

Item No	Quantity	Rate	Amount
<u>SECTION 1</u>			
<u>BILL NO. 1</u>			
<u>PRELIMINARIES</u>			
<u>"PRELIMINARIES FOR INCLUSION IN BILLS OF QUANTITIES AND LUMP SUM DOCUMENTS BASED ON THE JBCC SERIES 2000 DOCUMENTATION"</u>			
<u>NOTES</u>			
<p>i) The agreement is to be the JBCC Series 2000 Principal Building Agreement prepared by the Joint Building Contracts Committee Inc. Edition 4.1 March 2005</p> <p>ii) The JBCC Preliminaries May 2005 edition for use with the JBCC Principal Building Agreement Edition 4.1 March 2005 is taken to be incorporated herein. The tenderer is deemed to have referred to these documents for the full intent and meaning of each clause. These clauses are referred to by number and heading only. Where standard clauses or alternatives are not applicable to the contract such modification or corrections as are necessary are given under each relevant clause</p>			
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iii) No claim whatsoever shall be entertained in respect of errors or omissions in pricing due to brevity of descriptions of items in these Bills of Quantities which are fully described when read in conjunction with the relevant clauses of the said Conditions of Contract, Standard Preliminaries and Preambles

iv) The Tenderer shall allow opposite each of the clause whatever costs and charges he may consider necessary for the carrying out, complying with and due observance of the provisions, conditions and requirements set out herein

Only priced items will be considered in respect of any adjustment of this Section

Any items left unpriced will be understood to be provided free of charge and no claim for any extras arising out of the Tenderer's omission to price any item will be entertained

SECTION A : PRINCIPAL BUILDING AGREEMENT

1	Clause 1: Definitions and interpretations	Item	
2	Clause 2: Offer acceptance and performance	Item	
3	Clause 3: Documents	Item	
4	Clause 4: Design responsibility	Item	
5	Clause 5: Employer's agents	Item	
6	Clause 6: Site representative	Item	
7	Clause 7: Compliance with regulations	Item	
	This clause will be deemed to include all aspects of the Occupational Health and Safety Act		
8	Clause 8: Works risk	Item	
9	Clause 9: Indemnities	Item	

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Tender No: RFP272/2022
Letaba TVET College: Giyani Campus
Construction of Building C & X
Tender Bills of Quantities

10	Clause 10: Works insurances	Item	
11	Clause 11: Liability insurances	Item	
12	Clause 12: Effecting insurance	Item	
13	Clause 13: No Clause	N/A	
14	Clause 14: Security	Item	
15	Clause 15: Preparation for and execution of the works	Item	
16	Clause 16: Access to the works	Item	
17	Clause 17: Contract instructions	Item	
18	Clause 18: Setting out of the works	Item	
19	Clause 19: Assignment	Item	
20	Clause 20: Nominated sub-contractors	Item	
21	Clause 21: Selected sub-contractors	Item	
22	Clause 22: Employer's direct contractors	Item	
	Clause 22.2 shall be amended by the following addition:		
	The Contractor shall within seven days after the site handover date notify the Principal Agent of the required date of appointment of the direct contractors so listed in the schedule		
23	Clause 23: Contractor's domestic sub-contractors	Item	
24	Clause 24: Practical completion	Item	
25	Clause 25: Works completion	Item	
	Clause 25 will be amplified with the addition of the following:		
	Clause 25.6 The period for achieving works completion shall commence on the date of practical completion and end twenty (20) working days from such date		
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26	Clause 26: Final completion	Item	
27	Clause 27: Latent defect liability period	Item	
28	Clause 28: Sectional completion	Item	
29	Clause 29: Revision of date for practical completion Clause 29.1 will be amended with the changes and addition of the following: Clause 29.1.1 Exceptional inclement weather Clause 29.1.7 A direct contractor Clause 29.2 will be amended with the following: Clause 29.2.8 No clause Clause 29.2.10 No clause Clause 29.5 will be amended to read twenty (20) working days.....	Item	
30	Clause 30: Penalty for non completion Clause 30 will be amended with the addition of the following: Clause 30.2 Where the contractor fails to bring the works or sections thereof to works completion on the date or dates stated in clause 25.6 or revision thereof in terms of 24.8 and 29.0, the contractor shall be liable to the employer for the penalty per calender day for noncompletion of the works or each section thereof at the same rate as stated in the schedule for practical completion. The Principal agent shall calculate the penalty due from the date or revised date in terms of 29.0 up to and including the actual date of works completion of the works or section thereof or cancellation in terms of 36.3 Clause 30.3 Where the employer levies such penalties the principal agent shall detail the amount for recovery in terms of 33.1.1	Item	
31	Clause 31: Interim payment to the contractor	Item	
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42	<p>Clause 42: Pre-Tender Information</p> <p>Clause 42.1 CONTRACTING AND OTHER PARTIES</p> <p>42.1.1 Employer: Development Bank of Southern Africa</p> <p>Postal Address: 1258 Lever Road Midrand, Johannesburg Gauteng 1685</p> <p>Tel: 011 313 3911 Fax: TBC</p> <p>Domicilium: 1258 Lever Road Midrand, Johannesburg Gauteng 1685</p> <p>42.1.2 Principal Agent:</p> <p><u>Postal Address:</u></p> <p><u>Tel:</u></p> <p><u>Fax:</u></p> <p>42.1.3 Architect:</p> <p><u>Postal Address:</u></p> <p><u>Tel:</u></p> <p><u>Fax:</u></p> <p>Section No. 1 Bill No. 1</p>	Item			
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42.1.4
Quantity Surveyor:

Postal Address:

Tel:

Fax:

42.1.5
Civil & Structural Engineer:

Postal Address:

Tel:

Fax:

42.1.6
Electrical and Electronical Engineers:

Postal Address:

Tel:

Fax:

42.1.7
Mechanical Engineers:

Postal Address:

Tel:

Fax:

42.1.8
Landscape Architects:

Postal Address:

Tel:

Fax:

Clause 42.2
CONTRACT DETAILS

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	42.2.9 The law applicable to this agreement shall be that of the Republic of South Africa			
	Clause 42.3 INSURANCES			
44	42.3.1 Contract works insurance to be effected by Contractor For the amount of	Item		
	42.3.2 Supplementary insurance:			
45	42.3.3 Public Liability insurance to be effected by: For the amount of With a deductible of	Item		
	42.3.4 Support insurance is not required			
	42.4 DOCUMENTS			
	42.4.1 Waiver of contractor's lien or right of continuing possession is required			
	42.4.2 Construction documents copies to be supplied to the contractor free of charge :			
	42.4.3 Bills of quantities drawn up in accordance with : Standard systems, Sixth Edition (Revised)			
	42.4.4 Submission of priced Bills of Quantities : 5 working days			
46	42.4.5 JBCC Engineering General Conditions	N/A		
47	42.4.6 Contract value is not to be adjusted Tenderers are to allow for price fluctuations in their tender	Item		
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42.4.7
Changes made to the provisions of JBCC.
Tenderers are referred to the specific clauses and items
for changes made

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64	Clause 3.10: Articles of value	Item	
65	Clause 3.11: Inspection of adjoining properties	Item	
	<u>Management of contract</u>		
66	Clause 4.1: Management of the works	Item	
67	Clause 4.2: Programming of the works	Item	
	<p>Clause 4.2 is amended by the addition of the following: -</p> <p>The contractor will be responsible to submit a detailed construction programme written 7 days of site handover. This programme should be compiled based on the critical path method of programming and the critical activities are to be clearly highlighted</p>		
68	Clause 4.3: Progress meetings	Item	
69	Clause 4.4: Technical meetings	Item	
70	Clause 4.5: Labour and plant records	Item	
	<u>Samples and shop drawings</u>		
71	Clause 5.1: Samples of materials	Item	
72	Clause 5.2: Workmanship samples	Item	
73	Clause 5.3: Shop drawings	Item	
74	Clause 5.4: Compliance with manufacturer's instructions	Item	
	<u>Temporary works and plant</u>		
75	Clause 6.1: Deposits and fees	Item	
76	Clause 6.2: Enclosure of works	Item	
77	<p>Clause 6.2 shall be amended by the following addition: The contractor to ensure that the site will be enclosed at all times. The enclosure has to be of such extent that the neighboring sites and properties are secure for the entire duration of the project.</p>	Item	
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78	Clause 6.3: Advertising	Item	
79	Clause 6.4: Plant, equipment, sheds and offices	Item	
80	Clause 6.5: Main notice board	Item	
81	Clause 6.6: Sub-contractors' noticeboard	Item	
	<u>Temporary services</u>		
82	Clause 7.1: Location	Item	
83	Clause 7.2: Water	Item	
	Alternative C shall apply		
84	Clause 7.3: Electricity	Item	
	Alternative C shall apply		
85	Clause 7.4: Telecommunication	Item	
86	Clause 7.5: Ablution facilities	Item	
	Alternative A shall apply		
	<u>Prime cost amounts</u>		
87	Clause 8.1: Responsibility for prime cost amounts	Item	
	<u>Attendance on n/s subcontractors</u>		
88	Clause 9.1: General attendance	Item	
89	Clause 9.2: Special attendance	N/A	
90	Clause 9.3: Commissioning - fuel, water and power	Item	
	<u>Financial aspects</u>		
91	Clause 10.1: Statutory taxes duties and levies	Item	
92	Clause 10.2: Payment of preliminaries	Item	
93	Clause 10.3: Adjustment of preliminaries	Item	
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94	Clause 10.4: Payment certificate cash flow	Item	
	<u>General</u>		
95	Clause 11.1: Protection of the work	Item	
96	Clause 11.2: Protection/isolation of existing/sectionally occupied works	Item	
97	Clause 11.3: Security of the works	Item	
98	Clause 11.4: Notice before covering work	Item	
99	Clause 11.5: Disturbance	Item	
100	Clause 11.6: Environmental disturbance	Item	
101	Clause 11.7: Works cleaning and clearing	Item	
102	Clause 11.8: Vermin	Item	
103	Clause 11.9: Overhand work	Item	
104	Clause 11.10: Instruction manuals and guarantees	Item	
105	Clause 11.11: As built information	Item	
106	Clause 11.12: Tenant installations	Item	
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134	<p>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 doing the work and shall deliver same to the principal agent on the final completion of the contract</p> <p>The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of practical completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice to do so</p> <p>The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor</p> <p>F:..... V:..... T:.....</p>				Item
135	As built drawings				Item
136	<p>Overtime</p> <p>Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the employer</p> <p>F:..... V:..... T:.....</p>				Item
137	<p>Co-operation of the contractor for cost management</p> <p>It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the contract value does not exceed the budget</p> <p>F:..... V:..... T:.....</p>				Item
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>Section No. 1 Bill No. 1</p> </div> <div style="width: 35%; text-align: right;"> <p>R</p> </div> </div>					

138	<p>Overloading</p> <p>The contractor shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the works or temporary works e.g. scaffolding, etc. The contractor shall submit details of his proposed loading, storage, plant erection, etc. to the principal agent for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the principal agent's requirements in connection with the provision of temporary support work, etc. Any damage caused to the works by overloading shall be made good by the contractor at his sole expense</p> <p>F:..... V:..... T:.....</p>	Item	
139	<p>Propping of floors below</p> <p>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</p> <p>F:..... V:..... T:.....</p>	Item	
140	<p>Testing of flat roof waterproofing for water tightness</p> <p>Flat roof waterproof areas shall be prepared with small sand dykes around them of a size and enclosing an area approved by the principal agent, flooded with water and kept "ponded" for at least forty (40) hours as a test to ensure the water tightness of the waterproofing and before any further construction work is carried out above the waterproofing</p> <p>F:..... V:..... T:.....</p>	Item	
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141	<p>Broad based black economic empowerment (BBBEE)</p> <p>Tenders submitted will be evaluated taking into account their empowerment rating</p> <p>The employer will be monitoring the broad based black economic empowerment (BBBEE) status of the contractor throughout the execution of the works</p> <p>The contractor is to submit to the principal agent on an monthly basis a schedule of spend, split into vendors engaged as subcontractors and suppliers indicating their BBBEE rating including proof of the said rating</p> <p>F:..... V:..... T:.....</p>	Item			
142	<p>Advertising rights</p> <p>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. Position and type of advertising structure to be agreed with the principal agent so as not to hinder the contractor in meeting the obligations under this agreement</p> <p>F:..... V:..... T:.....</p>	Item			
143	<p>Confidentiality</p> <p>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.</p> <p>No information regarding this project shall be published or disclosed without the prior written consent of the employer</p> <p>F:..... V:..... T:.....</p>	Item			
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144	<p>Specific Goal Participation</p> <p>Tenderers should note that this project is subject to the maximum utilization of women, youth and disabled and preference will be given as such and also monitored during the construction stage. Details of the Specific Goal Participation</p> <p>Details of the tenderer's proposals in this regard is to be provided before commencement of the works and data forms to be completed by the contractor</p> <p>F:..... V:..... T:.....</p>	Item		
145	<p>Non Accredited Training</p> <p>Tenderers are to note that non accredited training (i.e. on site training) is to be provided during the construction period.</p> <p>F:..... V:..... T:.....</p>	Item		
146	<p>Site Instructions</p> <p>Site instructions issued on site are to be recorded in triplicate in a site instruction book which is to be maintained on site by the contractor</p> <p>F:..... V:..... T:.....</p>	Item		
147	<p>Labour Record</p> <p>At the end of each week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all subcontractors on the works each day.</p> <p>F:..... V:..... T:.....</p>	Item		
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Plant Record

At the end of each week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.

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

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149 **Occupational Health and Safety Act - Section 37(2)**

F:..... V:..... T:..... attention is drawn to the fact that the Occupational Health and Safety Act (Act 85 of 1993) is in force. Copies of the Act are available from the Government Printing Works, 149 Bosman Street, Pretoria (Private Bag X85, Pretoria, 0001, Tel No. (012) 334-4500).

Tenderers are expected to be fully acquainted with the requirements of the Act.

A pro-forma "Agreement in terms of the Occupational Health and Safety Act - Part C 1.4" is included in these bid documents. Tenderers are advised to study this pro-forma in order to make themselves fully conversant with the requirements and responsibilities of the Act and the Municipality.

Tenderers are to provide for the above-mentioned requirements and to allow for all cost implications regarding the above including risk assessment, safety plan and monitoring system for the duration of the contract.

NB: Tenderers are advised to pay close attention to the specific health and safety provisions as delineated by the health and safety consultant as these may have cost implications. The employer shall henceforth deem the price or cost associated with such provisions included in the tenderer's offer.

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

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150 Community Employment and SMME Involvement

The building and related projects of the EMM shall be labour intensive and shall promote community employment in the execution of the contract resulting from this tender. Furthermore, it shall contribute to the development of SME's (Small and Medium Enterprises) especially from previously disadvantaged communities

Local labour

It is an explicit condition of this contract that only persons normally resident in the locality of the works (Local labour) may be employed on the contract. Provided however, that should adequate and appropriate labour not be available within the locality, other labour may be employed, subject to the approval of the Representative/Agent and satisfactory proof being provided that every reasonable endeavour has been made, to employ labour from the immediate locality. The contractors shall identify the local community leaders, with the purpose of negotiating with them, regarding the utilisation of local labour in the construction process. In this regard, the Contractor shall furthermore give preference, where possible, to the employment of single heads of households, women, youth and disabled persons. The Contractor shall in general, maximize the involvement of the local community

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

SECTION D : HEALTH AND SAFETY REQUIREMENTS FOR ALL TENDER BILL OF QUANTITIES

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND THE CONSTRUCTION REGULATION, 2014

151 Prepare and compile H&S plan as per site specification Health and safety specifications (section C3, scope of works). OHS Act & regulations

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

Item

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152 Allow for the preparation and compilation of the site specific health and safety file, and a health and safety working file

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

Item

153 Changes and amendments as may be required for ongoing maintenance of health and safety file and working file

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

Item

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154 **Occupational Health and Safety Act - Section 37(2)**

F:..... V:..... T:..... attention is drawn to the fact that the Occupational Health and Safety Act (Act 85 of 1993) is in force. Copies of the Act are available from the Government Printing Works, 149 Bosman Street, Pretoria (Private Bag X85, Pretoria, 0001, Tel No. (012) 334-4500).

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Tenderers are to provide for the above-mentioned requirements and to allow for all cost implications regarding the above including risk assessment, safety plan and monitoring system for the duration of the contract.

NB: Tenderers are advised to pay close attention to the specific health and safety provisions as delineated by the health and safety consultant as these may have cost implications. The employer shall henceforth deem the price or cost associated with such provisions included in the tenderer's offer.

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

**PART B OHS ACT COMPLIANCE -
 IMPLEMENTATION OF THE HEALTH AND
 SAFETY**

Section No. 1
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Personal Protective Clothing & Equipment

155 Foot protection (steel toe cap, gum boots etc.)

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

Item

156 Clothing (Overalls Depicting Contractors Company name/identification)

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

Item

157 Glove (leather, PVC, Acid resistant etc.)

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

Item

158 Head Protection: Hard hats, colour coded - Supervisory (Red) Labour (Green) First Aid (Blue) Sun Shields etc.

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

Item

159 Ear Protection earplugs, earmuffs, etc.)

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

Item

160 Eye Protection (Face Shield, Goggles, Spectacles etc.)

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

Item

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161	Air (Dust Masks etc.) F:..... V:..... T:.....	Item		
162	Visibility (luminous high visibility safety vest/jackets/bibs/head gear etc.) F:..... V:..... T:.....	Item		
163	Fall Risk/ Fall pProtection/ Working at Heights This only required when work is 2m or more in height F:..... V:..... T:.....	Item		
164	Harness/double lanyard, retractable, reach etc.) F:..... V:..... T:.....	Item		
165	Fall Protection and Recovery Plan (and recovery, gear) F:..... V:..... T:.....	Item		
166	Portable ladders, OA frame, extendable, length, material etc. F:..... V:..... T:.....	Item		
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167	Barricading/ Hoarding (Supply, Install & Removal)			
	F:..... V:..... T:.....	Item		
168	Construction perimeter (fence, shade netting, corrugated iron, shutter board, hard barricade etc.)			
	F:..... V:..... T:.....	Item		
169	Trench and Manhole Excavation	Item		
170	Roads and roads reserves - Pre warning (danger tape, orange "shark" netting, cones, temporary road signs, etc.)			
	F:..... V:..... T:.....	Item		
	<u>Health and Safety Control and Training</u>			
171	Provide full time competent construction health and safety on site to assist in the control of all health and safety aspects on site (CRB(5))			
	F:..... V:..... T:.....	Item		
172	Induction training (employees, visitors, sub-contractors, local residence/ home owners)			
	F:..... V:..... T:.....	Item		
173	Medical Examination	Item		
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174	Medical treatments F:..... V:..... T:.....	Item		
175	Entry Medical Examination F:..... V:..... T:.....	Item		
176	Periodical (if contract more than 8 months) Medical Examination F:..... V:..... T:.....	Item		
177	Exist Medical Examination F:..... V:..... T:.....	Item		
178	Signage, Information Display, Awareness	Item		
179	Construction (fire fighting, general information, prohibitory, mandatory, warning, hazchem, photo luminescent, etc.) F:..... V:..... T:.....	Item		
180	Roads (temporary, traffic control, associated with construction work within the road reserve, etc.) F:..... V:..... T:.....	Item		
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181	Health and Safety information display board in site office (emergency evacuation flow diagram, emergency contract numbers, electrical, general, etc. F:..... V:..... T:.....	Item			
182	Construction Vehicle, Mobile Plant and Roads	Item			
183	Equipment (stop blocs, traffic flags) F:..... V:..... T:.....	Item			
184	Rotating/strobe lights for construction vehicle and mobile plant F:..... V:..... T:.....	Item			
185	Facilities (wash bay, fuel bay, service bay) F:..... V:..... T:.....	Item			
186	Fire Fighting Emergencies	Item			
187	Fire fighting equipment (fire extinguishers - dry powder, for all construction vehicle, site vehicle, site office and on site) F:..... V:..... T:.....	Item			
188	Alarm signalling device (hooter/ blow horn/ siren/ bell/ whistle etc.) F:..... V:..... T:.....	Item			
189	Emergenoles	Item			
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190	First aid treatment box (and refills, stretcher, medical waste drop box, etc. F:..... V:..... T:.....	Item		
191	Substance abuse testing (breathalyser, etc. F:..... V:..... T:.....	Item		
192	Facilities	Item		
193	Ablution (chemical/mobile) F:..... V:..... T:.....	Item		
194	Change house and lockers F:..... V:..... T:.....	Item		
195	Shelter eating facility (Table, chairs, portable water) F:..... V:..... T:.....	Item		
196	Site office/space for health and safety personnel (table, chair) F:..... V:..... T:.....	Item		
197	Security/ access control point (gate, gate keeper, guard house, etc.) F:..... V:..... T:.....	Item		
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198	HCS storage facilities (bound walls, cage, etc) F:..... V:..... T:.....	Item		
199	HIV AIDS AWARENESS	Item		
200	Compliance with the requirement of the HIV and AIDS specification F:..... V:..... T:.....	Item		
<u>COMPLIANCE WITH COVID-19 HEALTH AND SAFETY REGULATIONS</u>				
201	Compliance with the requirement of the COVID-19 regulations F:..... V:..... T:.....	Item		
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Carried to Final Summary

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Item No		Quantity	Rate	Amount
	<u>SECTION NO 2: BUILDERS WORK</u>			
	<u>BILL NO 1</u>			
	<u>EARTHWORKS</u>			
	<u>PREAMBLES</u>			
	The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Nature of ground</u>			
	The nature of the ground is assumed to be soft to hard shale, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"			
	<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 and carted away to a dump site identified by the contractor as no additional money would be approved for distances unknown			
	<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 multiple handling of material			
	<u>EXCAVATIONS</u>			
	<u>Excavation in earth not exceeding 2m deep</u>			
1	Trenches	m3	512	
2	Bases	m3	144	
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3	Reduced levels under floors	m3	965
	<u>Extra over trench and hole excavations in earth for excavation in</u>		
4	Soft rock	m3	51
5	Hard rock	m3	152
	<u>Extra over all excavations for carting away</u>		
6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	334
	<u>Risk of collapse of excavations</u>		
7	Sides of trench and hole excavations not exceeding 1,5m deep below natural ground level	m2	1,338
	<u>Keeping excavations free of water</u>		
8	Keep excavations free of water		Item
	<u>FILLING ETC</u>		
	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density</u>		
9	Backfilling to trenches, holes, etc	m3	283
	<u>Earth filling supplied by the contractor, compacted to 95% Mod AASHTO density</u>		
10	Contractor to supply two layers of G7 material compacted to 95% MOD AASHTO on two layers of selected insitu material, etc.	m3	241
	<u>Earth filling supplied by the contractor, compacted to 95% Mod AASHTO density</u>		
11	Contractor to supply two layers of G5 material compacted to 95% MOD AASHTO on two layers of selected insitu material, etc.	m3	483

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<u>Compaction of surfaces</u>		
12	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 2,120
<u>Prescribed density test on filling</u>		
13	"Modified AASHTO Density test"	No 145
<u>SOIL POISONING</u>		
<u>Soil insecticide</u>		
14	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2 1,609
15	To bottoms and sides of trenches etc	m2 1,850
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BUILDERS WORK

Bill No. 1

Earthworks

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	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 2</u></p> <p><u>CONCRETE, FORM WORK AND REINFORCEMENT</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Cost of tests</u></p> <p>The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the architect. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the architect. (Test cubes are measured separately)</p> <p><u>Form work</u></p> <p>Description of form work 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</p> <p>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</p> <p>Form works to soffits of solid slabs etc shall be deemed to be slabs not exceeding 250mm thick unless otherwise described</p>			
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Form work 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

Form work to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Form work 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"

UN-REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

15MPa/19mm concrete

16	50mm Surface blinding under footings and bases	m3	26	
17	Concrete fillet against up stand beams	m3	107	

REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

25MPa/19mm concrete

18	Bases	m3	37	
19	Columns	m3	9	
20	Strip footings	m3	131	

REINFORCED CONCRETE

30MPa/19mm concrete

21	Surface beds	m3	161	
22	Slabs, including beams and inverted beams	m3	214	
23	Stairs, including landings, beams and inverted beams	m3	2	

40MPa/19mm concrete

24	Walls	m3	28	
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<u>TEST CUBES</u>				
25	Making and testing 150 x 150 x 150mm (set of 3 cubes) concrete strength test cubes (Provisional)	No	122	
<u>CONCRETE SUNDRIES</u>				
<u>Finishing top surfaces of concrete smooth with a wood float/ steel trowel</u>				
26	Surface beds, slabs, etc	m2	2,294	
<u>FORMWORK</u>				
<u>ROUGH FORMWORK</u>				
<u>Rough formwork to sides</u>				
27	Sides of lift shaft exceeding 3.5m but not exceeding 5m high	m2	205	
<u>SMOOTH FORMWORK (DEGREE OF ACCURACY 1)</u>				
<u>Smooth formwork to sides</u>				
28	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	466	
29	Rectangular columns not exceeding 3.5m high	m2	88	
<u>Smooth formwork to sides and soffits</u>				
30	Slabs propped exceeding 1.5m not exceeding 3.5m high	m2	686	
31	Sloping soffits of slabs propped exceeding 1.5m and not exceeding 3.5m high	m2	17	
32	Wall beams	m2	400	
<u>SUNDRIES</u>				
<u>Precast concrete Full bores including steel cover</u>				
33	100mm wide full bore cast into concrete roofs	No	8	
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MOVEMENT JOINTS ETC

Expansion joints

34	10mm Deep expansion joints between brick walls and concrete surfaces including 9 x 10mm high dove grey PVC movement joint fixed to floors with an approved adhesive	m	1,180	
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Isolation joints

35	6 x 10mm Isolation joints in top of concrete including 76mm wide aluminium medium duty structural floor joint cover, with butyl rubber strips, fixed in floor joints with five steel springs clips per 3m length	m	1,684	
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REINFORCEMENT

Steel reinforcement to structural concrete work

36	All reinforcement in varying diameters as per Engineer's schedules	t	60.98	
37	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	2,294	

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 BUILDERS WORK
 Bill No. 2
 Concrete, Formwork & Reinforcement

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	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 3</u></p> <p><u>MASONRY</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Sizes in descriptions</u></p> <p>Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick</p> <p><u>Linings to concrete</u></p> <p>Descriptions of linings to concrete, unless otherwise described, shall be deemed to include wire ties</p> <p><u>Hollow walls, etc</u></p> <p>Descriptions of hollow walls shall be deemed to include wire ties and leaving every fifth perpend of the bottom course of the external skin open as a weep hole</p> <p><u>Reinforced brick lintels</u></p> <p>Lintels shall bear at least 160mm onto adjacent walling. Where such bearing cannot be obtained due to the proximity of adjacent openings the lintel shall be continuous</p> <p><u>Face bricks</u></p> <p>Bricks shall be ordered timeously to obtain uniformity in size and colour</p>			
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<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</u>			
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class I mortar</u>			
38	One brick wall	m2	189
39	Cavity brick wall	m2	469
<u>SUPERSTRUCTURE</u>			
<u>Brickwork of NFP bricks (14 MPa nominal compressive strength) in class I mortar</u>			
40	Half brick walls	m2	183
41	One brick walls	m2	1,161
42	Cavity brick wall	m2	2,376
<u>FACE BRICKWORK</u>			
<u>"Corobrick Eston 20-30MPa burnt sienna imperial FBS clay face bricks pointed with recessed horizontal and flush vertical joints in Class 2 mortar.</u>			
43	Extra over brickwork for face brickwork	m2	1,649
44	Extra over brickwork for brick-on-edge header course window sill	m	3,715
45	Extra over brickwork for brick-on-edge lintel	m	212
<u>BRICKWORK SUNDRIES</u>			
<u>Brickwork reinforcement</u>			
46	75mm Wide reinforcement built in horizontally	m	1,077
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47	150mm Wide reinforcement built in horizontally	m	22,667	
	<u>"Allied Concrete " prestressed fabricated lintels</u>			
48	110 x 70mm Lintels in lengths not exceeding 3m	m	212	

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BUILDERS WORK

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Masonry

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4mm Thick modified bitumen waterproofing membrane laid on screeds (screeds elsewhere), per architect's specification

52

On flats roofs, including upstand beams

m2

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 BUILDERS WORK
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 Waterproofing
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	<u>SECTION NO 2: BUILDERS WORK</u>			
	<u>BILL NO 5</u>			
	<u>ROOF COVERINGS ETC</u>			
	<u>PREAMBLES</u>			
	The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Straight cutting</u>			
	Descriptions of all roof coverings are deemed to include for all straight cutting			
	<u>PROFILED METAL SHEETING AND ACCESSORIES</u>			
	<u>klip-tite 700mm profile roll formed in continuous lengths from chromadek 0,58mm ISQ 550 fixed to 150x50mm steel purlins using KL 700 clips and class 3 fastners, on 255x150mm GMS I-beam in strict accordance with manufacturer's specifications by a GRS Approved contractor</u>			
53	Roof covering not exceeding 25 degrees (Measured flat on plan)	m2	2,160	
	<u>SHEET METAL FLASHINGS, LININGS, COPINGS, ETC</u>			
	<u>0.50mm Thick :Global Roofing Solutions" or similar approved Z200 "Spelter" galvanised steel sheeting (dark dolphin) top coated finish on one side and (pebble grey) backing coated finish, including necessary accessories fixed to purlins</u>			
54	Ridge capping 600mm girth	m	137	
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55	Hip flashing 600mm girth	m	181
56	Counter flashing 150mm girth	m	57
57	Headwall flashing 305mm girth	m	57
<u>ROOF AND WALL INSULATION</u>			
<u>4mm "Alububble" or similar approved aluminium foil (colour: black), fixed to steel purlins</u>			
58	100mm Thick insulation laid out taut over purlins (at approximately 1.1m centres) and fixed concurrent with roof covering, including white plastic coated straining wires at 300mm centres and flap joints	m2	2,160
<u>EAVES , VERGES ,ETC</u>			
<u>Medium density ungrooved fibre cement fascia boards, including fixing to timber rafters, twice screwed with 12 x 40mm countersunk brass screws and PVC H- profile fascia board joiners between boards and PVC H- profile corner joiners at board ends</u>			
59	225 x 12mm Fascias	m	444
<u>Moulded fibre cement barge boards including fixing to 38 x 38mm trimmer battens, twice screwed with 12 x 40mm countersunk brass screws and PVC H- profile barge board joiners between boards and at roof apex</u>			
60	275 x 80mm Barge boards	m	26

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BUILDERS WORK

Bill No. 5

Roof Coverings, etc.

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	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 6</u></p> <p><u>CARPENTRY AND JOINERY</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Particle board:</u></p> <p>Particle board shall comply with the following specifications:</p> <p>a) SABS 1300 Particle board: exterior and flooring type</p> <p>b) SABS 1301 Particle board: interior type</p> <p><u>Joinery:</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc</p> <p>Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes</p> <p><u>Fixing</u></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete. All fixings to be HDG</p> <p><u>Decorative laminate finish:</u></p> <p>Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish</p>			
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Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc. Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes. Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete. Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish

SOLID CORE FLUSH DOORS

44mm Thick supawood semi-solid core panel door with marine plywood veneer on both sides prepared for painting (painting measured elsewhere)

61	992 x 2154mm High single doors (TC6/D06)	No	4
62	1200 x 2056mm High double doors (TC3/D03)	No	4
<u>44mm Thick supawood solid core panel door with marine plywood veneer on both sides prepared for painting (painting measured elsewhere)</u>			
63	850 x 2056mm High single doors with 100mm undercut (TC5); (TX4)	No	6
64	900 x 2056mm High single doors, including 400 x 300mm high cutting for louvre opening (louvre measured elsewhere) (TX2)	No	2
65	901 x 2100mm High single doors (TX5)	No	4
66	901 x 2056mm High single doors, including 400 x 300mm high cutting for louvre opening (louvre measured elsewhere) (TX2)	No	13
67	965 x 2210mm High single doors including 300 x 400mm high cutting for louvre opening (louvre measured elsewhere) (TC4/D04)	No	9
68	994 x 2152mm High single doors (TX7)	No	2
69	1800 x 2056mm High double doors (TX2)	No	8
70	1800 x 2346mm High double doors (TC1)	No	15

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 Bill No. 6

COUNTER TOPS

"RUDI'S CHOICE" or similar approved granite counter tops

71 28mm Thick x 600mm wide granite top with 2-3mm bevel on surface edge (colour: Crema Rosita). Granite surface to be sealed using an approved stone sealer all in accordance with manufacturers specifications.

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BUILDERS WORK

Bill No. 6

Carpentry and Joinery

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	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 7</u></p> <p><u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>NOTE :</u></p> <p>Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.129 for CPAP formula purposes</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Descriptions:</u></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete. All fixings to be HDG</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere</p> <p><u>Coved cornices</u></p> <p>Gypsum plasterboard coved cornices shall be scribed at internal angles and mitred at external angles. Cornices shall be nailed through ceiling boards to bracking and walls with 2mm diameter galvanised or cadmium plated clout headed nails at 300mm centres or fixed to walls with hardened steel nails.</p>			
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	<u>Proprietary suspended ceilings</u>				
	Electric light fittings, diffusers, panels, etc. generally are "lay-in" units of the same dimensions as the suspension grid described and allowance shall be made accordingly for their support, inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing shall take cognisance thereof).				
	<u>"Rhino-Drywall" partition systems</u>				
	"Rhino-Drywall" partitions shall comprise 63,5mm top and bottom galvanised steel tracks with 63,5mm galvanised steel vertical studs at maximum 600mm centres, friction fitted or pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc. and covered as described with wallboard screwed to studding with "Drywall" screws at maximum 220mm centres. Boards shall be butt jointed and finished with "Rhino" tape and "Readymix D" jointing compound, all in accordance with the manufacturer's instructions, complete with flat section aluminium skirtings. Intersections and abutments are measured separately and descriptions shall be deemed to include any additional studs, corner beads, jointing compound.				
	<u>CEILINGS ETC</u>				
	<u>SUSPENDED CEILINGS</u>				
	<u>1200 x 600 x 15mm Thick "Pelican Systems AMF Thermofon" or similar approved acoustic white square edged ceiling tiles, including 24mm wide x 38mm high pre-painted exposed "Econogrid" tee suspension system, hangers, grid and hold down clips.</u>				
72	Ceilings suspended not exceeding 1m below concrete soffits	m2	1,745		
	<u>"CKM W20/20" or Similar approved shadowline perimeter trim, fixed at 450mm centres, including all anchors to architects specification.</u>				
73	Shadowline cornice	m	1,638		
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CEILING INSULATION

74	100mm Thick "Alutherm" fibre glass blanket to be laid on ceilings applied strictly in accordance with the manufacturer's instructions	m2	1,745	
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ACCESS FLOORING

"Pentafloor" or similar approved access flooring, per architect's specification

75	"ISO Floors" or similar approved Modular and interchangeable steel panel access flooring including pedestals and panels, to architect's specification	m2	9	
76	"ISO Floor" skirting	m	13	

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 BUILDERS WORK
 Bill No. 7
 Ceilings, Partitions and Access Flooring

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 Bill No. 7

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	<u>SECTION NO 2: BUILDERS WORK</u>			
	<u>BILL NO 8</u>			
	<u>FLOOR COVERINGS</u>			
	Note: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No. 130 for CPAP formula purposes.			
	<u>PREAMBLES</u>			
	The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill			
	<u>CARPET TILES</u>			
	<u>500 x 500 x 6mm Thick "BELGOTEX NEXUS BERBERPOINT" or similar approved "stainproof miracle fibre" carpet tiles to architects specification (PC = R400/m2)</u>			
77	Carpet tiles on floors	m2	400	
	<u>MENTIS GRATING</u>			
78	36mm Thick uncoated mild steel mentis grating and frame on shaft floors, per engineer's specification	m2	16	
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	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 8</u></p> <p><u>IRONMONGERY</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items</u></p> <p>Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p> <p>Prices are to be based on the specific products/articles specified. If contractors 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</p> <p>On request returnable samples are to be provided to the principal agent for consideration</p> <p><u>Finishes to ironmongery</u></p> <p>Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following lists Satin bronze lacquered Chromium plated sc Satin chromium plated se Silver enamelled Grey enamelled AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded</p> <p><u>Fixing</u></p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs in brickwork or concrete</p>			
	<p>Section No. 2 Bill No. 9</p>		R	

<u>HINGES, BOLTS, ETC.</u>			
79	Stainless steel two ball bearing butt hinges	No	97
80	Other Alufab 1040 100mm Aluminium Sinkless Hinge, Centre Pin with standard alignment grooving for easy fitment	Pairs	50.4
81	dormakaba Hat and Coat Hook with rubber buffer	No	6
82	dormakaba Cabin hook 150mm	No	11
83	dormakaba M4 Patent Male / Female fixing screw pack (2 pairs per pack)	No	25
<u>HANDLES</u>			
84	dormakaba 120x40mm Oval Flush Pull Handle	No	4
85	dormakaba DPH301C Pull Handle BT fixed on a 170x170x1.2mm thick Grade 430 stainless steel plate with no cylinder cutout. Stainless Steel Plate to have 4 countersunk holes for screw fixing.	No	13
86	dormakaba 382x32mm Straight Tubular Pull Handle BTB (BTB Fixing Sets included)	No	6
87	dormakaba 382x32mm D Shaped Offset Tubular Pull Handle BTB (BTB Fixing Sets included)	No	2
88	dormakaba 325x25mm Straight Tubular Pull Handle BTB (BTB Fixing Sets included)	No	1
89	dormakaba 149x19mm Straight Tubular Pull Handle BTB (BTB Fixing Sets included)	No	26
90	dormakaba 62x44mm Ring Flush Pull Handle	No	8
91	dormakaba Lever handle on 170x170 plate with Cylinder cutout	No	32
92	dormakaba Lever handle on narrow stile rose with narrow stile Cylinder escutcheons	No	7
93	UNION Helping hand indicator bolt for paraplegic wc	No	3
94	dormakaba 800x206mm Cistern Back Rail	No	1
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120	dormakaba EN 2-4 Parallel Arm NON HOLD OPEN Door Closer - Adjustable Strength, Hydraulic Speed Control. Push Side Fitting (Parallel Arm Bracket Included) EN2 750-850, EN3 850-950, EN4 950-1100	No	5	
121	dormakaba EN 2-4 Parallel Arm DELAYED ACTION Door Closer. Push Side Fixing (Parallel Arm Bracket Included) EN2 750-850, EN3 850-950, EN4 950-1100	No	1	
122	dormakaba EN 3-6 Parallel Arm NON HOLD OPEN Door Closer - Adjustable Strength, Hydraulic Speed Control. Push Side Fixing (Parallel Arm Bracket Included) EN3 850-950, EN4 950-1100, EN5 1100-1250, EN6 1250-1400. Door Closer tested to EN 1154. Approved to AS1905 Part 1 Fire Resistant Doors. Certified manufacturer to ISO 9001	No	6	
<u>LETTERS, NAMEPLATES, ETC</u>				
<u>Dorma</u>				
123	dormakaba 150x150mm MALE sign	No	1	
124	dormakaba 150x150mm FEMALE sign	No	1	
125	dormakaba 150x150mm DISABLED PERSONS sign	No	1	
126	dormakaba 150x150mm ELECTRICAL sign	No	1	
127	dormakaba 150x150mm CLEANER sign	No	1	
128	dormakaba 150x150mm FIRE HOSE REEL sign	No	3	
129	Illuminated Fire Escape Signage by other	No	2	
<u>SUNDRIES</u>				
130	Stainless steel floor mounted door stop	No	18	
131	dormakaba Dust Proof Strike	No	18	
132	dormakaba Wall Buffer	No	8	
133	Other Trox AGS-T Door Grille, 300mm X 300mm - Anodized Aluminium	No	9	
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 BUILDERS WORK
 Bill No. 9
 Ironmongery
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	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 9</u></p> <p><u>METALWORK</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Descriptions of bolts, anchors, etc</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p> <p>Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
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Subcontractor executing aluminium work to be a registered AAAMSA member, manufacturer and installation to include ironmongery scheduled. Extrude aluminium to be fabricated from alloy 6063 in temper T6 in accordance with the latest addition of BS 1474. Glazing to be selected, fixed and marked in accordance with SANS 50572. Warranty against delamination and or colour delidation of safety glass and or hermetically sealed glazing to be provided, valid for a minimum of five years. Frames to receive glazing capable of withstanding the wind loads to be determined by a competent person, but shall not be less that 100Pa. Windows assembly to be stainless steel screws through out, contact between steel and aluminium to be prevented by means of example double sided tape. Compatibility between sealant and frame surface to be confirmed in writing before application. Fixing of aluminium windows to steel window linings to be with stainless steel, self tapping screws. Wire glass, if used as safety glass, to conform to SANS 1263 part 1. Glazed installations to be protected during construction and to be handed over perfect. AAAMSA test certificate A1, and SAGGA certificate of conformance to be provided for all aluminium work installed. Full detailed shop drawings to be provided for approval by the Architect prior to manufacture.

ALUMINIUM WINDOWS

Purpose-made clear 4mm low-e safety glass, normal-strength, glazed epoxy powder-coated aluminium window with fixed panels and perimeter sealed all round internally and externally with non-pickable epoxy joint sealant

134	600 x 600mm High aluminium windows, including all ironmongery (TX04)	No	23	
135	600 x 1800mm High aluminium windows, including all ironmongery (TX2)	No	17	
136	610 x 1200mm High aluminium windows, including all ironmongery (TC02)	No	22	

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137	450 x 1200mm High aluminium windows, including all ironmongery (TX06)	No	23	
138	900 x 1500mm High aluminium windows, including all ironmongery (TC3)	No	19	
139	900 x 2700mm High aluminium windows, including all ironmongery (TC4)	No	4	
140	1200 x 1520mm High aluminium windows, including all ironmongery (TX1)	No	14	
141	1800 x 450mm High aluminium windows, including all ironmongery (TC1)	No	2	
142	1800 x 600mm High aluminium windows, including all ironmongery (TX3)	No	4	
143	2400 x 1500mm High aluminium windows, including all ironmongery (TX1)	No	48	
<u>ALUMINIUM SHOPFRONTS</u>				
<u>Black anodised aluminium shop front with 2 aluminium butt hinges a side with 6mm thick laminated safety glass to be provided in the top and bottom panels and black anodised aluminium door with glass panels as per the Architect's specification</u>				
144	1360 x 2180mm High aluminium shopfront door, including all ironmongery (TC7)	No	7	
<u>ALUMINIUM DOOR FRAMES</u>				
<u>Purpose-made aluminium frame with 2 aluminium butt hinges a side with 6mm thick laminated safety glass to be provided in the top and bottom panels and black anodised aluminium door with glass panels as per the Architect's specification</u>				
145	1800 x 2346mm High aluminium double door frames, including all ironmongery (TC1)	No	15	
<u>ALUMINIUM DOOR</u>				
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<u>Black anodised aluminium frame and door with 6mm thick laminated safety glass to be provided in the top and bottom panels as per the Architect's specification</u>				
146	1930 x 3048mm High aluminium double door frames, including all ironmongery (TC2/D02)	No	2	
<u>1.6mm Thick "standard double rebated pressed metal door frames for one brick wall</u>				
147	Door frame for 1200 x 2056mm high door (TC3); (TX1)	No	8	
148	Door frame for 965 x 2210mm high door (TC4/D04)	No	9	
149	Door frame for 965 x 2210mm high door (TX4)	No	13	
150	Door frame for 850 x 2056mm high door (TC5); (TX4)	No	6	
151	Door frame for 1200 x 2056mm high door (T2/D02)	No	2	
152	Door frame for 1800 x 2056mm high door (TX2)	No	8	
153	Door frame for 901 x 2100mm high door (TX5)	No	4	
154	Door frame for 994 x 2154mm high door (TX7)	No	2	
<u>1.6mm Thick "custom single rebated pressed metal door frames for one brick wall</u>				
155	Door frame for 992 x 2154mm high door (TC6/D06)	No	4	
156	Door frame for 900 x 2056mm high door (TX6)	No	2	
<u>GALVANIZED STEEL LOUVRE PANELS</u>				
<u>Powder coated aluminium louvre panels screwed into aluminium window frames</u>				
157	450 x 1200mm High aluminium windows, including all ironmongery (TX06)	No	23	
158	600 x 600mm High aluminium windows, including all ironmongery (TX04)	No	23	
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BUILDERS WORK

Bill No. 10

Metalwork

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	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 10</u></p> <p><u>STRUCTURAL STEELWORK</u></p> <p><u>PREAMBLES</u></p> <p>For preambles refer to "General Preambles for Trades"</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p> <p>Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Where anchor bolts are described as embedded in sides or soffits of concrete it shall be deemed to include holes through formwork.</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p><u>STEEL COLUMNS AND BEAMS</u></p> <p><u>GALVANISED STEEL COLUMNS AND BEAMS</u></p> <p><u>Welded columns in single lengths with flat base, cap, bearer and connection plates, bolted to concrete</u></p>			
170	152 x 152 x 23.4kg/m H-section columns	t	7.56	
	Section No. 2 Bill No. 11			R

<u>Welded beams in single lengths with flat section base, top, bearer, gussets and connection plates</u>				
171	254 x 146 x 31.3kg/m I-section beams	t	28.89	
<u>GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC</u>				
<u>Welded bracing etc with flat section connection plates bolted to steel</u>				
172	152 x 152 x 23.4kg/m H-section	t	1.22	
<u>Purlins and girts, bolted to steel</u>				
173	125 x 65 x 20 x 2.0 x 5.42kg/m Lipped Channel	t	4.84	
174	175 x 65 x 20 x 2.5 x 5.18kg/m Lipped Channel	t	6.63	
175	80 x 60 x 6 x 6.37kg/m SHS	t	16.28	
<u>BASE, CONNECTION AND END PLATES</u>				
<u>Connector and end plates bolted to steel</u>				
176	Plates	t	3.43	
<u>Bolts to columns, beams, etc</u>				
177	High tensile bolts	t	3.43	
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 BUILDERS WORK
 Bill No. 11
 Structural Steelwork

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 Bill No. 11

Item No		Quantity	Rate	Amount
	<u>SECTION NO 2: BUILDERS WORK</u>			
	<u>BILL NO. 12</u>			
	<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	Note : Tenderers are referred to the "Model Preambles for Trades" (2008 Edition) as supplied by the Association of South African Quantity Surveyors, which shall be deemed to be incorporated in these Bills of Quantities			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	Supplementary preamble items, described in Bill No. 1, shall equally apply to this Bill.			
	<u>GENERAL</u>			
	General notes, described in Bill No. 1, shall equally apply to this Bill.			
	<u>SPECIFICATIONS AND DRAWINGS</u>			
	Tenderers shall refer to and comply with the drawings included as annexures to this document when pricing all items contained in this bill of quantities			
	<u>RAINWATER DISPOSAL</u>			
	<u>Heunis steel square gutter and rainwater pipes</u>			
183	100 x 75mm Roof gutters with beaded front edge	m	370	
184	100 x 75mm Rainwater pipes	m	801	
	<i>The applicable "extra over" items from the following list are to be inserted directly after each of the foregoing items</i>			
185	Extra over gutter for stopped end	No	32	
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186	Extra over gutter for outlet for 100 x 75mm pipe	No	32	
187	Extra over rainwater pipe for bend	No	63	
188	Extra over rainwater pipe for shoe	No	32	
	<u>Sanitary plumbing pipe reticulation</u>			
	<u>Hot and cold water internal pipe reticulation</u>			
189	Reticulation pipe system complete including all connections to the main water supply (main water supply - elsewhere)			Item
	<u>SANITARY FITTINGS</u>			
	<u>WC</u>			
190	Geberit Abalona WC wall hung rimfree pan for Wheelchair access (seat Abalona seat ring) class 1, Full flush 4.5l, in accordance with en 997. Actuator: Gegerit mambo single flush actuator for Stop and go. Brushed finish stainless steel. Cistern - Geberit Kombifix concealed cistern, 4.5l set Up.	No	3	
191	Geberit Abalona WC wall hung rimfree pan (seat Abalona seat ring) class 1, Full flush 4.5l, in accordance with en 997. Actuator: Geberit mambo single flush actuator for Stop and go. Brushed finish stainless steel. Cistern - Geberit Kombifix concealed cistern, 4.5l set Up.	No	18	
	<u>WHB</u>			
192	Vaal sanitaryware vitreos china 475 x 370 x 130mm "alto art" surface mounted basin. no provision for tapholes or overflow. white. or similar approved. neoperl aerator insert – mikado spray 1.9l/min designer spray" with the vandal proof casing "wc m22 vr - vandal proof cp housing	No	23	
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<u>Mixers</u>					
199	Grohe allure brilliant 15mm chrome single lever basin mixer (code: 23114000), fitted in accordance with the manufacturers recommendations. or similar approved. • allure brilliant single lever basin mixer • ½" xl-size chrome • suitable for free standing basins • volume: 0.020832m³.	No	23		
200	Sink to include projectline wall mounted single lever mixer (code: 303365) with overarm swivel spout. or similar architect approved. water saving aerator "wc pca 06 - 6l per minute cascade" with the vandal proof casing "wc m22 vr - vandal proof cp housing"	No	1		
<u>TRAPS, CISTERNS, WASTES ETC.</u>					
201	Geberit Alpha Kombifix Concealed Cistern (80mm) (W/H) 110175011	No	21		
202	Wirquin All In One White Universal Bottle Trap With 32 And 40mm Outlet	No	6		
203	Cobra watertech 40mm chrome plated bottle trap (code: 360) with 75mm deep re-seal, adjustable telescopic pipe and 40mm outlet or similar approved by architect.	No	3		
204	Italtile ltd Anti Vandal Pull Up Basin Waste, Chrome	No	26		
205	Sink plain p trap 76 seal 40mm	No	4		
206	Basin plain p trap 38 seal 32mm with 40mm outlet	No	26		
<u>VALVES, ETC.</u>					
207	Italtile ltd Angle Valve 15x15mm	No	26		
<u>Water Meters</u>					
208	Supply, Install, Test, Commission and provide 12 month guarantee for the installation of cold water meters installation. as per engineers specification			Item	
Section No. 2 Bill No. 13					R

SANITARY ACCESSORIES

Supply and install the following complete

209	Franke stratos strx 672 1,2/1,5mm thick grade 304 18/10 satin stainless steel toilet roll holders (code:359716), size 304 x 156 x 140,7mm deep for 2 rolls maximum 108mm diameter with spindle system and cylinder lock with standard franke key, plugged and screwed to the wall with stainless steel screws	No	19
210	Franke stratos strx618 1,2/1,5mm thick satin finished stainless steel soap dispenser (code: 2120041), size 100 x 134 x 304mm high with a replaceable and refillable 1 litre container, cylinder lock with standard franke key, plugged and screwed to the wall with stainless steel screws.	No	9
211	Franke chronos bs 611 v grade 304 18/10 satin stainless steel sanitary towel disposal bins (code: 359830), size 304 x 205 x 134mm deep with capacity of 6 litres, plugged and screwed to the wall with stainless steel screws, or similar approved	No	9

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 Bill No. 13

Section No. 2

BUILDERS WORK

Bill No. 13

Plumbing and Drainage

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Bill No. 13

Item No		Quantity	Rate	Amount
	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 13</u></p> <p><u>TILING</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Fixing</u></p> <p>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</p> <p>Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat</p> <p>Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts from the "Tal Professional" range of products as recommended by the manufacturer of the tiles</p> <p><u>WALL TILING</u></p> <p>All materials, including adhesive, grouting,etc. will be included in the prime cost amounts.</p> <p><u>600 x 1200 x 8mm Thick "Union tiles" or similar approved porcelain tiles fixed to wood floated cement screed on surface bed, including 3mm joints with "Tal Tile" grout (PC amount = R400/m2)</u></p>			
212	Porcelain tiles on walls, splash backs, etc.	m2	707	
	Section No. 2 Bill No. 14		R	

<u>FLOOR TILING</u>			
<u>600 x 600 x 8mm Thick porcelain tiles fixed to wood floated cement screed on surface bed, including 3mm joints with "Tal Tile" grout (PC amount = R350/m2)</u>			
213	Porcelain tiles on floors, including landings	m2	1,809
214	100mm High porcelain tile skirting	m	590
<u>600 x 600 x 8mm Thick "Union tiles" or similar approved non-slip porcelain tiles fixed to wood floated cement screed on surface bed, including 3mm joints with "Tal Tile" grout (PC amount = R400/m2)</u>			
215	Non-slip porcelain tiles on floors, including landings	m2	144
216	100mm High non-slip porcelain tile skirting	m	202
<u>SUNDRIES</u>			
217	8 x 12mm Polished aluminium screwfix transition cover	m	105
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BUILDERS WORK

Bill No. 14

Tiling

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Section No. 2

Bill No. 14

Item No		Quantity	Rate	Amount
	<p><u>SECTION NO 2: BUILDERS WORK</u></p> <p><u>BILL NO 14</u></p> <p><u>GLAZING</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is advised to refer to "Model Preamble For Trades" before pricing this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Float glass</u></p> <p>The term "float glass" is used for monolithic annealed glass</p> <p><u>Laminated glass</u></p> <p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p> <p><u>TOPS, SHELVES, DOORS, MIRRORS, ETC</u></p> <p><u>Black aluminium frame, fitted above and centered to vanity, fitted flush with tiling onto smooth plastered wall with manufacturer-approved, double sided adhesive tape or similar approved by architect</u></p>			
218	Mirror size 500 x 900mm high (CODE: 41211000)	No	26	
	2			
	Section No. 2			R
	Bill No. 15			

Item No		Quantity	Rate	Amount
	<u>SECTION NO 2: BUILDERS WORK</u>			
	<u>BILL NO 15</u>			
	<u>PAINTWORK</u>			
	<u>PREAMBLES</u>			
	For preambles see "General Preambles for Trades"			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>DESCRIPTIONS</u>			
	Descriptions of paintwork shall be deemed to include for all cutting in			
	<u>PAINT SPECIFICATIONS</u>			
	Note: Surface to be dry, sound and clean and cured for a minimum of 14 days, with a moisture content measured with a doser hygrometer (or equivalent) of BD 2 scale - 8% or less.			
	<u>PAINTWORK, ETC TO NEW WORK</u>			
	<u>PAINT ON FLOATED PLASTER</u>			
	<u>One coat plaster primer (UC 56) and two coats "Wall & All (WAA)"</u>			
219	Internal walls	m2	5,544	
	<u>One coat professional plaster primer (PPP 700) and two coats professional superior matt (PEM 950), according to architects specification (specification document: NW107T)</u>			
	<u>SMOOTH CONCRETE SURFACES</u>			
	Section No. 2 Bill No. 16			R

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BUILDERS WORK

Bill No. 16

Paintwork

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Bill No. 16

Item No		Quantity	Rate	Amount
	<p><u>BILL NO 16</u></p> <p><u>SECTION NO. 2</u></p> <p><u>EXTERNAL WORKS</u></p> <p><u>PREAMBLES</u></p> <p><u>GENERAL</u></p> <p>The construction of the boundary wall will confirmed during construction phase and will be communicated to the contractor if the works should commence.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Supplementary preambles, described in Bill No. 1, shall equally apply to this Bill</p> <p><u>Sizes in descriptions</u></p> <p>Where sizes in descriptions are give in brick units, "one brick" shall represent the length and "half brick" the width of a brick</p> <p><u>Hollow walls etc</u></p> <p>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.</p> <p><u>Face bricks</u></p> <p>Bricks shall be ordered timeously to obtain uniformity in size, colour and ordered to fall well within the Tenderers programme</p> <p><u>Pointing</u></p> <p>Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc</p> <p><u>SAMPLES</u></p>			
	Section No. 2 Bill No. 17		R	

<u>SITE CLEARANCE</u>					
226	Allowance for digging up and removing all rubbish, shrubs, bush, vegetable soil, etc., not exceeding 200 mm girth, from the whole area of the site to be built upon	m2	1,146		
<u>Excavation in earth not exceeding 2m deep</u>					
227	Over site between buildings, retaining walls, etc to reduce levels and dispose in prescribed stock piles on site	m3	516		
<u>Extra over bulk excavations in earth for excavation in</u>					
228	Soft rock.	m3	52		
229	Hard rock.	m3	77		
<u>Extra over all excavations for carting away</u>					
230	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	516		
<u>Keeping excavations free of water</u>					
231	Keeping excavations free from water, other than subterranean water			Item	
<u>FILLING, ETC</u>					
<u>Earth filling supplied by the contractor under parking areas, roadways, etc</u>					
232	G5 Earth filling supplied by the contractor compacted to 95% Modified AASHTO density	m3	344		
233	G7 Earth filling supplied by the contractor compacted to 93% Modified AASHTO density	m3	172		
<u>Compaction of surfaces</u>					
234	Compaction of ground surface under paving areas etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 100% Mod AASHTO density	m2	1,146		
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 BUILDERS WORK
 Bill No. 17
 External Works
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 Bill No. 17

Bill No	Section No. 2 BUILDERS WORK <u>SECTION SUMMARY - BUILDERS WORK</u>	Page No	Amount
1	Earthworks	38	
2	Concrete, Formwork & Reinforcement	43	
3	Masonry	47	
4	Waterproofing	50	
5	Roof Coverings, etc.	53	
6	Carpentry and Joinery	57	
7	Ceilings, Partitions and Access Flooring	61	
8	Floor Coverings, Plastic Linings, etc.	62	
9	Ironmongery	68	
10	Metalwork	74	
11	Structural Steelwork	77	
12	Plastering	78	
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15	Glazing	88	
16	Paintwork	91	
17	External Works	95	
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	<p><u>SECTION 3</u></p> <p><u>BILL NO 1</u></p> <p><u>PROVISIONAL SUMS AND BUDGETARY ALLOWANCES</u></p> <p><u>PREAMBLES</u></p> <p>NOTE : Tenderers are advised to study the "MODEL PREAMBLES FOR TRADES" (2008 Edition) as recommended and published by the Association of South African Quantity Surveyors before pricing this bill.</p> <p><u>GENERAL</u></p> <p>General items, described in Bill No. 1, shall equally apply to this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Supplementary preambles, described in Bill No. 1, shall equally apply to this Bill</p> <p><u>BUDGETARY ALLOWANCES</u></p> <p><u>NOTE:</u></p> <p>- <u>These items are to be taken into account in the pricing of the Preliminaries as they will NOT attract separate Preliminaries of their own. Mark-ups are included in the values.</u></p> <p>- <u>The following budgetary allowances are for work to be executed by the PRINCIPAL CONTRACTOR</u></p> <p><u>PROVISIONAL SUMS.</u></p> <p><u>SUB-CONTRACTORS WORK</u></p>			
	Section No. 3 Bill No. 1		R	

LIFE/WHEELCHAIR HOIST

- 1 R 700 000.00 (Seven Hundred Thousand Rand) For the supply and installation of Lift/Wheelchair Hoist
- 2 Add for Profit
- 3 Attendance

CATERING FOR MONTHLY PSC MEETINGS

- 4 R 45 000.00 (Forty Five Thousand Hundred Rand) for catering for the monthly PSC meeting for 15 Months.
- 5 Add for Profit
- 6 Attendance

Item		700,000.00
	%	
	%	
Item		45,000.00
	%	
	%	

Section No. 3
Bill No. 1

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Section No. 3

PROVISIONAL SUMS

Bill No. 1

Budgetary Allowances, PC Amounts & Provisional Sums

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Section No. 3
Bill No. 1

17	2. Excavate on existing asbestos pipes, disconnect and removal from trench to designated storage	m	2,000		
<u>EXCAVATION ANCILLARIES</u>					
<u>Make up deficiency in backfill material (Provisional)</u>					
18	a. From other necessary excavations on site	m3	213		
19	b. by importation from commercial sources or off- site sources selected by the Contractor	m3	213		
20	Compaction in road reserves	m3	127		
<u>Overhaul</u>					
21	a. Limited overhaul: Over 0.1km up to 1km (Provisional)	m3	1,500		
22	b. Long overhaul: Over 1km (Provisional)		1,000		
23	Shore trench opposite structure or service	m	5		
<u>(Provisional)</u>					
<u>Existing services that intersect or adjoin a pipe trench</u>					
24	a. Services that intersect a trench	No	20		
25	b. Services that adjoin a trench	m	10		
<u>BEDDING</u>					
<u>Provision of bedding from trench excavation</u>					
26	a. Selected granular	m3	265		
27	b. Selected fill	m3	179		
<u>From commercial sources (Provisional)</u>					
28	a. Selected granular	m3	143		
29	b. Selected fill	m3	97		
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Bill No. 2					

30	c. 19mm Crushed stone	m3	33
31	Encasing of pipes in concrete (20MPa)	m3	5
<u>Overhaul of material (Provisional)</u>			
32	a. Bedding cradle		1,000
33	b. Selected fill blanket		1,000

Section No. 4
 Bill No. 2

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Item No		Quantity	Rate	Amount
	<u>SECTION 4</u>			
	<u>BILL NO 3</u>			
	<u>SCHEDULE 4:</u>			
	<u>WATER SUPPLY - PIPEWORKS</u>			
	<u>PIPES</u>			
	<u>Supply, handle, lay, bed in flexible pipe bedding and test</u>			
	<u>uPVC class 9 pipes complete with spigot and socket joints.</u>			
	(All material including fittings to be SABS approved)			
34	1. 75 mm diameter	m	1,000	
35	2. 90 mm diameter	m	500	
36	3. 110 mm diameter	m	500	
37	4. 160 mm diameter	m		Rate Only
	<u>SPECIALS AND FITTINGS</u>			
	<u>Extra-over item 4.1 for supplying, handling, laying, bedding, jointing and testing of the following fittings for use on uPVC pipes</u>			
	<u>Bends</u>			
	<u>11.25 degree bends</u>			
38	2. 75mm	No	26	
39	3. 90mm	No		Rate Only
40	4. 110mm	No	4	
41	5. 160mm	No	3	
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	<u>22.5 degree bends</u>			
42	1. 50mm	No		Rate Only
43	2. 75mm	No	12	
44	3. 90mm	No		Rate Only
45	4. 110mm	No	3	
46	5. 160mm	No	1	
47	6. 200mm	No		Rate Only
48	7. 250mm	No		Rate Only
	<u>45 degree bends</u>			
49	1. 50mm	No		Rate Only
50	2. 75mm	No	5	
51	3. 90mm	No		Rate Only
52	4. 110mm	No		Rate Only
53	5. 160mm	No	1	
54	6. 200mm	No		Rate Only
55	7. 250mm	No		Rate Only
	<u>90 degree bends</u>			
56	1. 75mm	No	16	
57	2. 110mm	No	2	
58	3. 160mm	No	3	
	<u>Tees</u>			
59	1. 75mm x 50mm	No		Rate Only
60	2. 75mm x 75mm	No	23	
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61	3. 90mm x 50mm	No		Rate Only
62	4. 90mm x 75mm	No		Rate Only
63	5. 110mm x 75mm	No	1	
64	6. 110mm x 110mm	No	5	
65	7. 160mm x 110mm	No		Rate Only
66	8. 160mm x 160mm	No	1	
67	9. 200mm x 75mm	No		Rate Only
68	10. 200mm x 110mm	No		Rate Only
69	11. 250mm x 200mm	No		Rate Only
	<u>Flange adaptors</u>			
70	1. 50mm	No		Rate Only
71	2. 75mm	No	4	
72	3. 90mm	No		Rate Only
73	4. 110mm	No		Rate Only
74	5. 160mm	No		Rate Only
75	6. 200mm	No		Rate Only
76	7. 250mm	No		Rate Only
	<u>Reducers</u>			
77	1. 110mm x 50mm	No		Rate Only
78	2. 110mm x 75mm	No	8	
79	3. 110mm x 90mm	No		Rate Only
80	4. 160mm x 75mm	No		Rate Only
81	5. 160mm x 110mm	No	2	
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<u>SUNDRIES</u>				
95	Thrust blocks and pedestals class 25/19 concrete	m3	12	
<u>Connection to existing water mains, including excavation, bedding, backfilling cutting of pipes, repair and plugging redundant pipes for pipe diameters</u>				
96	1. 50 mm diameter	No	5	
97	2. 75 mm diameter	No	2	
98	3. 90 mm diameter	No	2	Rate Only
99	4. 110 mm diameter	No	1	
100	5. 160 mm diameter	No		Rate Only
101	6. 200 mm diameter	No		Rate Only
102	7. 250 mm diameter	No		Rate Only
103	Disinfection of the pipeline including the associated fittings	m	1,500	
104	Communal Standpipes / drinking fountains Supply, install and test standpipe complete as shown on	No	5	
<u>typical detail drawings</u>				
105	Pipe Markers Supply and install precast concrete pipeline markers.	No	10	
<div style="display: flex; justify-content: space-between; align-items: center;"> Section No. 4 R </div> <div style="display: flex; justify-content: space-between; align-items: center; border-top: 1px solid black;"> Bill No. 3 </div>				

Section No. 4

CIVIL WORKS

Bill No. 3

Water Supply - Pipeworks

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Item No		Quantity	Rate	Amount
	<u>SECTION 4</u>			
	<u>BILL NO 4</u>			
	<u>SCHEDULE 5:</u>			
	<u>SITE CLEARANCE</u>			
106	Clear and grub street strip for pipe in road reserve.	m2	17	
	<u>Remove and grub large trees, and tree stumps of girth:</u>			
107	a. Over 1m and up to and including 2m	No	5	
108	b. Over 2m and up to and including 3m	No	5	
	<u>ELEVATED TANK - EARTHWORKS</u>			
	<u>EXCAVATIONS</u>			
	<u>Excavate up to 800mm wide, 1m deep in all materials for trenches, backfill, compact, and dispose of surplus / unsuitable material for diameters:</u>			
	<u>Giyani TVET College</u>			
109	1. 80mm	m	112	
110	2. 100mm	m	65	
111	3. 150mm	m	35	
	<u>Extra-over items 3.1 for</u>			
112	1. Intermediate excavation	m3	13	
113	2. Hard rock excavation	m3	17	
	<u>BEDDING</u>			
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<u>Provision of bedding from trench excavation</u>			
114	a. Selected granular	m3	14
115	b. Selected fill	m3	8
<u>From commercial sources (Provisional)</u>			
116	a. Selected granular	m3	8
117	b. Selected fill	m3	4
118	c. 19mm Crushed stone	m3	2
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CIVIL WORKS

Bill No. 4

Elevated Tank - Earthworks

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<u>PREFABRICATED TANK</u>					
126	Supply, handle, install, erect hot dipped galvanised ABECO steel tank. 4.88m length x 2.44m width x 2.44m deep. Including lockable access manhole with built-in screened vent. Internal and external ladder, a level indicator, as well as all fittings required for installation. And the supply, handling, installation, and erection of hot dipped galvanised steel support structures 10m high, including an access ladder with safety cage. As well as all standard fittings required for installation and walkway around tank base	No	1		
<u>CONCRETE</u>					
127	Binding layer in 15MPa concrete (50mm thick)	m2	4		
128	Shutter rough	m2	25		
<u>SCHEDULED REINFORCEMENT</u>					
129	Steel bars	t	16.00		
130	Strength of concrete grade 30/19	m3	50		
<u>UNFORMED SURFACE FINISHES</u>					
131	Steel float	m2	70		
132	M20 Bolts cast in complete with washer plate and nuts, all	No	16		
<u>galvanised.</u>					
<u>PIPES</u>					
<u>Supply, lay, and bed pipes complete with couplings for Class 16 steel pipes of the following diameter:</u> <u>(All material including fittings to be SABS approved)</u>					
133	1. 80 mm diameter	m	40		
134	2. 100 mm diameter	m	55		
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135	3. 150 mm diameter	m	35		
	<u>Supply, handle, lay, bed in flexible pipe bedding and test uPVC class 16 pipes complete with spigot and socket joints.</u> (All material including fittings to be SABS approved)				
136	1. 75 mm diameter	m	72		
137	2. 110 mm diameter	m	10		
	<u>11.25 degree Bends</u>				
138	1. 75mm	No	1		
	<u>90 degree Bends</u>				
139	1. 100mm	No	5		
140	2. 80mm	No	5		
141	3. 150mm	No	1		
142	4. 75mm	No	4		
	<u>Tees</u>				
143	1. 100mm x 100mm	No	1		
	<u>Flange adaptors</u>				
144	1. 75mm	No	1		
145	2. 110mm	No	2		
146	3. 160mm	No			Rate Only
	<u>Extra over Item 8.2.1 for supplying, fixing and bedding of valves</u>				
147	DN100 flanged cosmos Meinecke WPD bulk meter with digital output or similar approved; Class 16	No	1		
148	DN80 flanged cosmos Meinecke WPD bulk meter with digital output or similar approved; Class 16	No	1		
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160	Construct concrete inlet chamber Type 2 complete with step irons, and frames as per detailed drawings, up to 2.5m depth.	No			Rate Only
161	Construct concrete outlet chamber Type 3 complete with step irons, and frames as per detailed drawings, up to 2.5m depth.	No			Rate Only
162	Construct scour valve chamber Type 4 , complete with step irons, and frames as per detailed drawings up to 2.5m depth.	No			Rate Only
163	Construct scour valve chambers Type 5 , complete with step irons, and overflow box, and frames as per detailed drawings, up to 2.5m depth.	No	1		20000
164	Construct isolating valve chamber Type 6, complete with step irons, and frames as per detailed drawings, up to 2.3m	No			Rate Only
165	Construct isolating valve chamber Type 7, complete with step irons, and frames as per detailed drawings, up to 2.3m	No			Rate Only
166	Construct inlet and outlet chamber Type 8, complete with step irons, and frames as per detailed drawing, up to 2.4m depth.	No			Rate Only
167	Provision of lockable manhole covers	No	2		
<u>SUNDRIES</u>					
168	Thrust blocks and pedestals class 25/19 concrete	m3	5		
169	Disinfection of the pipeline including the associated fittings	m	212		
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 CIVIL WORKS
 Bill No. 5
 Prefabricated Steel Tank

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Item No			Quantity	Rate	Amount
	<u>SECTION 4</u>				
	<u>BILL NO 6</u>				
	<u>SECTION : SITE CLEARANCE</u>				
	<u>CLEAR SITE</u>				
170	Clear and grub Site		1		
	<u>Remove and grub large trees and tree stumps of girth Over and up to</u>				
171	1 m 2 m	No	2		
172	2 m 3 m	No	1		
173	3 m upwards in 1 m steps	No	1		
174	Reclear surfaces (provisional) (where ordered by Engineer)		1		
175	Take down existing fences				Rate Only
176	Dismantle and remove pipelines (not encased in concrete), electricity transmission lines, cables, etc.	m	750		
177	Dismantle and remove pipelines encased in concrete	m			Rate Only
178	Excavate carefully, lift, recover and deliver sewer pipes to temporal store. (Excavation and backfilling measured elsewhere)	m	750		
179	Demolish and remove structures/buildings			SUM	Rate Only
180	Dismantle steelwork, etc.			SUM	
181	Cart materials and debris to unspecified sites and dump (provisional)		25		
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	Section No. 4				
	Bill No. 6				

<u>ALTERNATIVE</u>			
182	Remove and grub all trees and tree stumps regardless of girth		1
<u>SECTION : PIPE TRENCHES (SEWER)</u>			
<u>EXCAVATION</u>			
<u>Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes up to 300 mm diam. for total trench depth:</u>			
183	Exceeding 0,0 m but not exceeding 1,0 m	m	250
184	Exceeding 1,0 m but not exceeding 2,0 m	m	500
185	Exceeding 2,0 m but not exceeding 3,0 m	m	
186	Intermediate excavation	m3	135
187	Hard rock excavation	m3	90
188	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m3	68
<u>EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)</u>			
189	from other necessary excavations on site	m3	25
190	by importation from designated borrow pits	m3	50
191	by importation from commercial or off-site sources selected by the Contractor	m3	50
192	Open up and close down borrow pit		SUM
193	Compaction in road reserves	m3	100
194	Special haul : Over 50 m up to 0,5 km (provisional)	m3	100
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	<u>Available from trench within 0,5 km (Subclause 3.4.1)</u>			
206	a) Selected granular material	m3	25	
207	b) Selected fill material	m3	30	
	<u>Imported from</u>			
	<u>a) Other necessary excavations within 0.5 km (Provisional)</u>			
208	1) Selected granular material	m3	10	
209	2) Selected fill blanket	m3	10	
	<u>b) Borrow pits (Provisional)</u>			
210	1) Selected granular material	m3	63	
211	2) Selected fill material	m3	90	
	<u>c) Commercial sources (Provisional)</u>			
212	1) Selected granular material	m3		Rate Only
213	2) Selected fill material	m3		Rate Only
214	Concrete bedding (Provisional)	m3	5	
	<u>Overhaul of material for bedding (Provisional) where ordered Extra-over items .1.1 to .1.6</u>			
215	a) Selected granular material		500	
216	b) Selected fill material		500	
	<u>SECTION : SEWERS</u>			
	<u>SEWER PIPEWORK</u>			
	<u>Supply, lay, joint, bed Class C and test sewer pipes</u>			
217	110 mm diam., Mainlite 400 KPa	m	125	
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218	160mm diam., Mainlite 400 KPa	m	300	
219	200mm diam., Mainlite 400 KPa	m	325	
220	300mm diam., Mainlite 400 KPa	m		Rate Only
	<u>Extra-over item .3 for supply, lay, joint, bed Class C and test specials</u>			
221	150 mm 45 deg. access bends	No	25	
222	225 mm x 100 mm pipe junctions	No	13	
223	375 mm end caps	No		Rate Only
	<u>BEDDING MATERIALS Supply and deliver</u>			
224	Selected granular material	m3	100	
225	Selected fill material	m3	423	
	<u>MANHOLES, ETC. Manholes to Dwg No.complete with Type 4 cover and frame, for depths over and up to</u>			
226	- 0.5 m	No	1	
227	0.5 m to 1,0 m	No	5	
228	1,0 m to 1,5 m	No	8	
229	Extra-over item .5 for Type 2A cover and frame in road areas	No		Rate Only
	<u>Extra-over item .5 for construction of backdrops and ramps including extra excavation, formwork, joints, etc., for depths over and up to 3m</u>			
230	- 1,0 m	No	3	
231	1,0 m 2,0 m	No	3	
232	2,0 m 3,0 m	No	3	
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 CIVIL WORKS
 Bill No. 6
 Sewer
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	<u>SECTION SUMMARY - CIVIL WORKS</u>		
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1	Site Clearance	100	
2	Water Supply - Earthworks	104	
3	Water Supply - Pipeworks	110	
4	Elevated Tank - Earthworks	113	
5	Prefabricated Steel Tank	119	
6	Sewer	126	
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 5: ELECTRICAL INSTALLATION</u>			
	<u>BILL NO 1</u>			
	<u>MEDIUM VOLTAGE INSTALLATION</u>			
	<u>PAINTWORK</u>			
	<u>MV switchgear</u>			
	Refer to detail and standard specification and drawing			
	<u>Supply and delivery of ring main units</u>			
1	Outdoor 630A, 11kV non-extendable RMU as specified	No	1	
	<u>Installation, including rigging into position of ring main units</u>			
2	Outdoor non-extendable RMU rigging, incl: off-loading and hoisting into position	No	1	
	<u>Miniature Substation</u>			
	<u>Supply and delivery of Type B minisub</u>			
3	Oil type transformer - 315 kVA, 11kV/420V C/W 2 x MV Isolators, 1 x MV Circuit Breaker	No	1	
	<u>Installation of minisub including rigging, off-loading and hoisting into position</u>			
4	Type B - 315kVA, 11kV/420V	No	1	
	<u>MV Cable</u>			
	<u>Supply only XPLE Type A</u>			
	<u>Rates for the MV cables shall include danger tape as well as cable markers</u>			
5	95mm ² , 3 core, Cu, 6.35/11kV	m	170	
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<u>Installation only XLPE Type</u>					
6	95mm ² , 3 core, Cu, 6.35/11kV	m	170		
<u>Termination of XLPE Type A</u>					
7	95mm ² , 3 core, Cu, 6.35/11kV	No	2		
<u>Cable joint kit for XLPE Type A</u>					
8	95mm ² , 3 core, Cu, 6.35/11kV	No	1		
<u>Earthing & Bonding</u>					
9	70mm ² BCEW	m	175		
<u>Miscellaneous</u>					
<u>General</u>					
10	FAT for one off minisub			Item	
11	Testing, commissioning of complete MV installation			Item	
12	Issue MV COC in accordance to SANS10142-2			Item	
13	Labelling of all cables on both ends			Item	
14	Dielectric tests for all MV cabling			Item	
<u>LOW VOLTAGE DISTRIBUTION</u>					
<u>PVC.SWA.PVC Cu Fire Retardant 600/1000V cable</u>					
<u>Rates for the LV cables shall include danger tape</u>					
<u>Supply & delivery of cable</u>					
15	95mm ² , 4 core	m	500		
<u>Installation of cable</u>					
16	95mm ² , 4 core	m	500		
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<u>Termination of cable</u>			
17	95mm ² , 4 core	No	10
<u>PVC.SWA.PVC Low halogen 600/1000V cable</u>			
<u>Supply & delivery of cable</u>			
18	16mm ² , 4 core	m	140
19	6mm ² , 4 core	m	5
<u>Installation of cable</u>			
20	16mm ² , 4 core	m	140
21	6mm ² , 4 core	m	5
<u>Termination of cable</u>			
22	16mm ² , 4 core	No	12
23	6mm ² , 4 core	No	2
<u>Earthing and bonding</u>			
<u>Earth conductors Bare copper</u>			
24	95mm ² BCEW	m	500
<u>Earth conductors Green/Yellow PVC Insulated copper</u>			
25	6mm ²	m	100
<u>Earth conductors Black PVC insulated copper</u>			
26	16mm ²	m	70
<u>Earth bars</u>			
27	500 x 50 x 6mm insulated earth bar with 10mm dia. Pre-drilled holes	No	2
<u>Miscellaneous</u>			
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<u>Labelling</u>			
28	Labelling of all cables as specified		Item
29	Dielectric and insulation resistance tests on all LV cables		Item
<u>DISTRIBUTION BOARDS AND OUTDOOR KIOSK</u>			
<u>Main low voltage panel</u>			
<u>Refer to detail and standard specification and drawing</u>			
<u>Supply & delivery of DB</u>			
30	DB-C	No	1
31	DB-X-GF	No	1
<u>Installation of DB</u>			
32	DB-C	No	1
33	DB-X-GF	No	1
<u>Rigging of DB</u>			
34	DB-C	No	1
35	DB-X	No	1
<u>Distribution Boards</u>			
<u>Refer to detail and standard specification and drawing</u>			
<u>Supply & delivery of DB</u>			
36	DB-UPS in Building C	No	1
37	DB-UPS in Building X	No	1
38	DB-X-FF	No	1
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<u>Installation of DB</u>					
39	DB-UPS in Building C	No	1		
40	DB-UPS in Building X	No	1		
41	DB-X-FF	No	1		
<u>Outdoor Kiosk</u>					
<u>Supply & delivery of outdoor weatherproof kiosk</u>					
42	Kiosk 1	No	1		
<u>Installation of kiosk</u>					
43	Kiosk 1	No	1		
<u>General</u>					
44	Issue electrical COC for new electrical installation supplied from Distribution Boards installed	No	6		
<u>RETICULATION AND SUPPORT</u>					
<u>Trunking</u>					
<u>PG = Pre-galvanised, HDG = Hot dipped galvanised, PCS = Powder coated steel</u>					
<u>All wireways to include all supports and fixing materials</u>					
<u>Trunking, supported in single volume space</u>					
45	Supply PG 76 x 76mm high, c/w PVC cover	m	300		
46	Supply PG 76 x 127mm high, c/w PVC cover	m	580		
47	Install PG 76 x 76mm high, c/w PVC cover	m	300		
48	Install PG 76 x 127mm high, c/w PVC cover	m	580		
<u>Trunking fittings</u>					
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<u>Trunking, radiused bends</u>			
49	Supply PG 76 x 76mm high, c/w PVC cover	No	4
50	Supply PG 76 x 127mm high, c/w PVC cover	No	30
51	Install PG 76 x 127mm high, c/w PVC cover	No	4
52	Install PG 76 x 76mm high, c/w PVC cover	No	30
<u>Trunking, radiused T-pieces</u>			
53	Supply PG 76 x 76mm high, c/w PVC cover	No	2
54	Supply PG 76 x 127mm high, c/w PVC cover	No	50
55	Install PG 76 x 76mm high, c/w PVC cover	No	2
56	Install PG 76 x 127mm high, c/w PVC cover	No	50
<u>Trunking, radiused crossovers</u>			
57	Supply PG 76 x 76mm high, c/w PVC cover	No	8
58	Supply PG 76 x 127mm high, c/w PVC cover	No	2
59	Install PG 76 x 76mm high, c/w PVC cover	No	8
60	Install PG 76 x 127mm high, c/w PVC cover	No	2
<u>Trunking, end caps</u>			
61	Supply PG 76 x 76mm high, c/w PVC cover	No	6
62	Supply PG 76 x 127mm high, c/w PVC cover	No	2
63	Install PG 76 x 76mm high, c/w PVC cover	No	6
64	Install PG 76 x 127mm high, c/w PVC cover	No	2
<u>Trunking, offsets, consisting of 4 direction changes</u>			
65	Supply PG 76 x 76mm high, c/w PVC cover	No	4
66	Supply PG 76 x 127mm high, c/w PVC cover	No	6
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<u>Conduits built into / cast into or chased into brickwork, concrete or drywall</u>			
94	Supply 20mm diameter, PVC	m	450
95	Install 20mm diameter, PVC	m	450
<u>Conduit outlet boxes</u>			
<u>Boxes built/cast into walls or concrete</u>			
96	60mm PVC round boxes, c/w cover plate	No	40
97	100 x 50 x 50mm, galvanised steel box	No	20
<u>Surface mounted boxes</u>			
98	60mm PVC round boxes, c/w cover plate	No	420
<u>Wiring</u>			
<u>Copper conductors</u>			
99	Supply 2.5mm ² , PVC insulated conductor	m	7,000
100	Install 2.5mm ² , PVC insulated conductor	m	7,000
101	Supply 2.5mm ² , PVC insulated earth conductor	m	300
102	Install 2.5mm ² , PVC insulated earth conductor	m	300
103	Supply 2.5mm ² , bare copper earth conductor	m	2,800
104	Install 2.5mm ² , bare copper earth conductor	m	2,800
<u>Surfix cabling</u>			
<u>Switches and sockets</u>			
<u>6A Unswitched sockets</u>			
105	Mounted on 60mm round box, c/w cover plate	No	420
<u>16A Light switches, c/w standard steel cover plate</u>			
106	Single lever, 1 way	No	16
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120	Install type R1	No	142	
121	Install type DR1	No	22	
122	Install type ER1	No	34	
123	Install type B1	No	24	
124	Install type EB1	No	14	
125	Install type S1	No	14	
126	Install type S2	No	2	
127	Install type S3	No	4	
	<u>Recessed downlights</u>			
128	Supply type RD1, Round recessed LED downlight, 20W, 1700lm	No	66	
129	Supply type RD2, Round recessed LED downlight, 12W, 955lm	No	16	
130	Supply type RD3, Round recessed LED downlight, 12W, 955lm	No	35	
131	Supply type RD4, Round recessed LED downlight, 18W, 1700lm	No	26	
132	Supply type ERD1. As per type RD1, but with self-test battery back-up	No	37	
133	Supply type ERD2. As per type RD2, but with self-test battery back-up	No	2	
134	Supply type ERD3. As per type RD3, but with self-test battery back-up	No	13	
135	Supply type ERD4. As per type RD4, but with self-test battery back-up	No	26	
136	Install type RD1	No	66	
137	Install type RD2	No	16	
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138	Install type RD3	No	35
139	Install type RD4	No	26
140	Install type ERD1	No	37
141	Install type ERD2	No	2
142	Install type ERD3	No	13
143	Install type ERD4	No	26

SMALL POWER INSTALLATION

Conduit incl. all fixing materials, bends, terminations and draw and extension boxes

Conduit built into / cast into or chased into brickwork, concrete or drywall

144	Supply 25mm diameter, PVC	m	360
145	Install 25mm diameter, PVC	m	360
146	Supply 32mm diameter, PVC	m	320
147	Install 32mm diameter, PVC	m	320

Surface mounted conduit

148	Supply 25mm diameter, PVC	m	140
149	Install 25mm diameter, PVC	m	140

Conduit outlet boxes

Boxes built/cast into walls or concrete

150	100 x 100 x 50mm, galvanised box	No	80
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Surface mounted boxes

151	100 x 100 x 50mm, powder coated steel box	No	38
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Wiring

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<u>Copper conductors</u>					
152	Supply 4mm ² , PVC insulated conductor	m	10,500		
153	Install 4mm ² , PVC insulated conductor	m	10,500		
154	Supply 4mm ² , PVC insulated earth conductor	m	2,500		
155	Install 4mm ² , PVC insulated earth conductor	m	2,500		
156	Supply 4mm ² , bare copper earth conductor	m	2,800		
157	Install 4mm ² , bare copper earth conductor	m	2,800		
<u>Power skirting fittings</u>					
<u>Two compartment</u>					
158	Supply power coated steel, power skirting, c/w cover	m	300		
159	Install power coated steel, power skirting, c/w cover	m	300		
<u>Two compartment fittings</u>					
160	Supply powder coated internal/external elbow	No	10		
161	Install powder coated internal/external elbow	No	10		
162	Supply powder coated flat T-piece	No	14		
163	Install powder coated flat T-piece	No	14		
164	Supply powder coated end cap	No	40		
165	Install powder coated end cap	No	40		
<u>Floorboxes/pedestals</u>					
<u>Floor pedestal, complete with conduit box</u>					
166	Supply Terminal Box for cable reticulation in floor	No	9		
167	Install Terminal Box for cable reticulation in floor	No	9		
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168	Supply rectangular Floor Box WB 1 with 1 x dedicated SSO, 1 x normal SSO, 1 x Euro socket, 1 x data socket & 1 x HDMI socket	No	12	
169	Install rectangular Floor Box WB1 with 1 x dedicated SSO, 1 x normal SSO, 1 x Euro socket, 1 x data socket & 1 x HDMI socket	No	12	
170	Supply rectangular Floor Box WB 2 with 1 x dedicated SSO, 1 x normal SSO, 1 x Euro socket, 1 x data socket	No	1	
171	Install rectangular Floor Box WB2 with 1 x dedicated SSO, 1 x normal SSO, 1 x Euro socket, 1 x data socket	No	1	
<u>Socket outlets</u>				
<u>Flush mounted, c/w powder coated steel cover plate</u>				
172	Standard + 3 pin Euro, switched	No	30	
173	Single dedicate red switched outlet (Flat earth pin)	No	26	
<u>Power skirting, floorbox, pedestal, power pole, power panel mounted</u>				
174	Standard 3 pin, switched	No	197	
175	Dedicate red switched outlet (Flat earth pin)	No	174	
176	Single 3 pin Euro, switched	No	197	
<u>Isolators/Switch disconnectors</u>				
<u>Flush mounted, switch disconnector</u>				
177	20A, double pole	No	9	
<u>Surface mounted, switch disconnector</u>				
178	20A, double pole	No	6	
179	63A, double pole	No	4	
<u>Lockable Rotary Isolators (IP65)</u>				
180	20A, double pole	No	22	
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181	20A, triple pole	No	3		
182	63A, triple pole	No	2		
<u>BUDGETARY ALLOWANCE</u>					
<p>Budgetary Allowance means an amount included in the contract sum for work intended for execution by the contractor, the extent of which is identified but not detailed</p> <p>Budgetary allowances include the cost of Overheads, Preliminaries and Profit.</p> <p>Work for which budgetary allowances are provided will be measured and valued in accordance with the agreement and deducted in whole or in part if not required without any compensation for loss of profit on the said allowances.</p>					
183	Allow a budgetary allowance of R99,000 (Ninety Nine Thousand) for Lightning Protection			Item	
184	Contractor's/Subcontractor's percentage mark-up for attendance (includes for preliminaries, overheads and attendance) and profit on External lighting				%
185	Allow a budgetary allowance of R11,000 (Eleven Thousand) for Earthing of Mini-Substation			Item	
186	Contractor's/Subcontractor's percentage mark-up for attendance (includes for preliminaries, overheads and attendance) and profit on Gatehouse				%
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Section No. 5

ELECTRICAL INSTALLATION

Bill No. 1

Electrical Installation

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	<u>SECTION NO 6: MECHANICAL INSTALLATION</u>			
	<u>BILL NO 1</u>			
	<u>PRELIMINARIES AND GENERAL</u>			
	<u>SPECIAL CONDITIONS OF SUBCONTRACT AGREEMENT (SECTION C)</u> <u>(Refer Part C1.5)</u>			
	<u>Section 01: Definitions and Abbreviations</u>			
1	Section 02: General	Item		
2	Section 03: Drawings and Submissions	Item		
3	Section 04: Work provided by Others	Item		
4	Section 05: Compliance with Standards and Regulations	Item		
5	Section 06: Safety	Item		
6	Section 07: Hoisting and Rigging	Item		
7	Section 08: Year 2000 Compliance	Item		
8	Section 09: Programming	Item		
9	Section 10: Contract Management	Item		
10	Section 11: Organization and Staff of Subcontractor	Item		
11	Section 12: Protection Against Damage	Item		
12	Section 13: Access to Equipment and Systems	Item		
13	Section 14: Cleaning and Start-up	Item		
14	Section 15: Testing, Balancing, Commissioning, Operation of Plant and Handover	Item		
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15	Section 16: Guarantee (12 months guarantee from date of Practical Completion)	Item	
16	Section 17: Quality Management System, Testing and Inspection	Item	
17	Section 18: Operating and Maintenance Manuals	Item	
18	Section 19: One Year's Maintenance from date of Practical Completion	Item	
19	Section 20: Special Attendance	Item	
20	Section 21: Preparation of Pre-Start up Checklist	Item	
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Section No. 6 MECHANICAL INSTALLATION Bill No. 1 Preliminaries and General <u>COLLECTION</u> Total Brought Forward from Page No.				
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	<u>SECTION NO 6: MECHANICAL INSTALLATION</u>			
	<u>BILL NO 2</u>			
	<u>FRESH AIR</u>			
	<u>Ducting</u>			
	<u>Galvanised sheet metal ducting and fittings including supports and fixings</u>			
	<u>Refer to Part C3.3 Section 09.01</u>			
	<u>Galvanised sheet metal ducting supported in single volume space from trusses</u>			
21	GSM category 1 (< 750mm with semiperimeter < 1150mm)	m2	141	
22	GSM category 2 (< 750mm with semiperimeter > 1150mm)	m2		Rate Only
23	GSM category 3 (from 750mm to 1350mm)	m2	35	
24	GSM category 4 (from 1351mm to 2100mm)	m2		Rate Only
	<u>Extra over for fittings (bends, transformations, stop ends, shoes, square to rounds, take-offs, offsets)</u>			
	<u>Refer to Part C3.3 Section 09.01 & Part C3.3 Section 18.05.02</u>			
	<u>Galvanised sheet metal ducting bends</u>			
25	GSM duct bend, category 1	No	5	
26	GSM duct bend, category 2	No		Rate Only
27	GSM duct bend, category 3	No	5	
28	GSM duct bend, category 4	No		Rate Only
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29	GSM duct bend, Ø250mm	No	5	
<u>Galvanised sheet metal ducting transformations & offsets (Largest size)</u>				
30	GSM duct transformation, category 1	No	10	
31	GSM duct transformation, category 2	No		Rate Only
32	GSM duct transformation, category 3	No	1	
33	GSM duct transformation, category 4	No		Rate Only
<u>Galvanised sheet metal ducting shoe pieces</u>				
34	GSM duct stop end, category 1	No	2	
35	GSM duct stop end, category 2	No		Rate Only
36	GSM duct stop end, category 3	No		Rate Only
<u>Galvanised sheet metal ducting stop ends</u>				
37	GSM duct stop end, category 1	No	4	
38	GSM duct stop end, category 2	No		Rate Only
39	GSM duct stop end, category 3	No	1	
<u>Galvanised sheet metal ducting spigots</u>				
40	GSM duct spigot, 150mm diameter	No	10	
41	GSM duct spigot, 200mm diameter	No	10	
42	GSM duct spigot, 250mm diameter	No	10	
43	GSM duct spigot, 300mm diameter	No	2	
<u>Galvanised sheet metal ducting square to round transformations</u>				
44	GSM square to round, category 1	No	4	
45	GSM square to round, category 2	No		Rate Only
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58	Manual butterfly damper, Ø200mm, DA02	No	10
59	Manual butterfly damper, Ø250mm, DA03	No	10
60	Manual butterfly damper, Ø300mm, DA04	No	2
61	Manual OBD damper, 550mmx450mm, DA06	No	1
62	Manual OBD damper, 500mmx350mm, DA07	No	1

Terminals

Constant volume terminals (Supply, Installation and Commissioning)
Refer to Part C3.3 Sections 15.02.01-15.02.03

Supply air grilles

63	SAG, 300mm × 300mm c/w plenum box and Ø150mm spigot, FG01	No	3
64	SAG, 300mm × 300mm c/w plenum box and Ø200mm spigot, FG02	No	2
65	SAG, 300mm × 300mm c/w plenum box and Ø250mm spigot, FG03	No	4
66	SAG, 300mm × 300mm c/w plenum box and Ø300mm spigot, FG04	No	2
67	WL, 1200mmx1200mm, powder coated to match wall colour, WL01	No	1
68	Weather Louvre, 350mm × 350mm powder coated to colour code, WL02	No	1
69	Weather Louvre, 600mm × 300mm powder coated to colour code, WL03	No	2
70	Powder coating of grilles and diffusers to colour specified by Architect	No	23

Equipment

Fans

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<u>Refer to Part C3.3 Sections 08.01-08.06</u>			
<u>Supply and installation of adjustable pitch axial fans c/w anti-vibration mounts (spring type), channel supports, electrical connections, hoisting and rigging, commissioning etc.</u>			
71	Wall fan, Ø150mm c/w 0.05kW motor, FW01, 30 l/s	No	7
72	Tube fan, Ø315mm c/w 0.05kW motor, FT01, 280 l/s	No	2
73	Axial fan, Ø800mm c/w 1.55kW motor, FA01, 2396 l/s	No	1
<u>Variable speed drives</u>			
<u>Refer to Part C3.3 Section 09.05.03</u>			
<u>Note: The VSD must be IP54 rated. Using an IP20 rated drive in a IP54 enclosure is not acceptable</u>			
74	VSD, 1.5kW for FA01	No	1
<u>Air filter bank</u>			
<u>Refer to Part C3.3 Section 09.05.01</u>			
<u>Duct mounted filter bank c/w filter frame, filter elements and duct connections</u>			
75	Primary filter, filter bank, 1200mm × 1200mm, FB01	No	1
<u>Sound attenuators</u>			
<u>Refer to Part C3.3 Section 18.01</u>			
<u>Cylindrical</u>			
76	Cylindrical attenuators, Ø800mm 2D, c/w POD, SA01	No	2
77	Cylindrical attenuators, Ø800mm 1D, c/w POD, SA03	No	2
78	Square attenuator, 1500mmx900mmx2400mm, SA06	No	1
79	Cylindrical attenuators, Ø315mm 2D, c/w POD, SA04	No	4
<u>Ducting for Patch and Server Room exhausts</u>			
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Section No. 6

MECHANICAL INSTALLATION

Bill No. 2

Fresh Air

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	<u>SECTION NO 6: MECHANICAL INSTALLATION</u>			
	<u>BILL NO 3</u>			
	<u>TOILET EXTRACT</u>			
	<u>Ducting</u>			
	<u>Galvanised sheet metal ducting and fittings including supports and fixings</u>			
	<u>Refer to Part C3.3 Section 09.01</u>			
	<u>Galvanised sheet metal ducting supported in single volume space from trusses</u>			
83	GSM category 1 (< 750mm with semiperimeter < 1150mm)	m2	115	
84	GSM category 2 (< 750mm with semiperimeter > 1150mm)	m2		Rate Only
85	GSM category 3 (from 750mm to 1350mm)	m2		Rate Only
86	GSM category 4 (from 1351mm to 2100mm)	m2		Rate Only
	<u>Extra over for fittings (bends, transformations, stop ends, shoes, square to rounds, take-offs, offsets)</u>			
	<u>Refer to Part C3.3 Section 09.01 & Part C3.3 Section 18.05.02</u>			
	<u>Galvanised sheet metal ducting bends</u>			
87	GSM duct bend, category 1	No	8	
88	GSM duct bend, category 2	No		Rate Only
89	GSM duct bend, category 3	No		Rate Only
90	GSM duct bend, Ø200mm	No	4	
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 Construction of Building C & X
 Tender Bills of Quantities

91	GSM duct bend, Ø630mm	No	2	
	<u>Galvanised sheet metal ducting transformations & offsets (Largest size)</u>			
92	GSM duct transformation, category 1	No	7	
93	GSM duct transformation, category 2	No		Rate Only
94	GSM duct transformation, category 3	No		Rate Only
95	GSM duct transformation, category 4	No		Rate Only
	<u>Galvanised sheet metal ducting shoe pieces</u>			
96	GSM duct stop end, category 1	No	6	
97	GSM duct stop end, category 2	No		Rate Only
98	GSM duct stop end, category 3	No		Rate Only
	<u>Galvanised sheet metal ducting stop ends</u>			
99	GSM duct stop end, category 1	No	8	
100	GSM duct stop end, category 2	No		Rate Only
101	GSM duct stop end, category 3	No		Rate Only
	<u>Galvanised sheet metal ducting spigots</u>			
102	GSM duct spigot, 150mm diameter	No		Rate Only
103	GSM duct spigot, 200mm diameter	No	63	
104	GSM duct spigot, 250mm diameter	No		Rate Only
105	GSM duct spigot, 300mm diameter	No		Rate Only
	<u>Galvanised sheet metal ducting square to round transformations</u>			
106	GSM square to round, category 1	No	2	
107	GSM square to round, category 2	No		Rate Only
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108	GSM square to round, category 3	No		Rate Only
109	GSM square to round, category 4	No		Rate Only
<u>Galvanised sheet metal ducting discharge cowl</u>				
110	GSM duct discharge cowl Ø630 for FA02, c/w wire mesh screen	No	1	
111	GSM duct discharge cowl Ø710 for FA03	No	1	
<u>Spiral ducting</u>				
<u>Refer to Part C3.3 Section 09.01 & Part C3.3 Section 18.05.02</u>				
<u>uninsulated Spiral ducting</u>				
112	Uninsulated spiral ducting, Ø150mm	m		Rate Only
113	Uninsulated spiral ducting, Ø200mm	m	44	
114	Uninsulated spiral ducting, Ø250mm	m		Rate Only
115	Uninsulated spiral ducting, Ø300mm	m		Rate Only
<u>Flexible ducting</u>				
<u>Refer to Part C3.3 Section 09.01</u>				
<u>uninsulated flexible ducting c/w clamps (1500 mm long)</u>				
116	Uninsulated flexible ducting, Ø150mm	No		Rate Only
117	Uninsulated flexible ducting, Ø200mm	No	63	
118	Uninsulated flexible ducting, Ø250mm	No		Rate Only
119	Uninsulated flexible ducting, Ø300mm	No		Rate Only
<u>Canvas duct collars</u>				
<u>Refer to Part C3.3 Section 10.01</u>				
120	Flexible canvas collar, Ø630mm	No	2	
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121	Flexible canvas collar, Ø710mm	No	2	
<u>Dampers</u>				
<u>Refer to Part C3.3 Section 11.01</u>				
122	Manual butterfly damper, Ø150mm, DA01	No		Rate Only
123	Manual butterfly damper, Ø200mm, DA02	No		Rate Only
124	Manual butterfly damper, Ø250mm, DA03	No		Rate Only
125	Manual butterfly damper, Ø300mm, DA04	No		Rate Only
126	Manual OBD damper, 550mmx450mm, DA06	No	1	Rate Only
127	Manual OBD damper, 500mmx350mm, DA07	No	1	
<u>Terminals</u>				
<u>Constant volume terminals (Supply, Installation and Commissioning)</u>				
<u>Refer to Part C3.3 Sections 15.02.01-15.02.03</u>				
<u>Extract air grilles</u>				
128	EAG, Ø250mm disc valve with Ø200mm spigot, DV03	No	63	
<u>Door grilles</u>				
129	DG, 450mm x 450mm door grille, DG01	No	16	
130	WL, 600mmx600mm, powder coated to match wall colour, WL02	No	1	
<u>Equipment</u>				
<u>Fans</u>				
<u>Refer to Part C3.3 Sections 08.01-08.06</u>				
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Supply and installation of adjustable pitch axial fans c/w anti-vibration mounts (spring type), channel supports, electrical connections, hoisting and rigging, commissioning etc.

131	Axial fan, Ø630mm c/w 0.55kW motor, FA02, 850 l/s	No	1
132	Axial fan, Ø710mm c/w 1.1kW motor, FA03, 2220 l/s	No	1

Sound attenuators

Refer to Part C3.3 Section 18.01

Cylindrical

133	Cylindrical attenuators, Ø630mm 2D, c/w POD, SA02	No	2
134	Cylindrical attenuators, Ø630mm 2D, c/w POD, SA04	No	2
135	Cylindrical attenuators, Ø710mm 2D, c/w POD, SA05	No	2

Variable speed drives

Refer to Part C3.3 Section 09.05.03

Note: The VSD must be IP54 rated. Using an IP20 rated drive in a IP54 enclosure is not acceptable

136	VSD, 0.5fkW for FA02	No	1
137	VSD, 1.5fkW for FA01	No	1
138	VSD, 1.1fkW for FA03	No	1
139	VSD, 1.5fkW for FA01	No	1

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MECHANICAL INSTALLATION

Bill No. 3

Toilet Extract

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	<u>AIRCONDITIONING</u>			
	<u>Ducting</u>			
	<u>Galvanised sheet metal ducting and fittings including supports and fixings</u>			
	<u>Refer to Part C3.3 Section 09.01</u>			
	<u>Galvanised sheet metal ducting supported in single volume space from trusses</u>			
140	GSM category 1 (< 750mm with semiperimeter < 1150mm)	m2	120	
141	GSM category 2 (< 750mm with semiperimeter > 1150mm)	m2		Rate Only
142	GSM category 3 (from 750mm to 1350mm)	m2		Rate Only
143	GSM category 4 (from 1351mm to 2100mm)	m2		Rate Only
	<u>Extra over for fittings (bends, transformations, stop ends, shoes, square to rounds, take-offs, offsets)</u>			
	<u>Refer to Part C3.3 Section 09.01 & Part C3.3 Section 18.05.02</u>			
	<u>Galvanised sheet metal ducting bends</u>			
144	GSM duct bend, category 1	No		Rate Only
145	GSM duct bend, category 2	No		Rate Only
146	GSM duct bend, category 3	No		Rate Only
147	GSM duct bend, category 4	No		Rate Only
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<u>Galvanised sheet metal ducting transformations & offsets (Largest size)</u>			
148	GSM duct transformation, category 1	No	20
149	GSM duct transformation, category 2	No	Rate Only
150	GSM duct transformation, category 3	No	Rate Only
151	GSM duct transformation, category 4	No	Rate Only
<u>Galvanised sheet metal ducting shoe pieces</u>			
152	GSM duct stop end, category 1	No	Rate Only
153	GSM duct stop end, category 2	No	Rate Only
154	GSM duct stop end, category 3	No	Rate Only
<u>Galvanised sheet metal ducting stop ends</u>			
155	GSM duct stop end, category 1	No	8
156	GSM duct stop end, category 2	No	Rate Only
157	GSM duct stop end, category 3	No	Rate Only
<u>Galvanised sheet metal ducting spigots</u>			
158	GSM duct spigot, 150mm diameter	No	Rate Only
159	GSM duct spigot, 200mm diameter	No	16
160	GSM duct spigot, 250mm diameter	No	16
161	GSM duct spigot, 300mm diameter	No	Rate Only
<u>Galvanised sheet metal ducting square to round transformations</u>			
162	GSM square to round, category 1	No	Rate Only
163	GSM square to round, category 2	No	Rate Only
164	GSM square to round, category 3	No	Rate Only
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Dampers

Refer to Part C3.3 Section 11.01

Manual butterfly dampers

177	Manual butterfly damper, Ø150mm, DA01	No			Rate Only
178	Manual butterfly damper, Ø200mm, DA02	No			Rate Only
179	Manual butterfly damper, Ø250mm, DA03	No			Rate Only
180	Manual butterfly damper, Ø300mm, DA04	No			Rate Only

Duct insulation

Refer to Part C3.2 Section 04 for specifications

External duct insulation

181	External duct insulation	m2	105		
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Terminals

Constant volume terminals (Supply, Installation and Commissioning)

Refer to Part C3.3 Sections 15.02.01-15.02.03

Supply air grilles

182	SAG, 600mm x 600mm swirl diffuser with Ø150mm neck, CVS01	No			Rate Only
183	SAG, 600mm x 600mm swirl diffuser with Ø200mm neck, CVS02	No	16		
184	SAG, 600mm x 600mm swirl diffuser with Ø250mm neck, CVS03	No	16		
185	SAG, 600mm x 600mm swirl diffuser with Ø300mm neck, CVS04	No			Rate Only

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	<u>Return air grilles</u>				
186	RAG, 600mm x 1200mm RAG c/w GSM plenum box, 2off Ø300mm and 1off Ø250mm spigots, RG01	No	6		
	<u>Piping</u>				
	<u>Refrigerant copper piping including supports, fixings, bends and insulation.</u>				
	<u>Refer to Part C3.2 Section 4 & Part C3.3 Section 09.04</u>				
	<u>Refrigerant copper piping c/w insulation supported in single volume space</u>				
187	Refrigerant copper Ø6mm soft drawn straight pipe	m	95		
188	Refrigerant copper Ø10mm soft drawn straight pipe	m	144		
189	Refrigerant copper Ø13mm soft drawn straight pipe	m	150		
190	Refrigerant copper Ø16mm soft drawn straight pipe	m	189		
191	Refrigerant copper Ø19mm soft drawn straight pipe	m	49		
192	Refrigerant copper Ø22mm soft drawn straight pipe c/w couplings	m	35		
193	Refrigerant copper Ø29mm soft drawn straight pipe c/w couplings	m	136		
194	Refrigerant copper Ø35mm soft drawn straight pipe c/w couplings	m	28		
195	Refrigerant copper Ø41mm soft drawn straight pipe c/w couplings	m	7		
	<u>Extra over for refrigerant copper pipe fittings</u>				
	<u>Refrigerant copper pipe bends c/w insulation. Note: Bends less than or equal to Ø16mm are to be included in piping linear rate</u>				
196	Refrigerant Ø19mm pipe bend	No	2		
197	Refrigerant Ø22mm pipe bend	No	2		
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198	Refrigerant Ø29mm pipe bend	No	8	
199	Refrigerant Ø35mm pipe bend	No	4	
200	Refrigerant Ø41mm pipe bend	No	2	
	<u>Refrigerant copper pipe branches (y-joints) c/w insulation</u>			
201	Refrigerant copper pipe branches to suit. Sizes to be confirmed by supplier upon system sizing	No	8	
202	Refrigerant copper pipe y-joints to suit. Sizes to be confirmed by supplier upon system sizing	No	14	
	<u>Refrigerant cable trays and fittings including supports and fixings</u>			
	<u>Refer to Part C3.2 Section 4 & Part C3.3 Section 09.04</u>			
	<u>Supply, deliver and installation of heavy duty cable trays supported in single volume space c/w brackets and supports, all of which will be galvanised</u>			
203	50mm Perforated metal cable tray	m		Rate Only
204	100mm Perforated metal cable tray	m		Rate Only
205	150mm Perforated metal cable tray	m	119	
206	200mm Perforated metal cable tray	m		Rate Only
207	250mm Perforated metal cable tray	m	54	
208	300mm Perforated metal cable tray	m	90	
209	400mm Perforated metal cable tray	m	42	
210	500mm Perforated metal cable tray	m	25	Rate Only
211	600mm Perforated metal cable tray	m	15	
	<u>Extra over for supply, deliver and installation of heavy duty cable tray covers</u>			
212	50mm Perforated metal cable tray	m	25	
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213	400mm Perforated metal cable tray	m	5	
214	100mm Perforated metal cable tray	m	25	
215	150mm Perforated metal cable tray	m	25	
216	600mm Perforated metal cable tray	m	6	
	<u>uPVC piping and ancillaries including supports and fittings</u>			
	<u>uPVC piping supported in single volume from trusses</u>			
217	uPVC Ø32mm straight pipe, insulated	m	54	
	<u>Extra over for uPVC pipe fittings</u>			
218	uPVC Ø32mm fittings, insulated	No	136	
	<u>Equipment</u>			
	<u>Variable Refrigerant Flow (VRF) units</u>			
	<u>VRF unit supply and installation, including: Supports & brackets etc. Duct connections, Controls & electrical connections, Drain pipe connections, Wired wall mounted controller</u>			
	<u>Refer to Part C3.3 Section 14.02</u>			
219	VRF cassette 4 way blow, VRFCU4-3.6, 3.6kW	No	3	
220	VRF cassette 4 way blow, VRFCU4-4.5, 4.5kW	No	4	
221	VRF cassette 4 way blow, VRFCU4-5.6, 5.6kW	No	2	
222	VRF cassette 4 way blow, VRFCU4-9.0, 9.0kW	No	2	
223	VRF cassette 4 way blow, VRFCU4-11.2, 11.2kW	No	5	
224	VRF cassette 4 way blow, VRFCU4-12.8, 12.8kW	No	8	
225	VRF cassette 4 way blow, VRFCU4-14.0, 14.0kW	No	1	
226	VRF hideaway unit, VRFHU-16.0-M, 16.0kW medium static	No	6	
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227	VRF midwall unit, VRFMU-2.8, 2.8kW	No	1	
228	VRF 4 port refrigerant junction box	No	2	
229	VRF 6 port refrigerant junction box	No	2	
230	Heat recovery VRF outdoor condenserunits, VRFOU-61.6-HR, 61.6kW	No	2	
231	Heat pump VRF outdoor condenserunits, VRFOU-50.4-HP, 50.4kW	No	4	
232	Heat pump VRF outdoor condenserunits, VRFOU-56.0-HP, 56.1kW	No	2	
233	Additional refrigerant charge. Supplier to confirm amount	No	2	
234	Additional refrigerant charge for outdoor condenser units, VRFOU-61.6-HR.	No	4	
235	Additional refrigerant charge for outdoor condenser units, VRFOU-50.4-HP	No	2	
	<u>Off-loading, rigging and hoisting of each VRF condenser unit into its final position</u>			
236	Heat recovery VRF outdoor condenserunits, VRFOU-61.6-HR, 61.6kW	No	2	
237	Heat pump VRF outdoor condenserunits, VRFOU-50.4-HP, 50.4kW	No	2	
238	Heat pump VRF outdoor condenserunits, VRFOU-56.0-HP, 56.1kW	No	2	
	<u>Control cabling between VRF outdoor and associated indoor units</u>			
239	Control cabling between outdoor and indoor units	m	285	
	<u>Split units</u>			
	<u>Refer to Part C3.3 Section 14.02</u>			
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	<u>Split unit supply and installation, including: Electrical connections c/w isolator at indoor unit Drain pipe connections Indoor & outdoor units Wired wall mounted controller, commissioning, gas included.</u>			
	<u>Inverter type midwall split unit c/w indoor and outdoor units</u>			
240	Inverter type midwall split unit c/w indoor and outdoor unit, SMU-3.5, 3.5 kW	No	2	
241	Inverter type midwall split unit c/w indoor and outdoor unit, SMU-4.5, 4.5 kW	No	2	
242	Power & control cabling between split outdoor and indoor units Power & control cabling between indoor and outdoor split units	m	34	
	<u>Split unit piping</u>			
243	Central Controller for VRF system	No	4	
	<u>Refrigerant copper piping including supports, fixings, bends and insulation.</u>			
	<u>Refer to Part C3.2 Section 4 & Part C3.3 Section 09.04</u>			
	<u>Refrigerant copper piping c/w insulation supported in single volume space</u>			
244	Refrigerant copper piping for SMU-3.5 soft drawn straight pipe	m	17	
245	Refrigerant copper piping for SMU-4.5 soft drawn straight pipe	m	17	
	<u>Refrigerant cable trays and fittings including supports and fixings</u>			
	<u>Refer to Part C3.2 Section 4 & Part C3.3 Section 09.04 Supply, deliver and installation of heavy duty cable trays supported in single volume space c/w brackets and supports, all of which will be galvanised</u>			
246	100mm Perforated metal cable tray c/w covers	m	17	
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247 Stainless Steel emergency drip trays, insulated at the bottom to prevent condensation droplets on the bottom surface

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Section No. 6

MECHANICAL INSTALLATION

Bill No. 4

Air Conditioning

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Section No. 6

MECHANICAL INSTALLATION

SECTION SUMMARY - MECHANICAL INSTALLATION

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2	Fresh Air	153	
3	Toilet Extract	159	
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	<p><u>SECTION NO 7: FIRE DETECTIONS</u></p> <p><u>BILL NO 1</u></p> <p><u>PRELIMINARIES AND GENERAL</u></p> <p><u>PREAMBLES AND SPECIAL CONDITIONS</u></p> <p>Note 1 Principal building agreement</p> <p>The agreement entered into between the employer and the contractor is the July 2007 (Code 2101) Principal Building Agreement prepared by the Joint Building Contracts Committee and recommended by the JBCC Constituents, as amplified and amended by:</p> <p>1.1 The July 2007 (Code 2103) JBCC Preliminaries.</p> <p>1.2 SANS 10400 Part T and W, SANS 10139</p> <p>1.3 The bills of quantities.</p> <p>1.4 Such other documents as are identified in the schedule to</p> <p style="padding-left: 40px;">the agreement.</p> <p>(The documents referred to in Note 1 above and comprising the principal building agreement, the preliminaries, the bills of quantities, and such other documents as are identified in the schedule shall collectively be referred to as the principal agreement)</p> <p>Note 2</p> <p>Nominated/selected subcontract agreement.</p> <p>The selected subcontract agreement to be entered into between the contractor and the subcontractor shall be referred to as the N/S agreement and shall:</p> <p>2.1 not conflict with any of the provisions of the principal agreement as defined in Note 1 above; and</p>			
	<p>Section No. 7 Bill No. 1</p>		R	

2.2 conform to and incorporate the July 2007 (Code 2102)
 Nominated/Selected Subcontract Agreement prepared by the Joint Building Contracts Committee as amplified and/or amended by:

2.2.1 these preliminaries;

2.2.2 the N/S contract documents as defined in clause 1

of the N/S agreement.

Note 3

In the event of a conflict between any provision contained in these preliminaries on the one hand and any provision contained in the N/S agreement on the other hand, the relevant provisions of these preliminaries shall prevail.

SPECIAL CONDITIONS OF CONTRACT (Refer to Part C1.5 AND C2.3)

1	Clause 1.0: Definitions and interpretations	SUM
2	Clause 2.0: General	SUM
3	Clause 3.0: Drawings and Submissions	SUM
4	Clause 4.0: Work provided by others	SUM
5	Clause 5.0: Compliance with Regulations	SUM
6	Clause 6.0: Health and Safety	SUM
7	Clause 7.0: Hoisting and Rigging	SUM
8	Clause 8.0: Materials and Workmanship	SUM
9	Clause 9.0: Programming	SUM
10	Clause 10.0: Contract Management	SUM
11	Clause 11.0: Organisation and staff of sub-contractor	SUM
12	Clause 12.0: Protection against Damage	SUM

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 Bill No. 1

13	Clause 13.0: Access to Equipment and Systems		SUM	
14	Clause 14.0: Testing, Balancing, Commissioning, Operating of Plant & Handover		SUM	
15	Clause 15.0: Guarantee		SUM	
16	Clause 16.0: Quality Management System - Testing and Inspection		SUM	
17	Clause 17.0: Operating and Maintenance Manuals		SUM	
18	Clause 18.0: One Year's Maintenance		SUM	
19	Clause 19.0: Special Attendance		SUM	
20	Clause 20.0: Example Checklists		SUM	
21	Clause 21.0 Example Checklists		SUM	
22	Clause 22.0 Example Checklists		SUM	
<u>PROVISIONAL AMOUNTS FOR P&G</u>				
Provisional Amounts exclude the cost of Overheads, Preliminaries and Profit				
Tenderers are referred to Spoomaker & Partners' General Technical Specification (Part IV) and Project Technical Specification (Part V.1) for the following Additional Preliminaries:				
23	Operating and Maintenance Manuals (Part IV Section 16)	Item		
24	"As Built" Drawings (Part IV Section 16 and Part V.1 Section 2)	Item		
25	Testing and Commissioning (Part V.1 Section 9)		SUM	
26	Equipment Submissions (Part IV Section 16 and Part V.1 Section 2)		SUM	
27	1 - Year Maintenance and Guarantee (Part IV Section 13).		SUM	
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28	Operator Training		SUM	
29	Labels Graflux		SUM	
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 FIRE DETECTION
 Bill No. 1
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 7: FIRE DETECTIONS</u>			
	<u>BILL NO 2</u>			
	<u>PUMPS & TANKS</u>			
	The mechanical contractor shall provide, all the necessary labor and accessories to manufacture, and install the following in accordance with the relevant section within the mechanical specification and applicable standard.			
	Sprinkler reticulation to be in accordance with SANS10400-T, SANS10252, SANS 10287 & FM			
	12 months maintenance			
	12 months guarantee			
	Attendance during commissioning			
	<u>Suction tank</u>			
30	Butterfly valve, gear driven, 250mm	Item		
31	Butterfly valve, gear driven, 150mm	Item		
32	Butterfly valve, gear driven, 100mm	Item		
33	Galvanized steel sectional water storage tank divided in two equal sections - 150m ³ total effective capacity	Item		
34	Tank-infill water level control valve, 100mm	Item		
35	Vortex inhibitor, 200mm flanged fitting, galvanized	Item		
36	Mechanically water level indicators, complete with floats, cables, pulleys and level signage.	Item		
	<u>Plant room ventilation</u>			
37	Exhaust fan similar or equal to AMS compact wall mounted model HCBT/6 - 710	Item		
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	Bill No. 2			

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 FIRE DETECTION
 Bill No. 2
 Pump & Tanks
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 Bill No. 2

Item No		Quantity	Rate	Amount
<u>SECTION NO 7: FIRE DETECTIONS</u>				
<u>BILL NO 3</u>				
<u>FIRE SIGNAGE</u>				
The mechanical contractor shall provide, all the necessary labor and accessories to manufacture, and install the following in accordance with the relevant section within the mechanical specification and applicable standard.				
Signage to be in accordance with SANS 101186 & SANS10140				
12 months maintenance				
12 months guarantee				
Attendance during commissioning				
<u>Signage</u>				
121	Boosting connection signage	No	1	
122	Suction hydrant signage	No	1	
123	Provisional ammount specialized pipe contents signage	No		Rate Only
124	GA & FB, double sided, photoluminescent, 190mm x 380mm, suspended, aluminum framed	No	12	
125	GA & FB, single sided, photoluminescent, 190mm x 380mm, wall mounted	No	50	
126	GA & FB, single sided, Chromodek, 190mm x 760mm, wall mounted	No		Rate Only
127	GA & FB, single sided, Chromodek, 190mm x 760mm, Pole mounted	No		Rate Only
128	A3 Size of hose reel block plan of risks shall be plastic laminated and mounted at each ICV chamber.	No		Rate Only
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129	A0 Size of complete fire protection system schematic shall be plastic laminated and mounted inside the valve chamber.	No		Rate Only
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 FIRE DETECTION
 Bill No. 3
 Signages
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 Bill No. 3

Item No	Quantity	Rate	Amount
<u>SECTION NO 7: FIRE DETECTIONS</u>			
<u>BILL NO 4</u>			
<u>HYDRANT AND HOSE REEL INSTALLATION</u>			
<u>Delivery and installation on site</u>			
	Water reticulation to be in accordance with SANS 10400 Part W		
	Water reticulation to be in accordance with SANS 10252		
	Hydrants to be in accordance with SANS 1128-1 & 2		
	Hose reels shall be install accordance with SANS 10105-1 and shall comply with the requirements as setout in SANS543		
	The mechanical contractor shall provide, all the necessary labor and accessories to manufacture, and install the following in accordance with the relevant section within the mechanical specification and applicable standard.		
	12 months maintenance		
	12 months guarantee		
	Attendance during commissioning		
	Complete installation of supply piping, fittings, carbon steel, including hangers, brackets, painting, rigging, hoisting etc.		
	<u>Hydrant, brass, single lug, flanged with dofemale instantaneous connection</u>		
133	Fire hydrant, conventional 65mm	Item	
134	Fire hydrant, Storz 100 mm	Item	
135	Fire hydrant hoses, nozzle and storage cabinet	Item	Rate Only
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136	All preparation and paintwork to new hydrant and hosereel system installation 25 - 250 mm piping			Item	
	<u>Hose reel, wall mounted with bracket and hose guide and 30m hose (25mm diameter). Complete with 25mm diameter BSP CP Valve. Disk diameter to be no more than 580mm in diameter and wall projection to be no more than 300mm.</u>				
137	Fire hose reel complete, 30m red UPVC hose, aluminium nozzle			Item	
138	Fire hose reel storage cabinets			Item	Rate Only
<u>FIRE HYDRANT AND HOSE REEL PIPING</u>					
<u>Complete installation of main supply piping, carbon steel, including hangers, brackets, painting, rigging, hoisting etc.</u>					
<u>All Floors</u>					
139	ø25 mm	m	100		
140	ø50 mm	m			Rate Only
141	ø65 mm	m			Rate Only
142	ø80 mm	m	10		
143	ø100 mm	m	50		
144	ø150 mm	m			Rate Only
<u>All Floors</u>					
145	ø25 mm Elbow			Item	
146	ø50 mm Elbow			Item	Rate Only
147	ø65 mm Elbow			Item	Rate Only
148	ø80 mm Elbow			Item	
149	ø100 mm Elbow			Item	
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Tender No: RFP272/2022
Letaba TVET College: Giyani Campus
Construction of Building C & X
Tender Bills of Quantities

168	Denso tape wrapped on the 150 mm piping		Item	Rate Only
169	Flow and pressure test		Item	
170	Trenching, backfill and compacting of ground	m		Rate Only
171	Hydraulic calculations and calculation drawings, complete for Hydrant & Hose reel system		Item	Rate Only
172	Coordination		Item	

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FIRE DETECTION

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Hydrant & Hose Reels

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	<u>SECTION NO 7: FIRE DETECTIONS</u>			
	<u>BILL NO 5</u>			
	<u>CONTROL AND COMMUNICATION</u>			
	<u>Supply and installation of addressable, Class L1 fire detection system to Ziton or similar</u>			
	<u>Control Panel</u>			
	<u>Supply and installation of control panel, including backup power supply battery, isolator, mounting brackets etc.</u>			
173	Fire alarm control panel with 2 loops expandable to 4 loops, complete	No	2	
174	Mimic fire alarm control panel	No	1	
	<u>Cabling and Terminations</u>			
	<u>Fire retardent cable (PH30) installed in conduit (measured elsewhere) for field wiring to detectors and other devices as specified under clause 3.2 of the standard specification, including terminations. Cable shall be 1,5 sq mm. 30min Resistant</u>			
175	Supply & Install	m	1,500	
	<u>LINE DEVICES</u>			
	<u>Optical smoke detectors</u>			
	<u>Supply and installation of addressable, optical smoke detectors, complete with base surface mounted to slab or ceiling as indicated on the drawings and specifications</u>			
	Note: Ceiling Void Detection to have LED indication installed below detector/sensor in ceiling tile.			
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183	<u>Sounder strobe combination</u> All Floors	No	15	
	<u>Supply and installation of surface mounted red strobe unit complete with base as indicated on the drawings and specifications</u>			
184	<u>Strobe only</u> All Floors	No		Rate Only
	<u>Beam Detection</u> Supply and installation of beam detection, including backup power supply battery, isolator, relays, mounting brackets and all other required accessories etc.			
185	Optical beam detector (transmit & receiver) smoke detection	No		Rate Only
	<u>INTERFACE, MONITOR AND CONTROL</u> <u>Input/Output module</u> <u>Supply and installation of addressable low voltage relay modules for control of the HVAC & Smoke Extraction systems, Sprinkler Flow Switches, Fire Doors, etc.</u> Control Modules shall be mounted in a surface mounted panel with door and catch, as shown on the drawings and specifications.			
186	<u>Inupt/Output Relay</u> All Floors	No	10	
	<u>Door auxilliary</u> <u>Supply and installation of maglocks, pushbars or hold open magnets as shown on the drawings and stipulated in the specifications</u>			
187	<u>Magnet Hold-open device</u> All Floors	No		Rate Only
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CONDIUT, WIREWAYS & ACCESSORIES

Supply to and installation by the Electrical contractor

Conduit as specified under clause 3.3 of the standard specification including bending, jointing, short lengths, draw boxes, expansion joints, adaptors, round coverplates with chrome screwsbends and conduit ends which are to be allowed for in the conduit per meter rate.

25mm dia PVC conduit built or chased into brick walls

188	Supply	m		rate only
189	Install	m		rate only

25mm dia PVC with galvanised saddles on surface against underside of the concrete slab or against brick walls

190	Supply	m	1,500	
191	Install	m	1,500	

25mm dia Galvanize/ Bosal Conduits on surface against underside of the concrete slab or against brick walls

192	Supply	m		rate only
193	Install	m		rate only

Wiring trunking

76 x 76mm galvanised wiring trunking fixed to the wall as specified under clause 3.3. of the standard specification.

194	Supply	m		rate only
195	Install	m		rate only

76 x 76mm galvanised wiring trunking suspended from the roof slab complete with hangers at 1,5m intervals

196	Supply	m		rate only
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197	Install <u>Draw Wire - Supply and Install by Electrical Contractor</u> <u>Galvanised draw wire installed in conduits.</u>	m			rate only
198	Supply	m			rate only
199	Install	m			rate only
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 Smoke Detection
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FIRE DETECTION

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7	FIRE DETECTION	199		
	SUB TOTAL		R	
	<u>ADD: ESCALATION</u>			
	ADD : The Contract Sum will not be adjusted in terms of the Contract Price Adjustment Provisions (CPAP) as stated in clause 32.13, but will be fixed for the duration of the project. Tenderers are to price for any compensation required to cover this change to the Conditions of Contract.			
		Item		2,154,000.00
	SUB TOTAL		R	
	<u>ADD: CONTINGENCIES</u>			
	Contingencies			
		Item		4,338,613.68
	SUB TOTAL BEFORE VAT		R	
	<u>ADD: VALUE ADDED TAX</u>			
	Value Added Tax (15%)		R	
	TENDER SUM CARRIED FORWARD TO FORM OF OFFER AND ACCEPTANCE		R	
	Carried to Form of Tender		R	