories for a complete installation.				
	41mm wide x 41 mm deep (for lighting circuits, as Cabstrut P2000)				
3.15	Supply	m	30		
3.16	Install	m	30		
	127mm wide x 76 mm deep (for power circuits, as Cabstrut P9000)				
3.17	Supply	m	30		
3.18	Install	m	30		
	PVC insulated conductors				
	600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	NOTE: All wiring to be run in PVC conduit and no flat twin earth surfix may be used.				
	2.5 mm ²				
3.19	Supply	m	400		
3.20	Install	m	400		
	4.0 mm ²				
3.21	Supply	m	600		
3.22	Install	m	600		
	Insulated copper earth conductors				
	Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	NOTE: All wiring to be run in PVC conduit and no flat twin earth surfix may be used.				
	2.5 mm ²				
3.23	Supply	m	500		
3.24	Install	m	500		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Draw wires				
	Draw wire drawn into conduits including approximately 300mm slack in boxes, distribution board, etc.				
	1.6mm ² Galvanised steel draw wire				
3.25	Supply	m	50		
3.26	Install	m	50		
	Socket outlets				
	Socket outlet complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes, drilling, etc, as Schneider Electric S3000 range or approved equal				
	16A, 230V, 3-pin and 2-pin Euro modular slimline combination switched socket outlet, wall mounted				
3.27	Supply	No.	5		
3.28	Install	No.	5		
	16A, 230V, 3-pin double switched socket outlet, wall mounted, IP65, weatherproof				
3.29	Supply	No.	1		
3.30	Install	No.	1		
	16A, 230V, 3-pin normal switched outlet with shaved earth pin, mounted on power skirting				
3.31	Supply	No.	10		
3.32	Install	No.	10		
	16A, 230V, 3-pin dedicated switched outlet with shaved earth pin, mounted on power skirting				
3.33	Supply	No.	10		
3.34	Install	No.	10		
	5A, 230V, 3-pin single switched				
3.35	Supply	No.	20		
3.36	Install	No.	20		
	230V, 3-pin single switched television outlet				
3.37	Supply	No.	1		
3.38	Install	No.	1		
	16A, Wireless service outlet point				
3.39	Supply	No.	1		
3.40	Install	No.	1		
	Floor Box (FB)				
	2xSchneider Electric S3000 white 16A 3-pin, 2xRJ45, VGA/DVI/HDMI Ports in floor box with surface box and lid, with relevant conductors(live, neutral, earth etc) and Audio Visual cabling				
3.41	Supply	No.	1		
3.42	Install	No.	1		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Audio Visual Cluster (AVC)				
	2xSchneider Electric S3000 white 16A 3-pin, VGA/DVI/HDMI Port mounted in trunking with surrounds and relevant conductors (live, neutral earth etc.) and audio visual cabling				
3.43	Supply	No.	1		
3.44	Install	No.	1		
	Isolators				
	Isolator complete with box, cover plate and accessories, as Schneider Electric S3000 range or approved equal				
	20A DP Single phase isolator, flush mounted				
3.45	Supply	No.	2		
3.46	Install	No.	2		
	20A DP Single phase isolator, surface mounted				
3.47	Supply	No.	2		
3.48	Install	No.	2		
	20A DP Single phase isolator, surface mounted, weatherproof, IP56				
3.49	Supply	No.	2		
3.50	Install	No.	2		
	Light switches				
	Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals, as Schneider Electric S3000 range or approved equal				
	16A, 230V, 1 Lever 1 Way				
3.51	Supply	No.	2		
3.52	Install	No.	2		
	16A, 230V, 1 Lever 2 Way				
3.53	Supply	No.	2		
3.54	Install	No.	2		
	16A, 230V, 2 Lever 1 Way				
3.55	Supply	No.	1		
3.56	Install	No.	1		
	Photocell				
	Photocell installed in a suitably sized rectangular bulkhead luminaire housing with clear UV stabilised high impact acrylic lens and labelling as specified				
	16A, 230V, Photocell				
3.57	Supply	No.	1		
3.58	Install	No.	1		
CARRIED FORWARD					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Occupancy Sensors				
	Ceiling/concrete slab mounted occupancy sensors for lighting control				
	10A, 250V, Passive 360° occupancy sensor				
3.59	Supply	No.	3		
3.60	Install	No.	3		
	Light fittings				
	SABS approved light fittings as per the specification, complete with lamps, machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings.				
	<i>Please note that all ceiling mounted light fittings shall be delivered with 3m of 1,5mm² flexible cabtyre with a 5 amp 3 pin plug top fitted.</i>				
	Type A				
3.61	Supply	No.	3		
3.62	Install	No.	3		
	Type B				
3.63	Supply	No.	9		
3.64	Install	No.	9		
	Type B1				
3.65	Supply	No.	8		
3.66	Install	No.	8		
	Type C1				
3.67	Supply	No.	8		
3.68	Install	No.	8		
	Telecommunications distribution board				
	Flush mounted distribution board, lockable, complete with 20mm thick wooden back board				
	450 x 450 x 150mm deep				
3.69	Supply	No.	1		
3.70	Install	No.	1		
	Telecommunications outlets				
	Galvanised steel epoxy powder coated cradles and covers mounted on power skirting or wall complete with removable blank inserts.				
	RJ45 socket outlet - Power Skirting Mounted				
3.71	Supply	No.	20		
3.72	Install	No.	20		
	Hand Dryer				
	Stainless Steel Automatic Hand Dryer as 1400W Exellerator with a motor speed of 20,000rpm and air output temperature of 57 degrees Celsius, or equal and approved				
3.73	Supply	No.	2		
3.74	Install	No.	2		
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
	<u>BILL 4: ADDITIONAL ITEMS</u>				
	Existing Services on Site				
4.1	Identify existing services on site.	Sum	1		
	Labelling				
4.2	Engraved labels on each switched socket outlet and light switch face plate, glued and screwed.	Item	1		
4.3	Cable marking with Gravoplast at either end below termination shroud	Item	1		
	Testing and commissioning				
4.4	Testing and commissioning of the works covered within this bill.	Item	1		
	Documentation				
4.5	Provision of the As-built drawings for the works covered within this contract showing all cable routes, conduit routes, etc	Item	1		
4.6	Provision of the Operation and Maintenance manuals for the works covered within this bill including conducting User's training	Item	1		
4.7	Provision of the Certificates of Compliance upon completion for the works covered within this bill.	Item	1		
	Infrared Scanning				
4.8	Conduct infra-red scanning of the site at practical completion as specified.	Item	1		
4.9	Conduct infra-red scanning of the site 3 months after hand-over as specified.	Item	1		
	Load Recording				
4.10	Conduct 1 week load recording of the site 3 months after hand-over as specified.	Item	1		
	Guarantee				
4.11	12 month equipment and installation guarantee on the works covered within this bill. The guarantee period commences on the day of successful handing over of the building to the Client.	Item	1		
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
	<u>BILL 5: PROVISIONAL SUMS</u>				
	Power Supply Upgrade				
5.1	Provide the sum of R200 000.00 (Two Hundred Thousand Rands) for the upgrade of the Power Supply, where necessary.	Sum	1		R 200 000.00
	Modification of Distribution Board (DB-M)				
5.2	Provide the sum of R20 000.00 (Twenty Thousand Rands) for the modification of the Medley Wood House low voltage distribution board (DB-M), where necessary.	Sum	1		R 20 000.00
	Earthing and Lightning Protection				
5.3	Allowance for Earthing and Lightning Protection system to be done by a specialist as may be required.	Sum	1		R 80 000.00
	Telephone and Data Network				
5.4	Allowance for Telephone and Data Network system to be done by a specialist as may be required.	Sum	1		R 100 000.00
	Centralised UPS System				
5.5	Allowance for Centralised UPS system to be done by a specialist as may be required.	Sum	1		R 150 000.00
	Photovoltaic Solar Installations				
5.6	Allowance for a 30kWp Hybrid Photovoltaic Solar System (consisting of solar panels, inverters, and lithium batteries) installations to be done by a specialist as may be required.	Sum	1		R 500 000.00
	Existing Buildings Refurbishment				
5.7	Allowance for refurbishments to be done on the existing buildings as may be required.	Sum	1		R 100 000.00
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
	<u>BILL 6: DAY WORKS</u>				
	LANOUR RATES				
	The following nett labour rates shall be applicable where items are not covered by the bills of quantities. They shall be applied to hours worked and they shall include the cost of labour, overheads, profits, all levies, bonusses and leave pay.				
	Normal Time				
6.1	Master Electrician	Hr.	1		Rate Only
6.2	Electrician	Hr.	1		Rate Only
6.3	Apprentice	Hr.	1		Rate Only
6.4	Semi-skilled Worker	Hr.	1		Rate Only
6.5	Labourer	Hr.	1		Rate Only
	Overtime				
6.6	Master Electrician	Hr.	1		Rate Only
6.7	Electrician	Hr.	1		Rate Only
6.8	Apprentice	Hr.	1		Rate Only
6.9	Semi-skilled Worker	Hr.	1		Rate Only
6.10	Labourer	Hr.	1		Rate Only
	MATERIAL : PERCENTAGE MARK-UP				
	The following profit on the nett cost of material shall be applicable where items are not covered by the bills of quantities.				
6.11	Conduit and accessories	%			Rate Only
6.12	Distribution boards	%			Rate Only
6.13	Luminaires	%			Rate Only
6.14	Cables	%			Rate Only
6.15	Items not listed	%			Rate Only
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

KZN DURBAN HERBARIUM ELECTRICAL INSTALLATIONS

ITEM	DESCRIPTION	UNIT	QTY	AMOUNT
	SUMMARY			
7.1	BILL 1: RETICULATION AND DISTRIBUTION BOARDS	Sum	1	
7.2	BILL 2: GLASS HOUSE ELECTRICAL INSTALLATIONS	Sum	1	
7.3	BILL 3: UMNDONI BUILDING ELECTRICAL INSTALLATIONS	Sum	1	
7.4	BILL 4: ADDITIONAL ITEMS	Sum	1	
7.5	BILL 5: PROVISIONAL SUMS	Sum	1	
7.6	BILL 6: DAY WORKS	Sum	1	
7.7	SUB-TOTAL A			
7.8	Add P`s & G`s @ 10%			
TOTAL AMOUNT CARRIED TO FINAL SUMMARY (Excluding VAT)				



THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE (SANBI)

APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF NEW OFFICE BUILDINGS AND RENOVATIONS OF VARIOUS BUILDING FOR THE THE KWAZULU NATAL NATIONAL BOTANICAL GARDEN - DURBAN

ANNEXURE C

MECHANICAL INSTALLATIONS

MARCH 2023

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Email:

ITEM	DESCRIPTION	UNIT	QTY	AMOUNT
	SUMMARY			
1	FIRE INSTALLATION	Sum	1	
2	HVAC	Sum	1	
TOTAL AMOUNT CARRIED TO FINAL SUMMARY (Excluding VAT)				

ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>FIRE PROTECTION INSTALLATION</u>				
	Design, manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, proving to the inspectors, demonstrating to the Employer and maintenance of the complete installation as per conditions of contract and the specification and drawings.				
1	Standard Wall Type Fire Hose Reel to comply with SANS 543 Fire hose reels shall be fitted with a 30m long reinforced red rubber hose of internal diameter of 20mm nominal bore, with a 4.8mm internal diameter chromium plated brass nozzle and isolating valve. Fire hose reel pipes above ground shall be colour coded signal red A11.	No.	6		
2	65 mm outlet fire hydrant with handwheel opening mechanism	No.	1		
3	Fire Brigade Breeching inlet complete with storz suction valve and fittings above and below ground as detailed on the drawing		1		
4	25 mm galvanised mild steel pipe treated with galvafruid paint and two coats of firemen red signal paint A11. Pipework to be complete with supports, bends, unions to make a complete installation	m	15		
5	100 mm class 16 HDPE fire main pipe to be laid in 1000mm underground trench and laid in imported sand bedding and layerworks compacted to the satisfaction of the civil engineer	m	100		
6	50 mm class 12 HDPE fire main pipe to be laid in 600mm underground trench and laid in imported sand bedding and layerworks compacted to the satisfaction of the civil engineer	m	60		
7	4.5 kg Dry Chemical powder fire extinguisher complying with the requirements of SANS 1093 and the extinguishing medium shall comply with the appropriate requirements of SANS 1151. Extinguishers to hung at positions shown on the drawings in the same steel cabinets with fire hose reels	No.	12		
8	2 kg CO2 fire extinguisher complying with the requirements of SANS 1567. Extinguishers to hung at positions shown on the drawings complete with meranti backing board inside the buildings.	No.	3		
9	Fire signage as indicated on the drawings. Marking and signposting shall be of the photoluminescent type complying with the relevant sections of SANS 1186.				
10	Type F49 back to back on 1500mm high gms 80mm dia pole	No.	1		
11	Type F4 in 190mm high aluminium frame	No.	6		
12	Type F5/F6 BACK TO BACK in 190mm high aluminium frame	No.	6		
13	600 x 600 ASSEMBLY POINT FRAMED SIGN on 1800mm high gms 80mm dia pole	No.	1		
14	Type F45-FIRE EXIT/KEEP CLEAR	No.	3		
15	E3 in 190mm high aluminium frame	No.	9		
16	E2/E1 back to back in 190mm high aluminium frame	No.	2		
	Balance carried to forward				

ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Balance brought forward				
17	Fire blankets nominal size 1200 x 1200 in cover with quick release mechanism. Minimum weight 430 gr/m ² , ignition time 13min and Max temp.550°C.	No.	1		
18	Provide 3 no. copies of Operating & Maintenance Manuals hard copy and one electronic format	Item	1		
19	Allow for maintenance during the defects liability period in terms of the contract	Item	1		
20	Testing and Commissioning of the above system installations to the complete satisfaction of the Fire Engineer	Item	1		
Total carried to Summary Page					

Bill of Quantities for the Heating, Ventilation & Air Conditioning

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R c
	<u>Design, manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, proving to the inspectors, demonstrating to the Employer and maintenance of the complete installation as outlined in the specification and on the drawings.</u>				
1	AC-01 midwall split type evaporator and condenser unit complete with no voltage relay and infrared remote controller mounted adjacent the light switches.	No.	3		
2	AC-02 midwall split type evaporator and condenser unit complete with no voltage relay and infrared remote controller mounted adjacent the light switches.	No.	3		
3	AC-03 midwall split type evaporator and condenser unit complete with no voltage relay and infrared remote controller mounted adjacent the light switches.	No.	1		
4	AC-04 midwall split type evaporator and condenser unit complete with no voltage relay and infrared remote controller mounted adjacent the light switches.	No.	2		
5	AC-05 midwall split type evaporator and condenser unit complete with no voltage relay and infrared remote controller mounted adjacent the light switches.	No.	4		
4	AC-06 hideaway split type evaporator and condenser unit complete with discharge and suction plenums, no voltage relay and hard wired remote controller mounted adjacent the light switches.	No.	3		
5	AC-07 midwall split type evaporator and condenser unit complete with no voltage relay and infrared wired remote controller mounted adjacent the light switches.	No.	3		
6	Allow for copper liquid and gas pipes between evaporators and condensers for units AC-01, AC-02, AC-03, AC-04, AC-05 and AC-07.	Item	1		
7	Allow for copper liquid and gas pipes between evaporators and condensers for units AC-06	Item	1		
8	Allow for 20 mm pvc condensate drain from all a/c units complete with fittings as shown on the drawing to terminate above gulley traps or flower pots.	m	100		
9	<u>Fresh air galvanised mild steel including fittings and transformation pieces and supports</u>				
9.1	150 mm x 150 mm	m	50		
9.2	100 x 100 mm supply air grilles SAG-01	No.	8		
9.3	Fresh air fan FAF-01 as per equipment schedule	No.	3		
9.4	200 x 200 mm Fresh air louvre FAL-01 as per equipment schedule	No.	3		
9.5	200 x 200 Fresh air filter FAF-01 complete with 96% efficiency washable filter media and withdrawal handle	No.	3		
	Total carried forward				

Bill of Quantities for the Heating, Ventilation & Air Conditioning

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R c
	Balance brought forward				
9.6	Fresh air fan FAF-02 as per equipment schedule	No.	1		
9.7	300 x 300 mm Fresh air louvre FAL-02 as per equipment schedule	No.	1		
9.8	300 x 300 Fresh air filter FAF-02 complete with 96% efficiency washable filter media and withdrawal handle	No.	1		
10	<u>Supply air insulated(25mm fibre glass with aluminium cover) galvanised mild steel including fittings and transformation pieces and supports</u>				
10.1	400 x 350 insulated duct	m	22		
10.2	200 dia round duct	m	24		
10.3	200mm dia flexible ducts	m	15		
10.4	SAD-01 200 mm dia round diffusers	No.	12		
10.5	RAG-01 1200 x 600 return air eggcrate grille	No.	3		
11	Allow P & G Items associated with HVAC installations	Item	1		
12	Allow for 3 hard copies and one electronic copy of Operating & Maintenance Manuals	Item	1		
13	Testing and Commissioning of the above system installations to the complete satisfaction of the Mechanical Engineer and the client	Item	1		
14	Allow for user training	Item	1		
	Total carried to Summary Page				