

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	Quantity	Rate	Amount
<u>SECTION NO.1</u>			
<u>PRELIMINARIES</u>			
<u>NOTES</u>			
<p>The agreement is to be the JBCC Series 2000 Principal Building Agreement prepared by the Joint Building Contracts Committee, Edition 4.1, March 2005.</p> <p>The preliminaries are to be the JBCC Series 2000 Preliminaries prepared by the Joint Building Contracts Committee, code 2103, May 2005, and shall be deemed to be incorporated herein.</p> <p>Tenderers are referred to the above mentioned documents for the full intent and meaning of each clause thereof (hereinafter referred to by heading and clause number only) for which such allowance must be made as may be considered necessary.</p> <p>Where standard clauses or alternatives are not entirely applicable to this contract, such modifications, corrections or supplements as will apply are given under each relevant clause heading.</p> <p>Where any item is not relevant to this specific contract, such item is marked N/A (signifying "Not Applicable").</p> <p>If Alternative A as set out in clause 10.2 & 3 hereinafter is to be used for the adjustment of the preliminaries, the preliminaries, each item priced is to be allocated to one or more of the three categories by insertion of "F", "V", "T" as the case may be against the price in the "rate" column immediately preceding the "amount" column the tendered amount for the Preliminaries must be allocated to one or more of the following three categories where : "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value, and "T" denotes an amount proportionate to time.</p>			
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**SECTION A: PRINCIPAL BUILDING
AGREEMENT**

Definitions (A1)

1 Definitions and interpretation (Clause 1).

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

T:.....

Item

Objective (A2)

2 Offer and acceptance and performance (Clause 2).

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

T:.....

Item

Preparation (A3 - A14)

3 Documents (Clause 3).

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

T:.....

Item

4 Design responsibility (Clause 4).

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

T:.....

Item

5 Employer's agents (Clause 5).

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

T:.....

Item

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Section No. 1

Preliminaries

Bill No. 1

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6	<p>Site representative (Clause 6).</p> <p>Prior to the award of the contract, tenderers shall submit, upon request, the names of the proposed senior management personnel to be responsible for the supervision and administration of the works.</p> <p>Prior to the date of commencement of the works the contractor shall nominate senior site personnel to whom instructions may be issued.</p> <p>F:.....V:..... T:.....</p>	Item			
7	<p>Compliance with regulation (Clause 7).</p> <p>A Health and Safety bills of quantities is attached for pricing in Section No. 13. Health and Safety Specifications attached in Annexure C for reference.</p> <p>F:.....V:..... T:.....</p>	Item			
8	<p>Works risk (Clause 8).</p>	Item			
9	<p>Indemnities (Clause 9).</p> <p>F:.....V:..... T:.....</p>	Item			
10	<p>Works insurances (Clause 10).</p> <p>F:.....V:..... T:.....</p>	Item			
11	<p>Liability insurances (Clause 11).</p> <p>F:.....V:..... T:.....</p>	Item			
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12	Effecting insurances (Clause 12). F:.....V:..... T:.....	Item		
13	No Clause (Clause 13). F:.....V:..... T:.....	Item		
14	Security (Clause 14). F:.....V:..... T:.....	Item		
Execution (A15 - A23)				
15	Preparation for and execution of the works (Clause 15). F:.....V:..... T:.....	Item		
16	Access to the works (Clause 16). F:.....V:..... T:.....	Item		
17	Contract instructions (Clause 17). F:.....V:..... T:.....	Item		
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18	<p>Setting out of the works (Clause 18).</p> <p>The contractor shall notify the Architect if any encroachments of adjoining foundations, buildings, structures, pavements, boundaries, etc., exist in order that the necessary arrangements may be made for the rectification of any such encroachments.</p> <p>F:.....V:..... T:.....</p>	Item		
19	<p>Assignment (Clause 19).</p> <p>F:.....V:..... T:.....</p>	Item		
20	<p>Nominated subcontractors (Clause 20).</p> <p>F:.....V:..... T:.....</p>	Item		
21	<p>Selected subcontractors (Clause 21).</p> <p>F:.....V:..... T:.....</p>	Item		
22	<p>Employer's direct contractors (Clause 22).</p> <p>F:.....V:..... T:.....</p>	Item		
23	<p>Contractor's domestic subcontractors (Clause 23).</p> <p>F:.....V:..... T:.....</p>	Item		
	<u>Completion (A24- A30)</u>			
24	<p>Practical completion (Clause 24).</p> <p>F:.....V:..... T:.....</p>	Item		
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25	Works completion (Clause 25). F:.....V:..... T:.....	Item		
26	Final completion (Clause 26). F:.....V:..... T:.....	Item		
27	Latent defects liability period (Clause 27). F:.....V:..... T:.....	Item		
28	Sectional completion (Clause 28). F:.....V:..... T:.....	Item		
29	Revision for date of practical completion (Clause 29). F:.....V:..... T:.....	Item		
30	Penalty for non-completion (Clause 30). F:.....V:..... T:.....	Item		
Payment (A31 - A35)				
31	Interim payment to the contractor (Clause 31). Notwithstanding this or any other clause, materials and goods stored off site shall not be included in the amount authorised for payment. Clause 31.6.5 shall be deemed to be deleted. F:.....V:..... T:.....	Item		
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32	<p>Adjustment to the contract value (Clause 32).</p> <p>Notwithstanding the provisions of clause 32.13 or any other clause, all fluctuations in costs shall be for the account of the contractor. See also clause 42.4.6.</p> <p>F:.....V:..... T:.....</p>	Item			
33	<p>Recovery of expense and loss (Clause 33).</p> <p>F:.....V:..... T:.....</p>	Item			
34	<p>Final account and final payment (Clause 34).</p> <p>F:.....V:..... T:.....</p>	Item			
35	<p>Payment to other parties (Clause 35).</p> <p>F:.....V:..... T:.....</p>	Item			
<u>Cancellation (A36 - A39)</u>					
36	<p>Cancellation by Employer - Contractor's default (Clause 36).</p> <p>F:.....V:..... T:.....</p>	Item			
37	<p>Cancellation by Employer - Loss and damage (Clause 37).</p> <p>F:.....V:..... T:.....</p>	Item			
38	<p>Cancellation by Contractor - Employer's default (Clause 38).</p> <p>F:.....V:..... T:.....</p>	Item			
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39	Cancellation - Cessation of the works (Clause 39). F:.....V:..... T:.....	Item		
	<u>Dispute (A40)</u>			
40	Dispute settlement (Clause 40). F:.....V:..... T:.....	Item		
	<u>State Provisions (A41)</u>			
41	State Substitutions (Clause 41). F:.....V:..... T:.....	Item		
	<u>Schedule (A42)</u>			
42	Pre-Tender information (Clause 42). F:.....V:..... T:.....	Item		
	<u>CONTRACTING AND OTHER PARTIES</u>			
42.1.1	Employer: Department of Public works and Infrastructure, Free State Province			
	Postal Address: P.O. Box 690, Bloemfontein, 9300.			
	Telephone: 051 403 7857 e-mail: lesibem@fsworks.gov.za			
	Domicilium: Room 203, Salga House c/o Nelson Mandela Drive & East Burger Street Bloemfontein 9300			
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42.1.2 Agent's Service: Project Manager

Agent (1): E'tsho Civils (Pty) Ltd

Postal Address: P.O.Box 38168
 Langenhovenpark
 9330

Telephone: 051 401 0300
 Fax: 051 451 2515
 e-mail: kabelo@etsho.co.za

42.1.3 Agent's service: Architects

Agent (2): A4 Advisory and Consulting

Postal Address: P.O.Box 3580
 Vereeniging, Gauteng
 1930

Telephone: 087 056 0100
 Facsimile: 016 422 0899

Email: yusufw@a4consulting.co.za

42.1.4 Agent's service: Quantity surveyors

Agent (3): Quantum Built and
 Environment Consultants
 (Pty) Ltd

Postal Address: P.O Box 37171
 Langenhoven Park
 9300

Telephone: 051 430 8240
 Facsimile: 051 430 8610

Email: siyasanga@quantumbuilt.co.za

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42.1.5 Agent's service: Civil Engineers

Agent (4): A4 Advisory and Consulting

Postal Address: P.O.Box 3580
Vereeniging, Gauteng
1930

Telephone: 087 056 0100
Facsimile: 016 422 0899

Email: quintusd@a4consulting.co.za

42.1.6 Agent's service: Structural engineer

Agent (5): A4 Advisory and Consulting

Postal Address: P.O.Box 3580
Vereeniging, Gauteng
1930

Telephone: 087 056 0100
Facsimile: 016 422 0899

Email: quintusd@a4consulting.co.za

42.1.7 Agent's service: Electrical engineer

Agent (6): A4 Advisory and Consulting

Postal Address: P.O.Box 3580
Vereeniging, Gauteng
1930

Telephone: 087 056 0100
Facsimile: 016 422 0899

Email: mohammeds@a4consulting.co.za

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42.1.8 Agent's service: Mechanical engineer

Agent (7): A4 Advisory and Consulting

Postal Address: P.O.Box 3580
Vereeniging, Gauteng
1930

Telephone: 087 056 0100
Facsimile: 016 422 0899

Email: nicholas@arquero.co.za

42.1.9 Agent's service: Health and safety

Agent (8): Canzibe Events & Projects (Pty) Ltd.

Postal Address: P.O Box 3777
Bloemfontein
9300

Telephone: 073 515 5002
E-mail: silvermiletrading@gmail.com

Domicilium: 26501 Moshoeshoe Road
Phahameng Location
Bloemfontein
9300

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

42.2 CONTRACT DETAILS

42.2.1 Works Description:

The works comprises of the Construction of Proposed new Dome Primary school in Parys complete with.:

- Hall,
- Tuck Shop,
- Administration Block,
- Multi purpose hall and Kitchen,
- 3 x Grade R Block,
- 24 x Classroom with HOD Offices,
- Learner's and Staff Ablutions,
- Covered Walkways Linking all Buildings,
- Store Rooms,
- Computer Laboratories/Media Centre,
- Science and Biology Laboratories,
- Guard House,
- Soccer Fields/Sports Fields,
- Uncovered Parking, and
- Soft Landscaping, Electrical Installation, Mechanical Installation and External Works.

42.2.2 Site Description :

The site is situated at ERF 836 portion 1 to 18 and remainder of ERF 835 Parys, Free Site Province.

42.2.3 Work or Installation by Direct Contractors:
(None)

42.2.4 This Agreement is for a State Contract : (Yes)

Payment will be made for materials and goods on site: (Yes)

Dispute resolution method (adjudication)

42.2.5 Contract period: 20 Calender months
including builder's holidays42.2.6 Period for the commencement of the works after
the contractor takes possession of the site: 7
working days.

42.2.7 Completions in sections are required: No

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42.2.8 Intended date of practical completion and the penalty per calendar day for the works as a whole:

Date: 20 Calendar months after contract commencement including builders holidays

Penalty: 1.5 cents per R100 of construction amount per Calendar Day.

Intended dates of practical completion where section completion is required and the penalty per calendar day for the works in sections: N/A

42.2.9 Adjudication rules as recommended by Construction Adjudication Association of South Africa (CAASA) : (Yes)

Law applicable: Republic of South Africa

42.3 INSURANCES

42.3.1 Contract works insurance to be effected by the :

CONTRACTOR

For the amount of: CONTRACT VALUE + 20%

With a deductible of: R 5 000.00

42.3.2 Supplementary insurance required (Yes)

42.3.3 Public liability insurance to be effected by the

CONTRACTOR

For the amount of: R 10 000 000.00

With a deductible of: R nil

42.4 DOCUMENTS

42.4.1 Waiver of the contractor's lien or right of continuing possession is required: (Yes)

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42.4.2	Number of construction document copies to be supplied free of charge: 3 (THREE)			
42.4.3	This document is drawn up in accordance with the ASAQs Standard System of Measuring Building Work: (YES) Sixth Edition, revision 2 2013.			
42.4.4	Number of days for submission of priced documents: Priced bills of quantities to be submitted with tender.			
42.4.5	JBCC Engineering General Conditions are to be included in the documents: (No)			
42.4.6	The contract value to be adjusted using CPAP: (YES)			
42.4.7	Details of changes made to the provisions of JBCC standard documentation: (As stated)			
<u>SECTION B: PRELIMINARIES</u>				
<u>Definitions (B1):</u>				
43	Definitions and interpretation (B1) F:.....V:..... T:.....	Item		
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<u>Documents (B2):</u>					
44	<p>Checking of documents (B2.1)</p> <p>These Bills of Quantities contain pages and annexures as indexed.</p> <p>The items in these Bills of Quantities are to be read and priced in conjunction with, and the descriptions regarded as amplified by the Model Preambles for Trades as recommended and published by the Association of South African Quantity Surveyors, 2008 edition, and no claim arising from brevity of description of items fully described in the said Model Preambles for Trades will be entertained.</p> <p>F:.....V:..... T:.....</p>	Item			
45	<p>Provisional Bills of Quantities (B2.2)</p> <p>The Quantities are Provisional (NO)</p> <p>F:.....V:..... T:.....</p>	Item			
46	<p>Availability of construction documentation (B2.3)</p> <p>F:.....V:..... T:.....</p>	Item			
47	<p>Interests of Agents (B2.4)</p> <p>F:.....V:..... T:.....</p>	Item			
48	<p>Priced documents (B2.5)</p> <p>F:.....V:..... T:.....</p>	Item			
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49	<p>Tender submission (B2.6)</p> <p>Notwithstanding anything contained in this clause tenders shall be valid for a period of 90 days from the closing date of tenders.</p> <p>F:.....V:..... T:.....</p> <p><u>The Site (B3)</u></p>	Item			
50	<p>Defined works area (B3.1)</p> <p>As per Architect's drawings. See site plan.</p> <p>F:.....V:..... T:.....</p>	Item			
51	<p>Geotechnical investigation (B3.2)</p> <p>(Please see attached Geotechnical Investigation Report in Annexure E.)</p> <p>F:.....V:..... T:.....</p>	Item			
52	<p>Inspection of the Site (B3.3)</p> <p>No claims for extras arising from the contractor having failed to comply with this clause will be entertained.</p> <p>A compulsory, site clarification meeting will be held at the proposed site as per the tender document attached herewith</p> <p>F:.....V:..... T:.....</p>	Item			
53	<p>Existing premises occupied (B3.4) (No)</p> <p>F:.....V:..... T:.....</p>	Item			
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54	Previous work - dimensional accuracy (B3.5) F:.....V:..... T:.....	Item		
55	Previous work - defects (B3.6) F:.....V:..... T:.....	Item		
56	Services - known (B3.7) Existing services and points of connection are known and will be pointed out on site by the Architect. F:.....V:..... T:.....	Item		
57	Services - unknown (B3.8) F:.....V:..... T:.....	Item		
58	Protection of trees (B3.9) F:.....V:..... T:.....	Item		
59	Articles of value (B3.10) F:.....V:..... T:.....	Item		
60	Inspection of adjoining properties (B3.11) F:.....V:..... T:.....	Item		
	<u>Management of contract (B4)</u>			
61	Management of the Works (B4.1) F:.....V:..... T:.....	Item		
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62	<p>Programme for the Works (B4.2)</p> <p>Added to the provisions in (B4.2), the contractor shall ensure that he/she has suitable staff to programme the works using suitable and recognised programming software and the programme for the work is to be developed in sufficient detail indicating an activity network with early and late start dates, early and late finish dates and duration for each activity, further each activity is to be linked and the critical path indicated. Furthermore, the programming of the works shall include detailed documentation and information required schedule which indicates latest dates by which information is required in order to achieve programme dates.</p> <p>F:.....V:..... T:.....</p>	Item			
63	<p>Progress meetings (B4.3)</p> <p>F:.....V:..... T:.....</p>	Item			
64	<p>Technical meetings (B4.4)</p> <p>F:.....V:..... T:.....</p>	Item			
65	<p>Labour and plant records (B4.5)</p> <p>F:.....V:..... T:.....</p>	Item			
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<u>Samples and shop drawings (B5)</u>				
66	<p>Samples of materials (B5.1)</p> <p>F:.....V:.....</p> <p>T:.....</p>	Item		
67	<p>Workmanship samples (B5.2)</p> <p>F:.....V:.....</p> <p>T:.....</p>	Item		
68	<p>Shop drawings (B5.3)</p> <p>F:.....V:.....</p> <p>T:.....</p>	Item		
69	Compliance with manufacturer's instructions (B5.4)	Item		
<u>Temporary works and plant (B6)</u>				
70	<p>Deposits and fees (B6.1)</p> <p>F:.....V:.....</p> <p>T:.....</p>	Item		
71	<p>Enclosure of the works (B6.2)</p> <p>No access to public shall be allowed on site at all times and strict access control shall be maintained during the construction period.</p> <p>The contractor shall fully enclose the works by providing a 2m high diamond mesh fence or suitably similar and approved including access gates, posts. The fence shall be maintained throughout the contract and removed on completion of the contract.</p> <p>F:.....V:.....</p> <p>T:.....</p>	Item		
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72	Advertising (B6.3) F:.....V:..... T:.....	Item		
73	Plant, equipment, sheds and offices (B6.4) F:.....V:..... T:.....	Item		
74	Office accommodation for meetings held on the site which shall be kept clean and fit for use at all times (B6.4.3) F:.....V:..... T:.....	Item		
75	Main notice board (B6.5) F:.....V:..... T:.....	Item		
76	Subcontractors notice board (B6.6) F:.....V:..... T:.....	Item		
<u>Temporary Services (B7)</u>				
77	Location (B7.1) F:.....V:..... T:.....	Item		
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78	Water (B7.2) Alternative chosen: A F:.....V:..... T:.....	Item		
79	Electricity (B7.3) Alternative chosen: A F:.....V:..... T:.....	Item		
80	Telecommunication equipment (B7.4) F:.....V:..... T:.....	Item		
81	Ablution facilities (B7.5) Alternative chosen: A F:.....V:..... T:.....	Item		
<u>Prime cost amounts (B8)</u>				
82	Responsibility for prime cost amounts (B8.1) F:.....V:..... T:.....	Item		
<u>Attendance on Nominated/Selected Subcontractors (B9)</u>				
83	General Attendance (B9.1) F:.....V:..... T:.....	Item		
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84	Special Attendance (B9.2) F:.....V:..... T:.....	Item		
85	Commissioning - fuel, water and power (B9.3) F:.....V:..... T:.....	Item		
<u>Financial Aspects (B10)</u>				
86	Statutory taxes, duties and levies (B10.1) F:.....V:..... T:.....	Item		
87	Payment of Preliminaries (B10.2) F:.....V:..... T:.....	Item		
88	Adjustment of Preliminaries (B10.3) F:.....V:..... T:.....	Item		
89	Payment certificate cash flow (B10.4) F:.....V:..... T:.....	Item		
<u>General (B11)</u>				
90	Protection of the Works (B11.1) F:.....V:..... T:.....	Item		
91	Protection/isolation of existing/sectionally occupied works (B11.2) F:.....V:..... T:.....	Item		
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92	Site security (B11.3) F:.....V:..... T:.....	Item		
93	Notice before covering work (B11.4) F:.....V:..... T:.....	Item		
94	Disturbance (B11.5) F:.....V:..... T:.....	Item		
95	Environmental disturbance (B11.6) F:.....V:..... T:.....	Item		
96	Works cleaning and clearing (B11.7) F:.....V:..... T:.....	Item		
97	Vermin (B11.8) F:.....V:..... T:.....	Item		
98	Overhand work (B11.9) F:.....V:..... T:.....	Item		
99	Instruction manuals (B11.10) F:.....V:..... T:.....	Item		
100	As built information (B11.11) F:.....V:..... T:.....	Item		
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101	<p>Tenant installations (B11.12)</p> <p>F:.....V:..... T:.....</p> <p><u>Schedule of Variables (B12)</u></p>	Item			
102	<p>Pre-tender information (B12.1)</p> <p>Information necessary for making choices and completion of those clauses contained in the schedule which are necessary for tender purposes is given hereunder. Where no information is given it shall mean that either no details or specific requirements are available or that the clause is irrelevant for this specific contract.</p> <p>The provisions of the Occupational Health Safety Act 1993, the Construction Regulations 2014 and the Project Occupational Health and Safety Specification apply in full to this contract and relevant items and variables listed hereunder. Rates for the respective items are to reflect this.</p> <p>12.1.1 Provisional Bills of Quantities (B2.2)</p> <p>The quantities are provisional (NO).</p> <p>12.1.2 Availability of Construction documentation (B2.3)</p> <p>Construction documentation is complete (Yes).</p> <p>12.1.3 Interests of Agents (B2.4) (None).</p> <p>12.1.4 Defined works area (B3.1) As per Architects' drawings See site plan (ANNEXURE F)</p> <p>12.1.5 Geotechnical investigation (B3.2)</p> <p>12.1.6 Existing premises occupied (B3.4) (YES)</p> <p>12.1.7 Previous work - dimensional accuracy (B3.5)</p> <p>12.1.8 Previous work - defects (B3.6)</p> <p align="center">Carried to Collection</p> <p>Section No. 1 Preliminaries Bill No. 1 PRELIMINARIES BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>	Item			
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12.1.9 Services - known (B3.7)

Existing services and points of connection are known and will be pointed out on site by the principal agent.

12.1.10 Protection of trees (B3.9)

12.1.11 Inspection of adjoining properties (B3.11)

12.1.12 Enclosure of the works (B6.2)

12.1.13 Offices (B6.4.3)

12.1.14 Main notice board (B6.5)

One main notice board is required.

12.1.15 Subcontractors Notice Board (B6.6)

A SC Notice Board is NOT required.

12.1.16 Water (B7.2)

Alternative chosen: A

12.1.17 Electricity (B7.3)

Alternative chosen: A

12.1.18 Telecommunications (B7.4)

Alternative chosen: A

12.1.19 Ablution facilities (B7.5)

Alternative chosen: A

12.1.20 Protection of existing/sectionally occupied works (B11.2)

Protection is required (No)

12.1.21 Special Attendance (B9.2)

12.1.22 Protection of the Works (B11.1)

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103	12.1.23 Disturbance (B11.5) Refer to clause B3.4	Item			
	12.1.24 Environmental disturbance (B11.6) Post-tender information (B12.2) 12.2.1 Payment of Preliminaries (B10.2) Alternative chosen: A 12.2.2 Adjustment of Preliminaries (B10.3) Alternative chosen: A 12.2.3 Additional agreed Preliminaries items				
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SECTION C: SPECIFIC PRELIMINARIES

Section C: Specific Preliminaries:

104	<p>Proprietary branded products</p> <p>The contractor shall take delivery of, handle, store, use, apply and/or fix all proprietary branded products in strict accordance with the manufacturer's instructions after consultation with the manufacturer's authorised representative.</p> <p>F:.....V:..... T:.....</p>	Item
105	<p>Overtime</p> <p>Tenderers will be allowed to work two shifts in order to meet the completion date. Any costs associated with this requirement will be priced under this item</p> <p>Should overtime be required to be worked for any other reason whatsoever, the costs of such overtime are to be borne by the contractor unless the principal agent has specifically authorised in writing, prior to the execution thereof, that costs for such overtime are to be borne by the employer.</p> <p>F:.....V:..... T:.....</p>	Item
106	<p>As built drawings</p> <p>The position of construction breaks and the extent of individual concrete pours are to be recorded by the contractor on the structural engineer's drawings and are to be submitted to the principal agent and the structural engineer for their records.</p> <p>F:.....V:..... T:.....</p>	Item

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107	<p>Site instructions</p> <p>Contract 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		
108	<p>Non Cession of Monies</p> <p>The Contractor shall NOT cede nor assign his rights or claims to any monies due or to become due under this contract.</p> <p>F:.....V:..... T:.....</p>	Item		
109	<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		
110	<p>Plant 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, type and capacity of all plant, excluding hand tools, currently used on the works.</p> <p>F:.....V:..... T:.....</p>	Item		
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111	<p>Community Liaison Officer</p> <p>The Contractor shall employ one Community Liaison Officer (CLO), nominated by the community for full duration of the contract. The duties of the CLO and the conditions of employment shall be in accordance with Annexure D Agreement of Temporary Employment as Community Liaison Officer attached to these Bills of Quantities</p>	Item			
112	<p>Community involvement</p> <p>It is a prerequisite and condition of tender that the successful Contractor continuously employ a minimum of 50% of the on site workforce (excluding specialist subcontractors e.g. Electrical installation workforce, etc) in respect of unskilled labour requirements, from local residents living in the immediate vicinity and/or surrounding local communities for the respective building works at normal wage rates.</p> <p>The representative / agent shall be empowered to inspect the books and records of the contractor from time to time to ensure that this requirement is met. Should it become apparent that this condition is not complied with, the representative / agent shall close down the works until such time as this requirement is met. Any such work stoppages will be for the Contractor/s account. Any difficulty experienced by the Contractor in the procurement of the required percentage of local labour is to be immediately referred to the representative / agent.</p>	Item			
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Local Economic Development (LED)

In the department's decision on LED implementation, its strategies and the process of arriving at a LED strategy is that, Local economic development must aim to create jobs by making the local economy grow. As part of the strategy, in any project that belongs to the Department of Public Works and Infrastructure, there MUST be a subcontracting of the works to at least a minimum of 25% of the value of the contract so as to make the economy grow and create income opportunities for more people, especially the poor.

Key principles underlying Local Economic Development include:

- making job creation and poverty alleviation a priority in any LED strategy
- targeting previously disadvantaged people, marginalized communities and geographical regions, black economic empowerment enterprises and SMMEs to allow them to participate fully in local economies.
- promoting local ownership, community involvement, local leadership and joint decision-making.
- involving local and national partnerships between communities, businesses and government to solve problems, create joint business ventures, and build local areas.
- using local resources and skills.
- integrating diverse economic initiatives in a comprehensive approach to local development
- applying flexible approaches to responding to changing conditions.

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<p>It is a prerequisite and condition of tender that the successful Contractor ensures a minimum of 25% of the works (including specialist subcontractors e.g. Electrical installation workforce, etc.) in respect of Local Economic Development requirements, from local residents living in the immediate vicinity and/or surrounding local communities for the respective building works at market related rates.</p> <p>The representative / agent shall be empowered to inspect the books and records of the contractor from time to time to ensure that this requirement is met. Should it become apparent that this condition is not complied with, the representative / agent shall close down the works until such time as this requirement is met.</p> <p>Any such work stoppages will be for the Contractor/s account. Any difficulty experienced by the Contractor in the procurement of the required percentage of local economic development is to be immediately referred to the representative / agent.</p>					
113	<p>The tenderer is to allow attending to the Local Economic Development as stipulated in the notes as well as for any potential risks associated with the procurement of the local sub-contractors.</p> <p>F:.....V:..... T:.....</p>	Item			
114	<p><u>Contractor Development Programme (CDP)</u></p> <p>CO-ORDINATION AND SUPERVISION.</p> <p>The Contractor is to promote the participation and development of registered CDP Contractors by means of subcontracting defined portions of the works to such contractors to a value not less than 5% of the contract sum.</p> <p>The Contractor is to co-ordinate and supervise the work of all these CDP Contractors in such a manner and at all times, as will suit the building programme and he is to allow adequate access for the CDP Contractors where required, to carry out</p>				
<p align="center">Carried to Collection</p> <p>Section No. 1 Preliminaries Bill No. 1 PRELIMINARIES BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>					

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their work in an efficient manner and acceptable quality standards in accordance with the specifications as no claims for extras in this regard will be entertained.

ATTENDANCE.

The Contractor may allow for attendance upon the CDP Contractors concerned to execute the work. The Contractor is to allow the CDP Contractors the use of any scaffolding while it remains erected on the site.

Where scaffolding is necessary for the use by any CDP Contractor and where the Contractor has not erected any for his own use or has removed same after his own use, the Contractor shall supply sufficient scaffolding to the CDP Contractors to be erected and dismantled by the CDP Contractor and returned to the Contractor.

This attendance upon CDP Contractors to execute the work is to include for the scaffolding provisions as aforesaid and, in addition, is to include for co-operating to the fullest extent with all the parties involved, attending on off-loading materials, providing suitable storage for tools and materials used by the CDP Contractors, use of general facilities such as latrines, etc., supply and cost of power, lighting, water and the like. The Employer expect the Contractor to support the CDP Contractors as far as reasonably possible to realise the completion of the project.

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

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	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.1</u></p> <p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p><u>Nature of Ground.:</u></p> <p>The soil material on site varies between clayey-silty sands and clays of low plasticity, respectively classifying as SC-SM and CL. These soils are corrosive. The shale encountered at depth is characterised as either poorly graded gravels or clayey gravels of low plasticity.</p> <p>(For more details on the soil conditions, please refer to the attached geotechnical investigation report marked as annexure E)</p> <p>Descriptions of excavations shall be deemed to include all ground conditions classified as "earth" described in the above report and where more difficult character as indicated, these are separately measured.</p> <p><u>Carting away of excavated material.:</u></p> <p>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.</p>			
Carried to Collection		R	
<p>Section No. 2</p> <p>Building Works</p> <p>Bill No. 1</p> <p>EARTHWORKS</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

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Excavations, Filling , etc.

The Contractor shall notify the Principal Agent as soon as the excavations are ready to receive foundations and no building work may be started until the Principal Agent has approved the excavations.

Over excavations taken beyond the levels and sizes shown or required to obtain a solid foundation shall be filled by the contractor, at his own expense, with 15MPa concrete.

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

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

Blasting:

No blasting will be allowed without the written permission of the Principal Agent.

Should blasting be necessary, the Contractor shall take every precaution to protect the Works and persons, animals and property in the vicinity of the Works. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall make good such damage at his own expense.

Testing:

Prices for filling are to include for all necessary density tests in accordance with SANS 1200D.

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Prescribed density tests:

NOTE: The Contractor is specifically referred to the SANS 1200 clause regarding the number of density tests required on the layer work, filling, etc. The tests as prescribed are deemed to be included in the appropriate rates for the layer work, filling, etc. and will not be paid for separately. The following density tests measured are over and above those normally required by SANS 1200 and is for the use of the Engineer only and will only be paid for if instructed in writing and approved as acceptable by the Engineer.

SITE CLEARANCE, ETC.**Site clearance, etc.:**

1	Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scaffolding up as required and cart away all vegetation and debris.	m2	8 360
2	Stripping average 200mm thick layer of top soil and stockpiling on site.	m2	8 360

REMOVAL OF TREES ETC**Taking out and removing, grubbing up roots and filling in holes:**

3	Tree exceeding 200mm and not exceeding 500mm girth.	No	2
4	Tree exceeding 500mm and not exceeding 1000mm girth.	No	4
5	Tree exceeding 1000mm and not exceeding 1500mm girth.	No	1
6	Tree exceeding 2000mm and not exceeding 2500mm girth.	No	3
7	Tree exceeding 2500mm and not exceeding 3000mm girth.	No	2

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<u>BULK EXCAVATION, FILLING, ETC</u>					
<u>Open face excavation in all materials other than rock over sloping site.:</u>					
8	Reduced levels under floors.	m3	4 538		
<u>Extra over bulk excavation in earth for excavation in</u>					
9	Soft rock.	m3	227		
10	Hard rock.	m3	113		
<u>Extra over bulk excavation in earth for breaking up and removing</u>					
11	Brickwork.	m3	90		
12	Unreinforced concrete.	m3	113		
13	Reinforced concrete.	m3	113		
<u>Extra over all Bulk excavations for carting away:</u>					
14	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor.	m3	3 074		
<u>Earth filling supplied by the contractor, temporarily stockpiled on site including haulage approximately 100m from perimeter of stock piles.:</u>					
15	150mm Thick sub-base course of G5 material compacted to 93% MOD AASHTO density in 150mm thick layers, under floors, aprons, ramps, steps, etc.	m3	1 815		
16	150mm Thick sub-base course of G6 material compacted to 93% MOD AASHTO density in 150mm thick layers, under floors, aprons, ramps, steps, etc.	m3	907		
<u>Filling with approved material from the excavations and spread, level, water and compact to a density of at least 93% Mod.AASHTO maximum and trim level:</u>					
17	Under floors, pavings, etc.	m3	2 720		
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	<u>Prescribed density tests on filling.:</u>				
18	Modified AASHTO Density test.	No	60		
19	"Road Indicator" test.	No	24		
20	"Field Density" test including "Optimum Moisture Content" (four readings per test).	kg	30		
	<u>Compaction of surfaces:</u>				
21	Rip and scarify top surface of existing formation to a depth of 150mm and compact to not less than 100% of Modified AASHTO density.	m2	6 050		
	<u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u>				
	<u>Excavation in all materials other than rock not exceeding 2m deep.:</u>				
22	Trenches.	m3	976		
23	Holes.	m3	175		
	<u>Extra over excavation other than bulk in all materials for excavation in (on-site verification required for payment).:</u>				
24	Soft rock.	m3	115		
25	Hard rock.	m3	14		
	<u>Back excavation of vertical sides of excavation in all materials other than rock for working space including backfilling compacted to 93% Mod. AASHTO maximum density.:</u>				
26	Exceeding 500mm and not exceeding 1500mm deep for erection and removal of formwork to strip footing, bases, ground beams, etc.	m2	7 843		
	<u>Risk of collapse of excavations other than bulk.:</u>				
27	Sides of trench and hole excavations not exceeding 1,5m deep.	m2	7 843		
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	<u>Extra over all excavations other than bulk for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk).:</u>				
28	Off site to a dumping site to be found by the Contractor.	m3	985		
	<u>Filling with approved material from the excavations and spread, level, water and compact to a density of at least 93% Mod.AASHTO maximum and trim level.:</u>				
29	Backfilling to trenches, holes, etc.	m3	166		
	<u>Coarse river sand filling compacted to 98% Mod. AASHTO maximum density.:</u>				
30	Under floors, etc.	m3	302		
	<u>Keeping excavations free of water.:</u>				
31	Keeping excavations free of all water other than subterranean water.		Item		
	<u>SOIL POISONING</u>				
	<u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years.:</u>				
32	Under floors etc. including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming (Provisional).	m2	6 771		
33	To bottoms and sides of trenches etc.	m2	9 559		
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	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.2</u></p> <p><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</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>Formwork:</u></p> <p>Descriptions of formwork shall be deemed to include use and waste only (except where described as left in or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.</p>			
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Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

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

Unless otherwise agreed as being measurable in terms of the foregoing paragraph, formwork necessitated by irregularly excavated faces or for other reasons decided upon by the contractor (e.g. over excavation) is not separately measurable. The cost thereof shall be deemed to be included in the contractor's allowance for concrete cast against excavated surfaces.

Provisional quantities allowing for the formwork described above together with the associated excavation for working space, have been measured in these Bills of Quantities. In the final account, these provisional quantities will be omitted and formwork to be measured will be determined by the initial prescription and/or subsequent authorised instructions of the structural engineer, together with formwork determined by the quantity surveyor as being necessary as defined above

For tendering purposes, the structural engineer has indicated that, for design purposes, he will require formwork to all the sides of the following concrete elements below ground level:

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.

Formwork to sides of bases, pile caps, ground beams, etc., will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks.

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	The structural engineer reserves the right to vary the above requirements at any time during the construction period at his discretion				
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
	<u>15 Mpa/19mm Concrete.:</u>				
1	Surface blinding under bases, beams, footings, etc. (Provisional).	m3	83		
	<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
	<u>25 Mpa/19mm Concrete:</u>				
2	Strip footings.	m3	2		
	<u>REINFORCED CONCRETE</u>				
	<u>20 Mpa/19mm Concrete.:</u>				
3	Stairs including landings, beams and inverted beams.	m3	0.4		
	<u>25 Mpa/19mm Concrete.:</u>				
4	Strip footings.	m3	9		
5	Foundation beams	m3	863		
6	Surface beds on waterproofing.	m3	603		
7	Ramps.	m3	2		
8	Slabs including beams and inverted beams.	m3	26		
	<u>30 Mpa/19mm Concrete.:</u>				
9	Bases.	m3	68		
10	Walls in foundations (Provisional).	m3	2		
11	Walls.	m3	4		
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<u>TEST BLOCKS</u>					
<u>Test blocks.:</u>					
12	Making and testing sets of three 150 x 150 x 150 mm concrete strength test cubes (Provisional).	Sets	114		
<u>CONCRETE SUNDRIES</u>					
<u>Finishing top surfaces of concrete smooth with a power float:</u>					
13	Surface beds, slabs, etc.	m2	4 829		
<u>Finishing top surfaces of concrete smooth with a wood float.:</u>					
14	Surface beds, slabs, etc.	m2	1 207		
<u>Under-floor insulations, etc.:</u>					
15	40mm Expanded polystyrol under floor insulation with R-value:1 less than 3% water absorption and deformation under 150kpa pressure.	m2	6 050		
<u>HOLLOW BLOCKS ETC</u>					
<u>Pre-cast concrete hollow blocks in composite slabs:</u>					
16	220mm wide x 500mm long x 120mm high Block type S120.	No	5 429		
<u>Pre-cast concrete closed blocks in composite slabs:</u>					
17	220mm wide x 500mm long x 120mm high Block type S120	No	24		
<u>ROUGH FORMWORK (DEGREE OF ACCURACY III)</u>					
<u>Rough formwork to Sides.:</u>					
18	Bases (Provisional).	m2	247		
19	Strip footings (Provisional).	m2	24		
20	Rectangular columns in foundation. (Provisional).	m2	48		
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Section No. 2 Building Works Bill No. 2 CONCRETE, FORMWORK AND REINFORCEMENT BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

21	Walls in foundations (Provisional).	m2	31		
22	Foundation beams (Provisional)	m2	1 076		
23	Edges, risers, ends, and reveals not exceeding 300mm high.	m	19		
	<u>Rough formwork to soffits.:</u>				
24	Slabs propped up exceeding 1.5m and not exceeding 3.5m high.	m2	211		
25	Landings.	m2	4		
26	Stairs with sloping soffits.	m2	4		
	<u>Smooth formwork to Sides.:</u>				
27	Walls.	m2	69		
	<u>MOVEMENT JOINTS ETC.</u>				
	<u>Saw cut joints.:</u>				
28	40 x 3mm Saw cut joint in top of concrete.	m	659		
	<u>'Sondo Jointex' or equal and approved joint forming material in movement joints between horizontal concrete and brick surfaces including 10mm expanded Polystyrol Bondbreaker:</u>				
29	10mm Joints not exceeding 300mm wide.	m	1 494		
	<u>REINFORCEMENT (PROVISIONAL)</u>				
	<u>Mild steel reinforcement to structural concrete work.:</u>				
30	Mild steel reinforcement bars	t	19.68		
	<u>High tensile steel reinforcement to structural concrete work.:</u>				
31	High tensile reinforcement bars	t	41.51		
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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.3</u></p> <p><u>MASONRY</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>BRICKWORK</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>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 and colour.</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>All pointing to be approved by the Architect via sample panel which is to be built on site.</p>			
Carried to Collection		R	
<p>Section No. 2</p> <p>Building Works</p> <p>Bill No. 3</p> <p>MASONRY</p> <p><i>BILL OF ESTIMATE</i></p> <p><i>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</i></p>			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>Sample panels.:</u>					
1	The contractor to build a sample panel size 1.5 x 1m high detailing quality of facebrick work to the approval of Architect at contractors cost.		Item		
<u>FOUNDATION BRICKWORK</u>					
<u>Brickwork of NFX bricks in class II mortar.:</u>					
2	One brick walls.	m2	57		
3	330 x 330mm Brick piers, in heights not exceeding 1.5m high.	m	178		
4	1075 x 330mm Brick piers, in heights not exceeding 1.5m high.	m	22		
<u>BRICKWORK IN SUPERSTRUCTURE</u>					
<u>Brickwork of NFP bricks in class II mortar.:</u>					
5	Half brick walls.	m2	813		
6	Half brick walls in beam filling.	m2	38		
7	One brick walls.	m2	9 166		
8	330 x 330mm Brick piers, in heights exceeding 1.5m and not exceeding 3m high.	m	367		
9	1075 x 330mm Brick piers, in heights exceeding 1.5 but not exceeding 3m high.	m	58		
<u>BRICKWORK SUNDRIES</u>					
<u>'Jointex' joint forming material in movement joint.:</u>					
10	10mm Expanded polysulphide joint former with sondor strip vertically between brick skins not exceeding 300mm wide.	m	345		
<u>Brickwork reinforcement (Provisional).:</u>					
11	75mm Wide reinforcement built in horizontally.	m	2 505		
12	150mm Wide reinforcement built in horizontally.	m	29 298		
Carried to Collection				R	
Section No. 2 Building Works Bill No. 3 MASONRY BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>Pre stressed fabricated lintels.:</u>				
13	Lintels in lengths not exceeding 3m suitable for half brick wall.	m	23	
14	Lintels in lengths not exceeding 3m suitable for one brick wall.	m	280	
15	Lintels in lengths not exceeding 3m suitable for one brick wall (one side of one brick wall to receive face brick lintol elsewhere measured).	m	870	
<u>Galvanised hoop iron cramps, ties, etc.:</u>				
16	30 x 1mm Wall tie 600mm long with both ends built into brickwork.	No	2 032	
<u>FACE BRICKWORK</u>				
<u>Facebricks Prime Cost Of R6 500.00 Per Thousand Excluding VAT Delivered To The Site Pointed With Square Recessed Horizontal And Vertical Joints.:</u>				
17	Extra over brickwork for face brickwork in foundations.	m2	372	
18	Extra over brickwork for face brickwork.	m2	5 847	
19	Extra over half brick wall for face brick work in beam filling.	m2	38	
20	One brick walls in English bond pointed on both sides.	m2	154	
21	Extra over brickwork for facing 330 x 330mm piers.	m	402	
22	Extra over brickwork for face brick work in brick-on-edge header lintel 230mm wide.	m	870	
23	220mm Wide brick od edge header course sills set sloping and slightly projecting.	m	564	
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Section No. 2 Building Works Bill No. 3 MASONRY BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	<p><u>NUTEC-CEMENT/FIBRE-CEMENT WINDOW SILLS</u></p> <p><u>Natural grey sills in single lengths bedded in class I mortar including metal fixing lugs etc.:</u></p> <p>24 24 x 120mm Window sills set flat and slightly projecting. m 564</p>				
	<p align="center">Carried to Collection</p>		R		
	<p>Section No. 2 Building Works Bill No. 3 MASONRY BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>				

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
<u>SECTION NO.1</u>				
<u>BUILDING WORK</u>				
<u>BILL NO.4</u>				
<u>WATERPROOFING</u>				
The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.				
<u>SUPPLEMENTARY PREAMBLES</u>				
<u>Waterproofing.:</u>				
Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs.				
<u>DAMPPROOFING OF WALLS AND FLOORS</u>				
<u>One layer of 375 micron Consol Plastics Brikgrip DPC embossed damp proof course or equal and approved.:</u>				
1	Vertically in walls.	m2	400	
2	Horizontally in walls.	m2	294	
<u>One layer of 350 micron Consol Plastics Gunplas USB Green waterproof sheeting (or equal and approved) sealed at laps with Gunplas Pressure Sensitive Tape.:</u>				
3	Under surface beds.	m2	6 050	
Carried to Collection				R
Section No. 2 Building Works Bill No. 4 WATERPROOFING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>JOINT SEALANTS ETC</u>					
<u>Two part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc including raking out expansion joint filler if necessary.:</u>					
4	In 40 x 3 mm saw cut joints in floors.	m	659		
5	In 10 x 10mm expansion joints vertically between bricks skins not exceeding 300mm deep.	m	345		
6	In 10mm x 10mm movement joints between surface bed and brick wall.	m	1 494		
<u>Approved polyurethane sealing compound including backing cord, bond breaker, primer, etc:</u>					
7	In joints between steel frames and walls	m	3 269		
<u>Silicone sealing, etc.:</u>					
8	Joints not exceeding 10mm between wall tiles and sanitary fittings.	m	232		
9	Joints not exceeding 10mm between timber skirting and wall.	m	2 272		
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
<u>SECTION NO.1</u> <u>BUILDING WORK</u> <u>BILL NO.5</u> <u>ROOF COVERINGS</u> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <u>SUPPLEMENTARY PREAMBLES</u> <u>Ribbed roofing sheets.:</u> <p>The sheets shall be fixed in accordance with the manufacturer's recommendations with side-laps on the leeward side of the prevailing wind direction.</p> <u>Cutting of sheets.:</u> <p>All cutting of sheets shall be properly performed and all exposed cut edges shall be perfectly straight and treated to match roof finish.</p> <u>PROFILED METAL SHEETING AND ACCESSORIES</u> <u>GALVANISED STEEL ROOF SHEETING</u> <u>0.6mm Galvanised IBR sheet steel with Chromadek finish on one side in single lengths fixed to timber purlins or rails and 0.6mm galvanised sheet steel accessories with Chromadek finish on one side:</u>				
1	Roof covering with pitch not exceeding 25 degrees, in transportable lengths not exceeding 20m.	m2	5 551	
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Section No. 2 Building Works Bill No. 5 ROOF COVERINGS BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>0.6mm Galvanised IBR sheet steel with Chromadek finish on one side in single lengths fixed to steel purlins or rails and 0.6mm galvanised sheet steel accessories with Chromadek finish on one side.:</u>				
2	Roof covering with pitch not exceeding 25 degrees, in transportable lengths not exceeding 20m.	m2	969		
3	Side cladding	m2	1 881		
	<u>6mm Galvanised IBR sheet accessories.:</u>				
4	Headwall flashing 462mm girth twice bent.	m	485		
5	Ridge flashing 462mm girth twice bent.	m	505		
6	Side wall flashing 462mm girth twice bent.	m	30		
7	Gable trim 462mm girth twice bent.	m	400		
8	Drip flashing 231mm girth three times bent.	m	1 420		
	<u>INSULATION TO ROOFS</u>				
	<u>Sisalation 405 Housing grade aluminium foil based insulation.:</u>				
9	Insulation to timber purlins fixed concurrent with roof covering including fitment strictly to the manufacturer's instructions.	m2	5 551		
	<u>Sisalation 410 housing grade glass fibre reinforced aluminium foil bonded insulation.:</u>				
10	Insulation to steel purlins fixed concurrent with roof covering including fitment strictly to the manufacturer's instructions.	m2	969		
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DOMES PRIMARY SCHOOL IN PARYS**

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ROOF COVERINGS

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	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.6</u></p> <p><u>CARPENTRY AND JOINERY</u></p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>PREFABRICATED TIMBER ROOF TRUSSES</u></p> <p><u>Prefabricated metal connected timber roof trusses:</u></p> <p>All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction.</p> <p><u>Descriptions for pre-fabricated timber roof trusses:</u></p> <p>Descriptions of trusses shall be deemed to include all necessary splay cut ends, mitres, joining, wrought and shaped ends, connectors, plate connectors, clips, etc.</p> <p>Tendered rates must make provision for the aforesaid as no additional claims in this regard will afterwards be entertained.</p> <p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Building Works Bill No. 6 CARPENTRY AND JOINERY BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Timber:

Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SABS Specification No. 563 or as defined in SABS Specification No. 1460.

Bolts:

Bolts shall be in accordance with BS 4190 or SABS 135.

Shear plates, tooth connectors and split rings:

Shear plates, tooth connectors and split rings shall be in accordance with BSS 1759 : 1960 and installed in accordance with the CSIR Publication HOUT 468, "The Design, Manufacturing and Erection of Timber Trusses".

Washers:

Square or round washers of the following dimensions shall be used with all bolts:

1. **Bolts up to 8mm diameter:**

Washers shall be minimum 25mm wide of minimum 2.5mm thickness.

2. **Bolts up to 12mm diameter:**

Washers shall be a minimum 36mm wide of minimum 4mm thickness.

3. **Bolts up to 20mm diameter:**

Washers shall be a minimum 60mm wide of minimum 5mm thickness.

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QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Metal connector plates:

Metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel.

The steel shall have a minimum yield strength of 228MPa and a minimum ultimate tensile strength of 330MPa. The corrosion resisting coating shall be not less than 275g/m² commercial class hot dipped galvanised as per SABS 934 before stamping.

All connector plates shall have been tested by CSIR and be of size capable of transmitting the forces between members of a truss without exceeding the design values published in the CSIR reports.

Truss construction:

Trusses shall be constructed in jigs specially designed to ensure the correct profile, overhangs and cambers.

Where metal connector plates are used all joints are to be close fitted butt joints made by precision pressing of the metal connector plates into each side of the joint.

Truss design:

All trusses shall be designed by a registered Professional Engineer in accordance with SABS 0163, "Design of Timber Structures" and Code 0160, "Loadings".

Truss spacing:

The truss centres shall be less than or equal to that as described in this bill for each respective truss.

Truss pitch:

The truss pitch shall be as described in this bill for each respective truss type.

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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Truss loading:

Trusses shall be designed for a live load of 0.50kN/m² and dead load as specified under the sub-heading "Specific load specifications for roof trusses".

Workshop drawings, design and erection guarantee certificates:

It will be expected from the contractor to timeously prepare, submit and obtain the necessary approvals from the Architect in respect of the required shop drawings, design and erection guarantee certificates as specified.

Dimensions:

All dimensions given in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences.

Erection:

All trusses are to be hoisted and erected strictly in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber roof Trusses: as published by the institute for Timber Construction and the CSIR, or the SABS Code of Practice "The Design, Manufacture and Erection of Timber Roof Trusses", or as designed and detailed by the designer.

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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Design system:

The design system as documented in the bill is based on the "MiTek" system and all references given in the descriptions are related to specific type of trusses based on the design system.

However, contractors are to note that any design system of similar quality maybe used subject to prior written approval of the Architect.

Specific specifications for roof trusses

Unless specifically otherwise described, the following specifications will apply:

1. The pitch of all trusses to be 10°
2. All trusses to be single ply, unless otherwise described trusses at maximum 1200mm centres.
3. All trusses to be at maximum 1200mm centres, unless otherwise described.
4. All exposed structural laminated beams shall be of architectural finish, i.e. manufactured of clean grade (absolutely clean) high density timber wrought all round.

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**CONSTRUCTION OF PROPOSED NEW
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Rates:

Tendered rates to include for the complete roof construction, including the design of the roof construction, all timber of required grade and type shown on the design, all cutting and waste, cutting to the exact lengths and end angles to manufacture the respective truss type, supply of all connector plates, fabrication of trusses, checking the completed truss for quality, loading, storing under cover and protecting from the weather, hoisting up in position and erection of the roof truss structure, necessary supervision, submission of all shop drawings, design and erection guarantee certificates, etc. as specified.

Fixing.:

items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete.

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere.

Decorative laminate finish.:

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

Joinery.:

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

Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts.

All doors are to be pre-treated with a sealer as per Swatland specification.

Door types indicated refer to the full door specification and detail on the Door Schedule on Architect Drawing No. 500 to 509.

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BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOVE PRIMARY SCHOOL IN PARYS**

<u>ROOFS, ETC</u>					
<u>PREFABRICATED ROOF TRUSSES, ETC.</u>					
<u>Sawn softwood:</u>					
<u>Prefabricated timber roof construction complete including purlins, runners, bracing hips, valleys, cleats, purlins, etc.,</u>					
1	Double pitched timber roof construction complete, for building size 41200 x 11707mm overall on plan, including overhang (Block A1, A3 and A4).	No	3		
2	Double pitched timber roof construction complete, for building size 32330 x 16230mm overall on plan, including overhang (Block G).	No	1		
3	Double pitched timber roof construction complete, for building size 44598 x 11705mm on plan, (Block A2).	No	1		
4	Double pitched timber roof construction complete, for building size 38329 x 11707mm on plan, (Block B1, B2 and B3).	No	3		
5	Double pitched timber roof construction complete, for building size 35360 x 10210mm on plan, (Grade R Block - C).	No	1		
6	Double pitched timber roof construction complete, for building size 43850 x 11707mm on plan, (Block - D).	No	1		
7	Double pitched timber roof construction complete, for building size 33310 x 19910mm on plan, (Block - E).	No	1		
8	Double pitched timber roof construction complete, for building size 20080 x 7730mm on plan, (Block - L).	No	1		
9	Mono pitched timber roof construction complete, for building size 5487 x 4940mm on plan, (Block - F).	No	1		
10	Mono pitched timber roof construction complete, for building size 4340 x 4040mm on plan, (Block - K).	No	1		
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DOVE PRIMARY SCHOOL IN PARYS**

11	Mono pitched timber roof construction complete, for building size 5440 x 5440mm on plan, (Block - J).	No	1		
12	Double pitched timber roof construction complete with overhang, for L-shaped building size 24480 x 17900mm on plan, (Hall Kitchen - Block K).	No	1		
13	Mono pitched timber roof construction complete with overhang, for building size 8635 x 10090mm overall on plan, (Multi-purpose Hall - block K).	No	1		
14	Mono pitched timber roof construction complete with overhang, for building extension size 6005 x 2075mm overall on plan, (Multi-purpose Hall - block K).	No	4		
<u>Sawn softwood.:</u>					
15	Wall plate size 38 x 114mm.	m	89		
<u>DOORS, ETC.</u>					
<u>Wrought meranti doors:</u>					
16	44mm Framed, ledged and braced batten single door 813 x 2032mm high of 110mm wide top rail and stiles, 22 x 150mm middle ledge and braces and 44 x 225mm bottom rail, filled in with 22mm tongued and grooved V-jointed one side vertical boarding with tongued and grooved joints to top and bottom rails and stiles and with inner edges of framing and abutting edges of boarding chamfered to form V-joint (Door type D01 and D06) (refer to architect's drawing No. 501).	No	47		
17	44mm Framed, ledged and braced batten single door 900 x 2032mm high of 110mm wide top rail and stiles, 22 x 150mm middle ledge and braces and 44 x 225mm bottom rail, filled in with 22mm tongued and grooved V-jointed one side vertical boarding with tongued and grooved joints to top and bottom rails and stiles and with inner edges of framing and abutting edges of boarding chamfered to form V-joint (Door type D09) (refer to architect's drawing No. 503).	No	3		
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**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

18	40mm Double door 1511 x 2032mm high with rebated meeting styles with hardwood braced and battened heavy duty class one exterior, softwood frame with double top and bottom rails, Hardwood tongue and groove "V" jointed boarding glued to frame on both sides (Door type D02) (refer to architect's drawing No. 500).	No	14		
	<u>Solid laminated heavy duty interior doors with commercial veneer hung to steel frames (frame eslewhere):</u>				
19	40mm Single door 813 x 2020mm high (Door type D03, D07) (refer to architect's drawing No. 500).	No	78		
20	40mm Single door 900 x 2032mm high (Door type D08) (refer to architect's drawing No. 500).	No	3		
	<u>Semi-Solid flush doors with commercial veneer hung to steel frames (frame eslewhere):</u>				
21	40mm Single door 813 x 2032mm high (Door type D04) (refer to architect's drawing No. 500).	No	50		
	<u>SKIRTINGS. ETC.</u>				
	<u>Wrought meranti:</u>				
22	76 x 19mm Skirting with and including 19mm quarter round quadrant plugged and screwed.	m	2 272		
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Section No. 2					
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CARPENTRY AND JOINERY					
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Building Works

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CARPENTRY AND JOINERY

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Building Works

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CARPENTRY AND JOINERY

BILL OF ESTIMATE**QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD**

	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.7</u></p> <p><u>CEILINGS, PARTITIONS, ACCESS FLOORING, ETC.</u></p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</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.</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>Hangers, suspension grids, "lay-in" panels, etc are to be in accordance with the manufacturers' recommendations.</p>			
Carried to Collection		R	
<p>Section No. 2</p> <p>Building Works</p> <p>Bill No. 7</p> <p>CEILINGS, PARTITIONS, ACCESS FLOORING, ETC.</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Flush plastered suspended ceilings, bulkheads, etc.:

Descriptions of ceilings, bulkheads, etc are deemed to include for the total design, fabrication, erection, etc of suspension systems, grids, sub-grids, hangers, framing, bracing, etc and for gypsum plasterboard as described fixed with Rhino Drywall screws to tee section Screw-Up suspension system or Drywall steel tracks, studs, rails, braces, etc.

All joints in boards are to be covered with 50mm wide self adhesive Fibatape and whole finished with Rhinolite gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer, including galvanised pressed metal beads, arises to the plaster, etc.

General.:

Description of ceilings, bulkheads, etc generally are deemed to include for all necessary bridging, hangers, bracing, etc over and around services, pipes, air-conditioning ducting, etc. occurring within the ceiling and/or bulkhead voids and no claims for extras will be entertained for non co-ordination with other sub-contractors involved in this regard.

All work to be executed in strict accordance with the manufacturer's recommendations and carried out by specialist ceiling and bulkhead installers.

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Building Works

Bill No. 7

CEILINGS, PARTITIONS, ACCESS FLOORING, ETC.

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>NAILED - UP CEILINGS</u>				
<u>6.4mm "Rhino" or equal and approved gypsum plasterboard with taped and skimmed joints:</u>				
1	Ceilings including 38 x 38mm sawn softwood brander.	m2	3 869	
2	Extra over rhino board ceiling for 600 x 600mm trap door of 38 x 38mm wrot softwood rebated framing with one 38 x 76mm sawn softwood cross brander covered with ceiling board and fitted flush in opening.	No	17	
<u>"Aeropink" or equal and approved non-combustible lightweight glass wool insulation:</u>				
3	135mm Insulation in blanket form, closely fitted and laid on top of brander between roof timbers, etc (Brander elsewhere measured).	m2	4 718	
<u>Gypsum cornices.:</u>				
4	75mm Coved cornice.	m	3 153	
<u>SUSPENDED CEILINGS</u>				
<u>"Donn GYPREX" or similar and approved ceiling tiles size 600 x 1 200mm x 12.50mm thick with square edge and white painted finish laid on "Donn" or similar and approved pre-painted exposed T38V/T37V tee suspension system, including galvanised main tees, cross tees, hold-down clips, wedges, reinforcement splines, etc., all suspended with galvanised hangers at not exceeding 1200mm centres strictly in accordance with the manufacturers instructions:</u>				
5	Ceilings suspended not exceeding 2m below steel trusses.	m2	760	
6	Sloping ceilings suspended not exceeding 1m below steel purlins at 1000mm centres (trusses at 5m centres).	m2	89	
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>"OWA" or equal and approved shadowline cornices, perimeter trims, etc. to suspended ceilings:</u>	m	200	R
7	24 x 19mm Pre-painted wall angle cornice, plugged.		
<p align="center">Carried to Collection</p> <p>Section No. 2 Building Works Bill No. 7 CEILINGS, PARTITIONS, ACCESS FLOORING, ETC. BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

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**CONSTRUCTION OF PROPOSED NEW
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		Quantity	Rate	Amount
<u>SECTION NO.1</u>				
<u>BUILDING WORK</u>				
<u>BILL NO.8</u>				
<u>FLOOR COVERING</u>				
<u>PREAMBLES</u>				
The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained.				
<u>VINYL FLOOR COVERINGS, WALL LININGS, ETC.</u>				
<u>2mm Thick "Floorworx" or equal and approved non-directional semi flexible vinyl sheets laid with "No.62 Acrylic" or similar and approved adhesive on primer and self levelling screeds (self levelling screed elsewhere measured), all as per manufacturers instructions:</u>				
1	On screeded floors.	m2	2 901	
2	Turn-ups over coves and up against walls not exceeding 300mm girth.	m	1 982	
<u>3mm Thick "Floorworx" or equal and approved non-directional semi flexible vinyl sheets laid with "No.62 Acrylic" or similar and approved adhesive on primer and self levelling screeds (self levelling screed elsewhere measured), all as per manufacturers instructions:</u>				
3	On screeded floors.	m2	720	
4	On treads and risers of stairs	m2	5	
Carried to Collection				R
Section No. 2 Building Works Bill No. 8 FLOOR COVERING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

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	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.9</u></p> <p><u>IRONMONGERY</u></p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Locks.:</u></p> <p>Notwithstanding Clause 4 of the "Ironmongery" trade of the "Standard System of Measuring Building Work", descriptions of locks shall be deemed to include two keys per lock.</p>			
Carried to Collection		R	
<p>Section No. 2</p> <p>Building Works</p> <p>Bill No. 9</p> <p>IRONMONGERY</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Finishes to ironmongery, etc:

Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS

Satin bronze lacquered

: CH Chromium plated

: SC Satin chromium plated

: SE Silver enamelled

: GE Grey enamelled

: AS Anodised silver

: AB Anodised bronze

: AG Anodised gold

: ABL Anodised black

: PB Polished brass

: PL Polished and lacquered

: PT Epoxy coated.

All locks are Master key operational.

All ironmongery is deemed to include fitment of screws that best match the finish of the item specified.

HINGES, BOLTS, ETC**"Geze" or similar and approved.:**

1	"Ref. 194/01 - TT001SS" Stainless steel thumb turn and lock bolt complete.	Sets	16
2	"Ref. 195/01 - GESE00205" Stainless steel mortice WC indicator bolt complete with lock.	Sets	47
3	"Ref. 195/01 - DISABLED" Stainless steel mortice WC indicator bolt complete with lock.	Sets	1
4	"Ref. 120/150" 150 x 20mm Stainless steel flush bolt.	No	20

"CISA" or similar and approved.:

5	"Ref. 44820" 22mm Long single throw deadbolt complete with 22mm stainless steel faceplate.	No	47
6	"Ref. SF205" 150mm Long natural anodised Stainless flush bolt.	No	19

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BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

<u>LOCKS</u>					
<u>"Geze" or similar and approved.:</u>					
7	76mm Cylinder sash lock (Code: 325/51 - GGA170051).	No	184		
8	"Ref. N/PL KNOB" 66mm Cylinder (Code: GIG955933338M).	No	184		
9	"Ref. 130/81 - GESB00081" Nickel plated rebate conversion kit for geze-profile locks.	No	20.0		
<u>HANDLES</u>					
<u>"Geze" or similar and approved.:</u>					
10	"JD213/111 - GEKA2131169" 130 x 111 x 19mm stainless back-to-back pull handles.	Pairs	16.0		
11	Marseilles lever handle on rose complete with cylinder escutcheon (Code: DC113AC69).	Sets	184		
<u>DOOR CLOSERS</u>					
<u>"Geze" or similar and approved.:</u>					
12	Adjustable power regular arm overhead door closer (Code: TS1500) complete with standard guide rail (Code: AZ1503).	No	7		
13	Adjustable power regular arm overhead delayed door closer (Code: TS4000) complete with parallel arm (Code: AZ4001DA).	No	2		
<u>CATCHES, CABIN HOOKS, ETC</u>					
<u>"Geze" or similar and approved.:</u>					
14	"Ref. 154/69-GESD00169" Stainless steel hat and coat hook with rubber buffer.	No	16		
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Section No. 2 Building Works Bill No. 9 IRONMONGERY BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>LETTERS, NAMEPLATES, ETC</u>				
<u>"Geze" or similar and approved.:</u>				
15	"Ref. GEP15069E/F" 160 x160 x 1.2mm Thick stainless steel female toilet indicator sign.	No	34	
16	"Ref. GEP15069E/M" 160 x160 x 1.2mm Thick stainless steel male toilet indicator sign.	No	22	
17	"Ref. GEP15069E/E" 160 x160 x 1.2mm Thick stainless steel Electrical sign.	No	2	
<u>PUSH PLATES AND KICKING PLATES</u>				
<u>"Geze" or similar and approved.:</u>				
18	900 x 500 x 0.9mm Thick stainless steel kick plate (Code: 080/500).	No	1	
19	160 x 160 x 1.2mm Thick stainless steel push plate (Code: E/PAR 079/160E/P).	No	2	
<u>SUNDRIES</u>				
<u>"Geze" or similar approved.:</u>				
20	"Ref. 140/69-GESC00069" Stainless steel door stop , plugged.	No	204	
<u>BATHROOM FITTINGS</u>				
<u>"Franke Stratos STRX 671" or similar and approved toilet roll holders.:</u>				
21	156 x 304mm High locking double toilet paper holder plugged (Code: 359715).	No	47	
<u>"Railman" or similar and approved.:</u>				
22	"DL2" 300 X 300 X 300mm Stainless steel side grab rail.	No	7	
23	"SR2A" 670 X 246mm Stainless steel rear grab rail.	No	7	
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Section No. 2 Building Works Bill No. 9 IRONMONGERY BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

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	<u>Franke or equal and approved towel rails.:</u>				
24	600mm Long towel rail BHM 9P (Code: 359933), plugged.	No	6		
	<u>"Franke Stratos STRX611" or equal and approved sanitary towel waste bins.:</u>				
25	205 x 134 x 305mm High x 1,2/1,5mm thick satin finished stainless steel sanitary towel disposal bin (Code: 359740) with a capacity of 3,8 litres, plugged and screwed to the wall with stainless steel screws.	No	29		
	<u>"Franke Stratos STRX605" similar and approved waste bins.:</u>				
26	300 x 270 x 520mm High x 1,2/1,5mm thick satin finished stainless steel waste bin (Code: 359730) with a capacity of 34 litres and cylinder lock with standard "Franke" or similar and approved key, plugged and screwed to the wall with stainless steel screws.	No	54		
	<u>"Frank Stratos STRX618" or similar and approved soap dispensers.:</u>				
27	100 x 134 x 304mm High x 1,2/1,5mm thick satin finished stainless steel soap dispenser (Code: 359705) including a replaceable and refillable 1 litre container, cylinder lock with standard "Franke" or similar and approved key, plugged and screwed to the wall with stainless steel screws.	No	57		
	<u>"Franke HF2400HD" similar and approved hand dryers.:</u>				
28	280 x 207 x 245mm High x 1,2/1,5mm thick satin finished stainless steel automatic hands free hand dryer (Code: 359961) with a capacity of 200W motor connected to 230/240 volt power supply, including 2 vandal proof lock screws and key wrench, plugged and screwed to the wall with stainless steel screws. Hand dryer to have a 5 year warranty plan.	No	13		
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	Section No. 2 Building Works Bill No. 9 IRONMONGERY BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.10</u></p> <p><u>STRUCTURAL STEELWORK</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>All notes, specifications, instructions, references, requirements, preparations, finishes, etc. and construction details reflected on these drawings should be carefully studied and priced. The requirements, notes and specifications on the drawings are not repeated here as preambles but are applicable to the measured items in all respects. Tenderer are to find and refer to the detail drawings and specification for clarity and the full extent of descriptions when pricing ALL the items in this trade. No claim in this regard will be entertained.</p> <p><u>Descriptions.:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers and shall be galvanised unless otherwise described.</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>			
Carried to Collection		R	
<p>Section No. 2</p> <p>Building Works</p> <p>Bill No. 10</p> <p>STRUCTURAL STEELWORK</p> <p><i>BILL OF ESTIMATE</i></p> <p><i>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</i></p>			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Note.:

Tenderer are advised to acquaint themselves with the structural engineer's structural steel layout and details with drawing numbers 18008/CE/500 and 18008/CE/501 before pricing this section. Should there be any discrepancies between these bills of quantities and the engineer's structural steel layout and details, the latter shall take precedence over these bills of quantities.

GALVANISED PURLINS, RAILS, FASCIAS, ETC.**Purlins and rails bolted to steel:**

1	175 x 75 x 20 x 2.5 x 6.8kg/m Lipped channel section purlins bolted.	t	6.75
2	150 x 75 x 20 x 2.5 Lipped channel section purlins bolted.	t	0.31

STEEL COLUMNS AND BEAMS**Welded columns in single lengths with flat section base, top, bearer and connection plates bolted to**

3	254 x 146 x 31mm I-section columns.	t	2.95
4	IPE 200 x 100 x 22mm columns.	t	1.36

Welded bracing, etc.:

5	70 x 70 x 6mm Angle section bracing.	t	0.770
6	90 x 90 x 6mm Angle section bracing.	t	4.051
7	80 x 80 x 6mm Angle section bracing.	t	2.172
8	60 x 60 x 6mm Angle section bracing.	t	2.431
9	50 x 50 x 6mm Angle section bracing.	t	0.020

Bolts to columns, etc.:

10	M10 bolts.	No	16
11	M12 bolts.	No	340

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STRUCTURAL STEELWORK
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	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.11</u></p> <p><u>METALWORK</u></p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</p> <p><u>SUPPLEMENTARY PREAMBLES:</u></p> <p><u>Descriptions.:</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>Metalwork described as holed for bolt(s) shall be deemed to exclude the bolts unless otherwise described.</p>			
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<p>Section No. 2</p> <p>Building Works</p> <p>Bill No. 11</p> <p>METALWORK</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>MILD STEEL GATES, SCREENS, ETC</u>				
<u>Welded gates, screens, etc.:</u>				
1	(Gate type G01) Single gate 1100 x 2250mm high formed of 50 x 50 x 3mm hollow section frame all round with two 50 x 50 x 3mm horizontal intermediate rails, each panel filled in with 10mm diameter solid vertical bars at 100mm centres, the gate fitted with two 6mm thick steel plate earsholed for padlocks (elsewhere measured) and hung on a pair of approved heavy duty hinges (elsewhere measured).	No	14	
2	(Gate type G03) Single sliding gate 1000 x 2300mm high formed of 50 x 50 x 3mm hollow section frame all round with two 50 x 50 x 3mm horizontal intermediate rails, each panel filled in with 10mm diameter solid vertical bars at 100mm centres, the gate fitted with two 6mm thick steel plate ears holed for padlocks (elsewhere measured) and hung on a pair of approved heavy duty hinges (elsewhere measured). Refer to architects drwainig No. 502.	No	35	
3	(Gate type G04) Single gate 1100 x 1800mm high formed of 50 x 50 x 3mm hollow section frame all round with two 50 x 50 x 3mm horizontal intermediate rails, each panel filled in with 10mm diameter solid vertical bars at 100mm centres, the gate fitted with two 6mm thick steel plate earsholed for padlocks (elsewhere measured) and hung on a pair of approved heavy duty hinges (elsewhere measured).	No	3	
4	(Gate type G05) Double gate 1450 x 1800mm high overall, with one leaf size 900 x 1800 and other leaf size 450 x 1800mm high each leaf comprising 50 x 50 x 3mm hollow section frame all round with mitred corners, two 50 x 50 x 3mm horizontal intermediate rails spaced equally apart, 10mm diameter solid vertical bar sat 100mm centres between rails and frame, fitted with two 6mm thick steel plate ears holed for padlocks (elsewhere measured) and hung on three approved heavy duty hinges welded to angle posts (elsewhere measured).	No	2	
Carried to Collection				R
Section No. 2 Building Works Bill No. 11 METALWORK BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
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5	(Gate type G08) 5745 x 2250mm high including Double gate 1750 x 2250mm high overall, and detached screens 840 x 2250mm high each leaf comprising 50 x 50 x 3mm hollow section frame all round with mitred corners, two 50 x 50 x 3mm horizontal intermediate rails spaced equally apart, 10mm diameter solid vertical bar sat 100mm centres between rails and frame, fitted with two 6mm thick steel plate ears holed for padlocks (elsewhere measured) and hung on three approved heavy duty hinges welded to angle posts (elsewhere measured). Refer to architects drawing No. 507.	No	4		
6	(Gate type G02) Double gate 1900 x 2250mm high overall, each leaf comprising 50 x 50 x 3mm hollow section frame all round with mitred corners, two 50 x 50 x 3mm horizontal intermediate rails spaced equally apart, 10mm diameter solid vertical bar sat 100mm centres between rails and frame, fitted with two 6mm thick steel plate ears holed for padlocks (elsewhere measured) and hung on three approved heavy duty hinges welded to angle posts (elsewhere measured).	No	8		
7	(Gate type G09) 8510 x 2250mm overall with 2No. double gate 1750 x 2250mm high overall, each leaf comprising 50 x 50 x 3mm hollow section frame all round with mitred corners, two 50 x 50 x 3mm horizontal intermediate rails spaced equally apart, 10mm diameter solid vertical bar sat 100mm centres between rails and frame, fitted with two 6mm thick steel plate ears holed for padlocks (elsewhere measured) and hung on three approved heavy duty hinges welded to angle posts (elsewhere measured). Refer to architect's drawing No. 505.	No	2		
8	50 x 50 x 5mm Thick angle section post with one flange five times holed for and bolted to brickwork (Bolts elsewhere measured).	No	150		
9	Ditto, but with three heavy duty hinges welded on other flange.	No	182		
10	12mm Chemical anchor.	No	272		
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Section No. 2 Building Works Bill No. 11 METALWORK BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

11	"CISA Security" or similar and approved 22mm gate lock (Code: 42032) complete with cylinder (Code: OG345-05), striker plate (Code: 06079-20) and a 22mm rose set (Code: 06012-00) fitted in a 25 x 110mm high metal weld-on box size 100 x 95 x 25mm.	No	68		
	<u>STEEL ROLLER SHUTTERS, ETC.</u>				
	<u>Mild steel roller shutters, guides, canopy cover(s), etc., fixed to brick jambs and concrete lintel over.:</u>				
12	Between walls push-up roller shutter for 5550mm wide x 1295mm high opening with 75 x 0.8mm thick slates, ratchet for spring winder, neoprene weather strip to bottom edge and two barrel bolts (Type R02 as per Architects Door Schedule with drawing no: 501).	No	1		
	<u>PRESSED STEEL TRANSFORMER ROOM DOORS AND FRAMES</u>				
	<u>Galvanised pressed steel strongroom doors:</u>				
13	'Mutual Austen Safes' or equal and approved strongroom door, overall size 813 x 2032 with frame SABS Category 1 strongroom with 7 -lever security keylock and 3-wheel combination lock, all finished with rustproof undercoat (Code: NSD-S00) (refer to architect's drawing No. 500).	No	3		
	<u>PRESSED STEEL DOOR FRAMES</u>				
	<u>1,6mm Standard pressed steel double rebated frames suitable for half brick walls.:</u>				
14	Frame for door 813 x 2 032mm high.	No	16		
	<u>1,6mm Standard pressed steel double rebated frames suitable for one brick walls.:</u>				
15	Frame for door 813 x 2 032mm high.	No	159		
16	Frame for door 900 x 2 032mm high.	No	5		
17	Frame for door 1 511 x 2 032mm high.	No	14		
	Carried to Collection			R	
	Section No. 2 Building Works Bill No. 11 METALWORK BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

HOT-DIPPED GALVANISED STEEL WINDOWS

Unless otherwise described burglar bars to be made of 25 x 5mm flat section mild steel bars, according to standard NBP2 pattern, welded at all intersections and against window frames

Servicing:

When necessary, all protection plastic tape or wrapping shall be removed and the windows and doors shall be thoroughly cleaned and tested, serviced with all necessary adjustments and / or repairs carried out before handing over the Works.

References:

The references given in the descriptions are to the respective types of windows, doors, etc. on the architect's schedule (Drawing No.510-512) included at the back of this bill of quantities.

Standard windows of school type heavy steel sections plugged to brickwork or concrete with and including standard 25 x 5mm flat bar burglar proofing welded on to inside of opening and fixed sections:

18	Window overall size 889 x 854mm high.	No	80
19	Window overall size 550x 685mm high.	No	119
20	Window overall size 889 x 1311mm high.	No	282
21	Window overall size 1 000 x 600mm high.	No	14
22	Window overall size 1 511 x 1264mm high.	No	12

STEEL LOUVRE PANELS

Heavy duty type louvre panels screwed into steel window frames:

23	Panel 850mm diameter circular type louvres.	No	48
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BILL OF ESTIMATE
QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

PURPOSE MADE ALUMINIUM APPROVED DOORS, SHOPFRONTS AND WINDOWS, FRAMES AND FIXED SECTIONS, WITH GLAZING IN ACCORDANCE WITH SANS 10400 CODE OF PRACTICE PART N, THE FRAMES OF 76 X 25 MM HOLLOW SECTIONS FIXED IN OPENINGS IN BRICKWORK OR TO STRUCTURAL STEEL, IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

Tenderers are advised to acquaint themselves with the Architect's window and door schedules with drawing numbers 505 and 500 - 501 respectively before pricing this section. Should there be any discrepancies between these bills of quantities and the architect's window and door schedules, the architect's window and door schedule shall take precedence over these bills of quantities.

No claim of any nature whatsoever will be considered after submission of this tender, due to the failure of the contractor to fulfil the aforementioned obligation.

The following glazed with 4mm Low-E clear glass and safety glass where applicable (refer to window schedule No. 512), with gasket and powder coated glazing beads unless otherwise described. All glazing to comply with SABS 0137 and SANS 10400.:

24	Window overall size 1000 x 935mm high.	No	1
25	Window overall size 2000 x 595mm high.	No	6

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	<p><u>Frames are to be of 'Primador' or equal and approved powder coated aluminium sections, constructed and installed according to the guidelines of The Association of Architectural Aluminium Manufactures of South Africa (AAASA). Glazing is to be carried out in strict accordance with the SABS 0137/2000 Code of Practice: "The Installation of Glazing in Buildings" and where required, safety glazing materials must comply with part N of SABS 0400. All shopfronts and windows must be weatherproofed and silicone sealed inside and out and all aluminium is to be protected during installation and for the duration of construction work by removable PVC tape. (Refer to the 'Door Schedule' on Architects drawing No. 507:</u></p>				
26	<p>Sliding door overall size 2000 x 2125mm high.</p> <p><u>ALUMINIUM LOUVRE PANELS</u></p> <p><u>Natural anodised aluminium "Trox AGS type" or similar approved louvre units fixed in opening of 44mm thick timber door (Timber door and opening measured elsewhere).:</u></p>	No	6		
27	<p>400 x 400mm High louvre unit.</p>	No	110		
	<p align="center">Carried to Collection</p> <p>Section No. 2 Building Works Bill No. 11 METALWORK BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>		R		

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

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METALWORK

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
	<u>SECTION NO.1</u>				
	<u>BUILDING WORK</u>				
	<u>BILL NO.12</u>				
	<u>PLASTERING</u>				
	The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.				
	<u>SCREEDS</u>				
	<u>Screeds on concrete.:</u>				
1	30mm Thick on floors and landings.	m2	5 363		
2	Average 50mm thick on floors to falls and currents.	m2	6		
	<u>Self-levelling screeds applied with adjustable leveller followed by spike roller on concrete.:</u>				
3	2.5mm Thick on floors and landings.	m2	3 621		
4	2.5mm Thick on treads and risers of stairs.	m2	5		
	<u>INTERNAL PLASTER</u>				
	<u>Cement plaster on brickwork:</u>				
5	On internal walls.	m2	8 291		
6	On narrow widths.	m2	193		
	<u>EXTERNAL PLASTER</u>				
	<u>Cement plaster on brickwork:</u>				
7	On external walls.	m2	419		
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	Section No. 2				
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	PLASTERING				
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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.13</u></p> <p><u>TILING</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in 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 range of products as recommended by the manufacturer of the tiles.</p>			
Carried to Collection		R	
<p>Section No. 2</p> <p>Building Works</p> <p>Bill No. 13</p> <p>TILING</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

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Bill No. 13

TILING

BILL OF ESTIMATE**QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD**

	Quantity	Rate	Amount
<p><u>SECTION NO.1</u></p> <p><u>BUILDING WORK</u></p> <p><u>BILL NO.14</u></p> <p><u>PLUMBING AND DRAINAGE</u></p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>'Polycop' polypropylene pipes.:</u></p> <p>Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with 'Fast-fuse' heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated.</p> <p>Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions.</p> <p>All pipe diameters are nominal external.</p> <p><u>uPVC pipes and fittings.:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p> <p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Building Works Bill No. 14 PLUMBING AND DRAINAGE BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			
		R	

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Copper pipes.:

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

Fixing of pipes.:

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

Reducing fittings.:

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

Excavations.:

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

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

Laying, backfilling, bedding, etc of pipes.:

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

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BILL OF ESTIMATE

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

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

Flush pans.:

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

Stainless steel basins, sinks, wash troughs, urinals, etc.:

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.

Waste unions.:

Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

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PLUMBING AND DRAINAGE
BILL OF ESTIMATE
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>SANITARY FITTINGS</u>					
<u>"Franke Model" or similar and approved pressed stainless steel 'drop-in' sinks.:</u>					
1	"Quinline QLX611" 500 x 900mm Sink (Code: 18CQ820000) with one bowl fitted to counter top (counter top elsewhere measured).	No	9		
<u>"Vaal" or similar approved.:</u>					
2	510 x 400mm "Daisy" white vitreous china lavatory wash hand basin (Code: 19VW015) with stand, two tap hole plugs including integrated overflow and chain stay hole, bolted to wall and sealed with silicone sealant where basin meets wall.	No	50		
3	510 x 405mm "Hibiscus" white vitreous china wash hand basin (Code: 702303AV), one tap hole plugs including integrated overflow and chain stay hole, bolted to wall and sealed with silicone sealant where basin meets wall.	No	7		
4	"Hibiscus Elite" close coupled 90 degree outlet open rim front single flush suite complete with lid and fitments (code 772402), top dual flush suite 6/3 litres (Code 772401 with jazz thermoset toilet seat (code 8531Z0).	No	47		
5	"Junior" low level suite close-couple water closet suite (product code: 751358) comprising 104 degrees outlet wash down pan (code 751300) complete with lid and fitments, and Junior Jazz seat (code 8532Z000) and matching 6 litre cistern (Code 7116DP).	No	9		
6	"Pearl paraplegic" Vitreous China semi-close coupled suite (Code: 7300SC) comprising 90 degree outlet open rim washdown pan and matching 9 litre cistern complete with lid, fitments and purpose-made chromium plated side flush lever and purpose made thermoset seat and cover plate.	No	7		
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Section No. 2 Building Works Bill No. 14 PLUMBING AND DRAINAGE BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

7	415 x 275 x 315mm "Flatback" white vitreous china wall mounted urinal (Code: 705326) including 38mm chromium plated domical grating (Code: 8787Z0 and chromium plated top inlet spreader (Code: 8543Z0), fixed on and including two hanger brackets (Code: 8127Z0).	No	17		
8	Stainless steel for laboratory sinks, photographic equipment, etc.	No	27		
<u>WASTE UNIONS, ETC.</u>					
<u>"Cobra Watertech" or similar approved:</u>					
9	32mm Basin waste with plug and chain.	No	84		
10	40mm Chrome brass bath / sink waste union with plug.	No	9		
<u>TRAPS, ETC.</u>					
<u>'Plumbcrazy' traps or other approved uPVC.:</u>					
11	40mm "P" or "S" trap.	No	63		
12	32mm Chrome plated bottle trap with 75mm deep re-seal, adjustable telescopic pipe and 32mm outlet.	No	101		
<u>'Franke' traps or other approved uPVC.:</u>					
13	"SPAZI F/1" Single Bowl Plumbing Kit.	No	9		
<u>TAPS, VALVES, ETC.</u>					
<u>"Walcro" or equal and approved valves, flush pipes, etc.:</u>					
14	25mm (Code: 106C-XP) BSP exposed lever operated, chrome plated, DZR brass toilet flush valve complete with top entry flush pipe.	No	56		
15	25mm (Code: 104HT) BSP exposed extended lever operated, chrome plated, DZR brass toilet flush valve complete with isolating check valve, telescopic adjustment and top entry flush pipe.	No	7		
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Section No. 2 Building Works Bill No. 14 PLUMBING AND DRAINAGE BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
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16	15mm (Code: 330UR) BSP exposed, chrome plated, DZR brass urinal flush valve complete with flow control, strainer and no-hold feature.	No	17		
17	15mm (Code: UR15TP) offset exposed chrome plated urinal flush pipe.	No	17		
<u>"Cobra" or equal and approved taps, etc.:</u>					
18	"Cobra" or similar approved chrome plated 4-way shower/bath mixer diverter including 1/2 shower outlet and 3/4 female bath outlet.	No	6		
19	"Stella Classic" or similar approved basin pillar tap code: 04ST331115.	No	154		
20	"Stella Classic" or similar approved sink mixer - one hole code: 04ST3396.	No	9		
21	"Stella classic" or similar approved stop taps-undertile tap code: 04ST332815.	No	6		
22	"Cobra" or similar approved single function shower head with ball joint connector (Code: 04CB076NITRO) on overhead shower arm.	No	6		
23	"Cobra" or similar approved elbow action pillar tap red indice code: 505-21R.	No	7		
<u>SANITARY PLUMBING (PROVISIONAL)</u>					
<u>uPVC pipes:</u>					
24	40mm Pipes fixed to or chased into brickwork.	m	278		
25	50mm Pipes fixed to or chased into brickwork.	m	407		
26	110mm Pipes fixed to or chased into brickwork.	m	182		
<u>Extra over uPVC pipes for fittings.:</u>					
27	40mm Bend.	No	200		
28	50mm Bend.	No	354		
29	40mm Junction.	No	284		
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Section No. 2 Building Works Bill No. 14 PLUMBING AND DRAINAGE BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

30	50mm Junction.	No	284		
31	110mm End cap.	No	63		
32	110mm Access bent pan connector.	No	63		
33	110mm Access bend.	No	63		
34	110mm Access junction.	No	63		
35	110mm Access bent pan connector.	No	63		
36	40mm 'GI Two-way' vent anti-vac valve.	No	63		
	<u>Pre-cast concrete gulleys.:</u>				
37	Gulley not exceeding 500mm deep.	No	9		
	<u>Sundries.:</u>				
38	Testing waste pipe system.		Item		
	<u>WATER AND FIRE SUPPLIES</u>				
	<u>Class 2 copper pipes.:</u>				
39	15mm Pipes chased into brick walls.	m	441		
40	22mm Pipes chased into brick walls.	m	435		
41	22mm Pipes laid in and including trenches.	m	320		
42	35mm Pipes laid in and including trenches.	m	264		
	<u>Extra over class 2 copper and polypropylene pipes for brass compression fittings.:</u>				
43	15mm Fittings.	No	682		
44	22mm Fittings.	No	602		
45	35mm Elbow.	No	77		
46	35mm Bend	No	58		
47	35mm Tee	No	39		
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**CONSTRUCTION OF PROPOSED NEW
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48	35mm Reducing tee	No	23		
	<u>Extra over class 2 copper pipes for capillary fittings:</u>				
49	15mm Fittings.	No	9		
50	22mm Fittings.	No	8		
51	35mm End plug	No	5		
52	35mm Adaptor coupling.	No	4		
53	35mm Elbow.	No	5		
54	35mm Tee.	No	3		
55	35mm Tee adaptor coupling.	No	4		
56	35mm Reducing coupling.	No	5		
57	35mm Reducing adaptor coupling	No	5		
58	35mm Reducing bent adaptor coupling	No	2		
59	35mm Reducing elbow	No	5		
60	35mm Reducing tee.	No	4		
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Section No. 2 Building Works Bill No. 14 PLUMBING AND DRAINAGE BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

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**CONSTRUCTION OF PROPOSED NEW
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			Quantity	Rate	Amount
<u>SECTION NO.1</u>					
<u>BUILDING WORK</u>					
<u>BILL NO.15</u>					
<u>GLAZING</u>					
The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.					
<u>GLAZING TO WOOD WITH PINNED-ON BEADS (BEADS ELSEWHERE)</u>					
<u>6.50mm Normal strength (NS) clear laminated safety glass.:</u>					
1	Panes exceeding 0,1m ² and not exceeding 0.5m ² .	m2	617		
2	Panes exceeding 0,5m ² and not exceeding 2m ² .	m2	18		
<u>BATHROOM FITTINGS</u>					
<u>Franke or equal and approved mirrors.:</u>					
3	600 x 600 x 6mm Mirror with concealed resistant fixings screwed to wall with stainless steel screws.	No	50		
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Section No. 2 Building Works Bill No. 15 GLAZING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

		Quantity	Rate	Amount
<u>SECTION 1</u>				
<u>BUILDING WORK</u>				
<u>BILL NO.16</u>				
<u>PAINTWORK</u>				
<u>PREAMBLES</u>				
<p>The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</p>				
<u>COLOURS</u>				
<p>Unless otherwise described, all paintwork shall be deemed to have a colour value in excess of 7 the Munsel system in accordance with SANS 1091</p>				
<u>PAINTWORK, ETC. TO NEW WORK</u>				
<u>ON FLOATED PLATSER</u>				
<u>Prepare and apply one coat alkali resistant primer and two coats "PVA" emulsion paint for interior use, on.:</u>				
1	On internal walls.	m2	7 278	
2	On external walls.	m2	419	
<u>Two coats Epoxy paint on:</u>				
3	Screeded floors.	m2	84	
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<p>Section No. 2 Building Works Bill No. 16 PAINTWORK BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>ON PLASTER BOARD</u>					
<u>Prepare and apply one coat Primer, one coat alkali based universal undercoat and two coats superior quality universal enamel paint.:</u>					
4	Ceilings and cornices.	m2	3 869		
<u>ON METAL SURFACES</u>					
<u>Prepare and apply one coat universal undercoat and two coats 'Plascon' superior quality universal enamel paint, on galvanised steel, etc.:</u>					
5	On door frames.	m2	600		
<u>Prepare and apply one coat water based primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on galvanised steel, etc.:</u>					
6	On doors.	m2	12		
7	On burglar bars, gates (both sides measured) on full flat area.	m2	284		
8	On windows (both sides measured) on full flat area.	m2	1 324		
<u>Prepare and apply one coat alkyd based universal undercoat and one coat superior quality universal enamel paint, on work in sound condition.:</u>					
9	On structural steel members.	m2	1 099		
<u>ON WOOD</u>					
<u>Stop, sand down and prepare wood surfaces and apply one coat pink wood primer and two coats 'Plascon' velvagio on.:</u>					
10	On doors.	m2	820		
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Section No. 2 Building Works Bill No. 16 PAINTWORK BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

11	<p><u>Stop, sand down and prepare wood surfaces and apply three coats 'Plascon Woodcare Exterior Wood Dressing' or equal and approved stained oil preservative or equal and approved stained oil on.:</u></p> <p>On skirtings, rails, etc not exceeding 300 mm girth.</p>	m	2 272		
					R

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BILL OF ESTIMATE
QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
<u>SECTION NO.3</u>				
<u>ELECTRICAL INSTALLATIONS</u>				
<u>BILL NO.1</u>				
<u>PRELIMINARY AND GENERAL</u>				
Note: All items shall be priced for whatever cost may be considered necessary for Preliminary and General items to carry out the Electrical Installation in full, as detailed in the drawings, Specifications and Schedules, which shall include, but shall not be limited, to the following:				
<u>Fixed Costs</u>				
1	Site establishment and de-establishment - including but not limited to latrines, water, generators, fuel, all safety aspects, site office, etc.		SUM	
2	Providing site information to the Engineer upon request, marking up of drawing during construction and compiling of As-built drawings		SUM	
3	Electrical Certificate of Compliance (COC) for the entire installation		SUM	
4	Coding and Labelling of all plant and equipment, including cables and distribution boards		SUM	
<u>Time Related Costs</u>				
5	18 Month contractor period	No	18.00	

		Quantity	Rate	Amount
<u>BILL NO.2</u>				
<u>CABLING</u>				
Wiring with the following sizes of insulated copper conductor single core/multi strand cable in surface/recessed PVC conduit as required.				
All distances are to be confirmed by the contractor from the drawings provided and from site inspections.				
The contractor is to use SABS approved components.				
All cables shall be compliant to SANS 1507-3 requirements and recommendations				
All prices in this Section are required to exclude trenching (trenching is included in Section 3 of this bill)				
Bare copper earth conductors laid with cable in trenches or sleeve pipes and bonded to cables with plastic strapping at 2m centres				
<u>1.5 sq.mm general purpose wire, as indicated on the schematic diagrams</u>				
1	- Supply	m	16 000.00	
2	- Install	m	16 000.00	
<u>2.5 sq.mm general purpose wire, as indicated on the schematic diagrams</u>				
3	- Supply	m	21 000.00	
4	- Install	m	21 000.00	
<u>4 sq.mm general purpose wire, as indicated on the schematic diagrams</u>				
5	- Supply	m	5 670.00	
6	- Install	m	5 670.00	
Carried to Collection			R	
Section No. 3 Electrical Installation Bill No. 2 CABLING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
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	<u>6 sq.mm general purpose wire, as indicated on the schematic diagrams</u>				
7	- Supply	m	60.00		
8	- Install	m	60.00		
	<u>4 sq.mm 1-phase 3-core Cu PVC SWA cable compatible with SANS 1507-3 for exterior parking lights and to refuse area, including junction boxes, cable termination and connections</u>				
9	- Supply	m	200.00		
10	- Install	m	200.00		
11	<u>10 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Main DB to Solar DB, including cable termination and connections</u>				
	- Supply	m	10.00		
12	- Install	m	10.00		
	<u>10 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk to Care Takers, including cable termination and connections</u>				
13	- Supply	m	110.00		
14	- Install	m	110.00		
	<u>10 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Main DB to Guard House, including cable termination and connections</u>				
15	- Supply	m	90.00		
16	- Install	m	90.00		
	<u>10 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Kiosk 2 to Pump House, including cable termination and connections</u>				
17	- Supply	m	70.00		
18	- Install	m	70.00		
	Carried to Collection			R	
	Section No. 3				
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	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 1 to 4 CR Block A2, including cable termination and connections</u>				
19	- Supply	m	65.00		
20	- Install	m	65.00		
	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 1 to 4 CR Block A3, including cable termination and connections</u>				
21	- Supply	m	15.00		
22	- Install	m	15.00		
	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 1 to 3 CR Block B1, including cable termination and connections</u>				
23	- Supply	m	55.00		
24	- Install	m	55.00		
	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 1 to 3 CR Block B2, including cable termination and connections</u>				
25	- Supply	m	30.00		
26	- Install	m	30.00		
	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 1 to 3 CR Block B3, including cable termination and connections</u>				
27	- Supply	m	45.00		
28	- Install	m	45.00		
	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 1 to Multi-Purpose Classroom Block D, including cable termination and connections</u>				
29	- Supply	m	15.00		
30	- Install	m	15.00		
	Carried to Collection			R	
	Section No. 3 Electrical Installation Bill No. 2 CABLING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
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	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 2 to 4 CR Block A1, including cable termination and connections</u>				
31	- Supply	m	50.00		
32	- Install	m	50.00		
	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 2 to 4 CR Block A4, including cable termination and connections</u>				
33	- Supply	m	35.00		
34	- Install	m	35.00		
	<u>16 sqmm 1-phase 3-core SWA cable compatible with SANS 1507-3 from Kiosk 2 to Grade R (C), including cable termination and connections</u>				
35	- Supply	m	70.00		
36	- Install	m	70.00		
	<u>16 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Kiosk 2 to the Tuckshop (L), and to the Pump Room (M), including cable termination and connections</u>				
37	- Supply	m	200.00		
38	- Install	m	200.00		
	<u>25 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Main DB to Admin (G), including cable termination and connections</u>				
39	- Supply	m	65.00		
40	- Install	m	65.00		
	<u>25 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Main DB to Media Centre + Library (E), including cable termination and connections</u>				
41	- Supply	m	35.00		
Carried to Collection				R	
Section No. 3					
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**CONSTRUCTION OF PROPOSED NEW
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42	- Install	m	35.00		
	<u>35 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Kiosk 2 to Multi-Purpose Hall (N), including cable termination and connections</u>				
43	- Supply	m	100.00		
44	- Install	m	100.00		
	<u>95 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Main DB to Kiosk 1, including cable termination and connections</u>				
45	- Supply	m	150.00		
46	- Install	m	150.00		
	<u>95 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Main DB to Kiosk 2, including cable termination and connections</u>				
47	- Supply	m	200.00		
48	- Install	m	200.00		
	<u>150 sqmm 3-phase 4-core ECC cable compatible with SANS 1507-3 from Municipal Kiosk to Main DB, including cable termination and connections</u>				
49	- Supply	m	200.00		
50	- Install	m	200.00		
Carried to Collection				R	
Section No. 3					
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
	<u>BILL NO.3</u>				
	<u>TRENCHING</u>				
	The Contractor shall apprise himself of all existing services and make sure that these services are not damaged during excavations				
	Cables may not be covered before the Consulting Engineer has inspected and approved the cables and trenches. If the Contractor disregards this requirement the trenches may be re-opened at the discretion of the Consulting Engineer at the Contractor's expense.				
	<u>Concrete cable markers shall be introduced at the beginning and at the end of each cable route (for example, where a cable enters a distribution kiosk or a building), at changes in direction, at all joints and above the entrance and exit of cable sleeves along the entire route of the cable at intervals not exceeding 50 m.</u>				
1	- Supply	No	14.00		
2	- Install	No	14.00		
	<u>Power Cable Manhole - FC chamber, with bases, ports and a concrete coverslab with a hinged DMC polymer lid which is lockable including excavation of dimensions 600mm wide x 800mm wide x 800mm deep</u>				
3	- Supply	No	15.00		
4	- Install	No	15.00		
	<u>Data Sleeve Manhole - FC chamber, with bases, ports and a concrete coverslab with a hinged DMC polymer lid which is lockable including excavation of dimensions 600mm wide x 600mm wide x 600mm deep</u>				
5	- Supply	No	15.00		
6	- Install	No	15.00		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 3				
	TRENCHING				
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**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

7	Excavation for Power Cable (500mm wide x 700mm deep) in earth for cable trenches, backfilling of trenches with 150mm of soft sifted bedding material	m	600.00		
8	Excavation for Telephone/Data Sleeves (500mm wide x 500mm deep) in earth for trenches, backfilling of trenches with 150mm of soft sifted bedding material	m	250.00		
9	Extra over trench excavations in earth for excavation in soft rock	m3	1.00		
10	Extra over trench excavations in earth for excavation in hard rock	m3	1.00		
	<u>75mmØ HDPE 550kPA sleeves between data manholes as well as Telephone DB and entries chased into wall, including manufacturer approved couplings, sealing rings, end plugs and non-hardening sealant. Provide 2 x 1.6sqmm galvanised draw wires into sleeves</u>				
11	- Supply	m	600.00		
12	- Install	m	600.00		
	<u>75mmØ HDPE sleeves for DB entries chased into wall, including manufacturer approved couplings, sealing rings, end plugs and non-hardening sealant for main DB and Kiosk entries</u>				
13	- Supply	m	50.00		
14	- Install	m	50.00		
	<u>110mmØ HDPE 550kPA sleeves between data and power manholes as well as Telephone DB and entries chased into wall, including manufacturer approved couplings, sealing rings, end plugs and non-hardening sealant. Provide 2 x 1.6sqmm galvanised draw wires into each sleeve</u>				
15	- Supply	m	3 000.00		
16	- Install	m	3 000.00		
	Carried to Collection			R	
	Section No. 3 Electrical Installation Bill No. 3 TRENCHING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

<p>Electrical Installation</p> <p>Bill No. 3</p> <p>TRENCHING</p> <p><u>COLLECTION</u></p>				
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
<u>BILL NO.5</u>					
<u>CONDUIT, SLEEVES & TRUNKING</u>					
All conductor tubes and fittings shall comply with the requirements of the SANS 1162.					
The type of conduit and accessories shall be of the non-metallic type where chased into the wall going down but metallic type Bosal for within the roof space					
For lighting circuits, the conduit used shall have an external diameter of 20mm					
For socket outlet circuits and data points, the conduit used shall have an external diameter of 25mm					
Only installed quantites may be measured and claimed for on site during construction. All wastage if for the contractors account					
All conduit, trunking, power skirting and sleeve accessories such as hangers, anchors, nuts and bolts, bends, tees, elbows, junction boxes, glands, clamps, fittings, end caps, brass bushes, outlet boxes, 1-way, 2-way, 3-way, 4-way, back and side entry round boxes, lids and covers etc. are to be included in the price provided in this section and cannot be claimed separately					
<u>M20 PVC conduit, chased 50mm wide x 40mm deep and make good - to be chased into wall and installed in floor</u>					
1	- Supply	m	5 000.00		
2	- Install	m	5 000.00		
<u>M20 STEEL/BOSAL conduit for wiring in the the roof space</u>					
3	- Supply	m	9 000.00		
4	- Install	m	9 000.00		
Carried to Collection				R	
Section No. 3 Electrical Installation Bill No. 5 CONDUIT, SLEEVES & TRUNKING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>M25 PVC conduit, chased 50mm wide x 40mm deep and make good - to be chased into wall for plug circuits and lightning protection cabling</u>				
5	- Supply	m	1 500.00		
6	- Install	m	1 500.00		
	<u>M25 STEEL/BOSALconduit complete with hangers, anchors, nuts and bolts, bends, tees, elbows, junction boxes, clamps, fittings and end caps, used primarily for wiring in the roof space for light circuits, telephone/data points, etc.</u>				
7	- Supply	m	1 500.00		
8	- Install	m	1 500.00		
	<u>M25 STEEL/BOSALconduit complete with hangers, anchors, nuts and bolts, bends, tees, elbows, junction boxes, clamps, fittings and end caps, steel saddles, used primarily for the fire detection system cabling</u>				
9	- Supply	m	2 000.00		
10	- Install	m	2 000.00		
	<u>1.6mm galvanised Draw Wire in all conduit and sleeves, including data sleeves and data conduit</u>				
11	- Supply	m	5 000.00		
12	- Install	m	5 000.00		
	<u>P2000 steel trunking</u>				
13	- Supply	m	600		
14	- Install	m	600		
	<u>P9000 steel trunking</u>				
15	- Supply	m	600		
16	- Install	m	600		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 5				
	CONDUIT, SLEEVES & TRUNKING				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Electrical Installation

Bill No. 5

CONDUIT, SLEEVES & TRUNKING

COLLECTION

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Section No. 3

Electrical Installation

Bill No. 5

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BILL OF ESTIMATE**QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD**

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
	<u>BILL NO.7</u>				
	<u>LIGHTING</u>				
	<u>LIGHT FITTINGS</u>				
	All cover plates must be secured with two sunken-chromed vandal proof screws.				
	Where not specified below, lamps to have a lifespan of at least 10,000h				
	<u>5FT Single Light Fitting with Prismatic Diffuser housing 1.5m x single 25W T8 LED tube, CRI>80, 4000k, 3000lm, frosted, suitable for classrooms and office, such as Phillips Essential LEDtube Universal 1500mm 25W840 T8 or other equivalent and approved. Nominal Lifetime 30,000 h</u>				
	<u>4 Classroom & HOD - A1</u>				
1	- Supply	No	8.00		
2	- Install	No	8.00		
	<u>4 Classroom & HOD - A2</u>				
3	- Supply	No	12.00		
4	- Install	No	12.00		
	<u>4 Classroom & HOD - A3</u>				
5	-Supply	No	8.00		
6	- Install	No	8.00		
	<u>4 Classroom & HOD - A4</u>				
7	Supply	No	8.00		
8	Install	No	8.00		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 7				
	LIGHTING				
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>3 Classroom & Toilets - B1</u>				
9	- Supply	No	13.00		
10	- Install	No	13.00		
	<u>3 Classroom & Toilets - B2</u>				
11	-Supply	No	14.00		
12	-Install	No	14.00		
	<u>3 Classroom & toilets - B3</u>				
13	-Supply	No	14.00		
14	-Install	No	14.00		
	<u>Grade R Classroom - C</u>				
15	-Supply	No	12.00		
16	-Install	No	12.00		
	<u>Caretaker - F</u>				
17	-Supply	No	1.00		
18	-Install	No	1.00		
	<u>Guard house - K</u>				
19	-Supply	No	2.00		
20	-Install	No	2.00		
	<u>Adminastration Bldg - G</u>				
21	-Supply	No	9.00		
22	-Install	No	9.00		
	<u>Tuckshop - L</u>				
23	-Supply	No	7.00		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
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	LIGHTING				
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**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

24	-Install	No	7.00		
	<u>Multi Purpose Hall - N</u>				
25	-Supply	No	35.00		
26	-Install	No	35.00		
	<u>5FT Vapour Proof IP65 Rated Double Light Fitting 1.5m x Double 25W T8 LED tube, CRI>80, 4000k, 3000lm, frosted, suitable for classrooms and office, such as Phillips Essential LEDtube Universal 1500mm 25W840 T8 or other equivalent and approved. Nominal Lifetime 30,000 h</u>				
	<u>Multi Purpose Hall - N + Science Lab</u>				
27	-Supply	No	35.00		
28	-Install	No	35.00		
	<u>Indoor bulkhead luminaire with 1 x 9 Watt Replacement LED lamps with ballast. Clear prismatic cover/lens with white housing IP44 rated or other LED equivalent and approved.</u>				
	<u>3 Classroom & toilets - B1</u>				
29	- Supply	No	8.00		
30	- Install	No	8.00		
	<u>3 Classroom & toilets - B2</u>				
31	- Supply	No	8.00		
32	- Install	No	8.00		
	<u>3 Classroom & toilets - B3</u>				
33	- Supply	No	8.00		
34	- Install	No	8.00		
	<u>Administration Bldg - G</u>				
35	- Supply	No	7.00		
	Carried to Collection			R	
	Section No. 3 Electrical Installation Bill No. 7 LIGHTING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

36	- Install	No	7.00		
	<u>Multi Purpose Hall - N</u>				
37	-Supply	No	38.00		
38	- Install	No	38.00		
	<u>Outdoor bulkhead luminaire with 1 x 9 Watt Replacement LED lamps with ballast with opaque prismatic cover/lens with black die cast aluminium housing IP65 rated.</u>				
	<u>4 Classroom & HOD - A1</u>				
39	- Supply	No	20.00		
40	- Install	No	20.00		
	<u>4 Classroom & HOD - A2</u>				
41	- Supply	No	21.00		
42	- Install	No	21.00		
	<u>4 Classroom & HOD - A3</u>				
43	-Supply	No	20.00		
44	- Install	No	20.00		
	<u>4 Classroom & HOD - A4</u>				
45	-Supply	No	20.00		
46	-Install	No	20.00		
	<u>3 Classroom & Toilets - B1</u>				
47	- Supply	No	20.00		
48	- Install	No	20.00		
	<u>3 Classroom & Toilets - B2</u>				
49	-Supply	No	19.00		
	Carried to Collection			R	
	Section No. 3				
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Adminastration - G</u>				
65	- Supply	No	16.00		
66	- Install	No	16.00		
	<u>Refuse Area - J</u>				
67	- Supply	No	4.00		
68	- Install	No	4.00		
	<u>Electrical Room -K</u>				
69	-Supply	No	2.00		
70	-Install	No	2.00		
	<u>Tuckshop - L</u>				
71	- Supply	No	13.00		
72	- Install	No	13.00		
	<u>Multi Purpose Hall - N</u>				
73	- Supply	No	40.00		
74	- Install	No	40.00		
	<u>600x1200 Recessed Panel Lights for drop in Ceiling with 3m cordset and 5A plug</u>				
75	- Supply	m	192		
76	- Install	m	192		
	Carried to Collection			R	
	Section No. 3				
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>LIGHT SWITCHES</u>					
<u>Crabtree Classic light switch 100x50mm complete with coverplate and 100x50mm galvanised wall box (flush mount)</u>					
<u>Cover plates for light switches shall be of rust free metal, at least 1,2 mm thick. Paint finish shall be oven-baked enamel. The colour is as specified by the Architect or as reflected on the drawing. All cover plates are required to have vandle proof screws</u>					
<u>1-lever - 1 way</u>					
<u>4 Classroom & HOD - A1</u>					
77	- Supply	No	6.00		
78	- Install	No	6.00		
<u>4 Classroom & HOD - A2</u>					
79	- Supply	No	10.00		
80	- Install	No	10.00		
<u>4 Classroom & HOD - A3</u>					
81	-Supply	No	6.00		
82	- Install	No	6.00		
<u>4 Classroom & HOD - A4</u>					
83	-Supply	No	6.00		
84	-Install	No	6.00		
<u>3 Classroom & Toilets - B1</u>					
85	- Supply	No	7.00		
86	- Install	No	7.00		
Carried to Collection				R	
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>3 Classroom & Toilets - B2</u>				
87	-Supply	No	5.00		
88	-Install	No	5.00		
	<u>3 Classroom & toilets - B3</u>				
89	-Supply	No	5.00		
90	-Install	No	5.00		
	<u>Grade R - C</u>				
91	-Supply	No	5.00		
92	-Install	No	5.00		
	<u>Multi Purpose Classroom - D</u>				
93	- Supply	No	9.00		
94	- Install	No	9.00		
	<u>Library & Media Centre - E</u>				
95	- Supply	No	6.00		
96	- Install	No	6.00		
	<u>Caretaker - F</u>				
97	- Supply	No	1.00		
98	- Install	No	1.00		
	<u>Guard House - K</u>				
99	- Supply	No	2.00		
100	- Install	No	2.00		
	<u>Pump Room - M</u>				
101	- Supply	No	1.00		
	Carried to Collection			R	
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**CONSTRUCTION OF PROPOSED NEW
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102	- Install	No	1.00		
	<u>Administration - G</u>				
103	- Supply	No	16.00		
104	- Install	No	16.00		
	<u>Refuse Area - J</u>				
105	- Supply	No			
106	- Install	No			
	<u>Electrical Rm - K</u>				
107	-Supply	No	1.00		
108	-Install	No	1.00		
	<u>Tuckshop - L</u>				
109	- Supply	No	44.00		
110	- Install	No	44.00		
	<u>Multi Purpose Hall - N</u>				
111	- Supply	No	10.00		
112	- Install	No	10.00		
	<u>Crabtree Classic light switch 100x50mm complete with coverplate and 100x50mm galvanised wall box (flush mount)</u>				
	<u>1-lever, 2-way</u>				
	<u>Grade R Classroom - C</u>				
113	-Supply	No	4.00		
114	-Install	No	4.00		
	Carried to Collection			R	
	Section No. 3				
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Media & Library Ctr -E</u>				
115	-Supply	No	2.00		
116	-Install	No	2.00		
	<u>Occupancy Sensors</u>				
117	-Supply	No	45.00		
118	-Install	No	45.00		
	<u>Photoelectric Day/Night Sensors with Enclosure</u>				
119	-Supply	No	20.00		
120	-Install	No	20.00		
	<u>Emergency Exit Lights for Hall with Battery Backup</u>				
121	- Supply	m	6		
122	- Install	No	6		
	<u>4FT Double Light Fitting with Prismatic Diffuser housing 1.5m x double 2x25W T8 LED tube, CRI>80, 4000k, 3000lm, frosted, suitable for classrooms and office, such as Phillips Essential LEDtube Universal 1500mm 25W840 T8 or other equivalent and approved. Nominal Lifetime 30,000 h</u>				
	<u>4 Classroom & HOD - A1</u>				
123	- Supply	No	28		
124	- Install	No	28		
	<u>4 Classroom & HOD - A2</u>				
125	- Supply	No	28		
126	- Install	No	28		
	<u>4 Classroom & HOD - A3</u>				
127	- Supply	No	28		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 7				
	LIGHTING				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

128	- Install	No	28		
	<u>4 Classroom & HOD - A4</u>				
129	- Supply	No	28		
130	- Install	No	28		
	<u>3 Classroom & Toilets - B1</u>				
131	- Supply	No	20		
132	- Install	No	20		
	<u>3 Classroom & Toilets - B2</u>				
133	- Supply	No	20		
134	- Install	No	20		
	<u>3 Classroom & Toilets - B3</u>				
135	- Supply	No	20		
136	- Install	No	20		
	<u>Grade R Classroom - C</u>				
137	- Supply	No	20		
138	- Install	No	20		
	<u>Multi-purpose Classroom + Science Lab - D</u>				
139	- Supply	No	15		
140	- Install	No	15		
	<u>Caretaker - F</u>				
141	- Supply	No	1		
142	- Install	No	1		
Carried to Collection				R	
Section No. 3					
Electrical Installation					
Bill No. 7					
LIGHTING					
BILL OF ESTIMATE					
QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<p>Electrical Installation</p> <p>Bill No. 7</p> <p>LIGHTING</p> <p><u>COLLECTION</u></p>				
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Section No. 3
Electrical Installation
Bill No. 7
LIGHTING

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
	<u>BILL NO.8</u>				
	<u>SMALL POWER & POWER SKIRTING</u>				
	Provide Crabtree Classic socket outlet and isolators, 100x100mm complete with coverplate and 100x100mm galvanised wall box (flush mount). All socket outlets are required to have one three pin conventional plug and one RSA Euro/Diamond plug				
	Cover plates for socket outlets shall be of rust free metal, at least 1,2 mm thick. Paint finish shall be oven-baked enamel. The colour is as specified by the Architect or as reflected on the drawing				
	<u>4 Classroom & HOD - A1</u>				
1	- Supply	No	5.00		
2	- Install	No	5.00		
	<u>4 Classroom & HOD - A2</u>				
3	- Supply	No	6.00		
4	- Install	No	6.00		
	<u>4 Classroom & HOD - A3</u>				
5	-Supply	No	5.00		
6	- Install	No	5.00		
	<u>4 Classroom & HOD - A4</u>				
7	Supply	No	5.00		
8	Install	No	5.00		
	<u>3 Classroom & Toilets - B1</u>				
9	- Supply	No	5.00		
10	- Install	No	5.00		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 8				
	SMALL POWER & POWER SKIRTING				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>3 Classroom & Toilets - B2</u>				
11	-Supply	No	5.00		
12	-Install	No	5.00		
	<u>3 Classroom & toilets - B3</u>				
13	-Supply	No	5.00		
14	-Install	No	5.00		
	<u>Grade R Classroom - C</u>				
15	-Supply	No	7.00		
16	-Install	No	7.00		
	<u>Multi Purpose Classroom - D</u>				
17	- Supply	No	13.00		
18	- Install	No	13.00		
	<u>Library & Media Centre - E</u>				
19	- Supply	No	11.00		
20	- Install	No	11.00		
	<u>Caretaker - F</u>				
21	- Supply	No	2.00		
22	- Install	No	2.00		
	<u>Guard House - K</u>				
23	- Supply	No	2.00		
24	- Install	No	2.00		
	<u>Pump Room - M</u>				
25	- Supply	No	1.00		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 8				
	SMALL POWER & POWER SKIRTING				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

26	- Install	No	1.00		
	<u>Adminastration - G</u>				
27	- Supply	No	11.00		
28	- Install	No	11.00		
	<u>Refuse Area - J</u>				
29	- Supply	No			
30	- Install	No			
	<u>Electrical Rm - H</u>				
31	-Supply	No	1.00		
32	-Install	No	1.00		
	<u>Tuckshop - L</u>				
33	-Supply	No	5.00		
34	- Install	No	5.00		
	<u>Multi Purpose Hall - N</u>				
35	- Supply	No	26.00		
36	- Install	No	26.00		
	<u>10A 2 Pole - 100mm x 50mm IP65 Isolator (surface mount)</u>				
37	- Supply	No	10.00		
38	- Install	No	10.00		
	<u>20A 2 Pole - 100mm x 50mm IP65 Isolator (surface mount)</u>				
39	- Supply	No	40.00		
40	- Install	No	40.00		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 8				
	SMALL POWER & POWER SKIRTING				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

	<u>32A 2 Pole - 100mm x 50mm IP65 Isolator (surface mount)</u>				
41	- Supply	No	10.00		
42	- Install	No	10.00		
	<u>20A 3 Pole - 100mm x 50mm IP65 Isolator (surface mount)</u>				
43	- Supply	No	10.00		
44	- Install	No	10.00		
	<u>1.1 kW Motor Stop / Start Units with Built in Overload Protection</u>				
45	- Supply	No	2.00		
46	- Install	No	2.00		
	<u>Single socket outlet 100mm x 100mm with new RSA Euro plug (surface mount) IP65</u>				
47	- Supply	No			
48	- Install	No			
49	Power Skirting Supply and Install N8/P801 Steel 2 Compartment Power Skirting, Easter Oak, with End Caps, Slices and Accessories	m	220.00		
50	Supply and Install Power Skirting Socket Outlet and Covers, Normal	No	120.00		
51	Supply and Install Power Skirting Socket Outlet and Covers, Dedicated	No	120.00		
52	Supply and Install Power Skirting RJ45 Data Outlet with Cover	No	120.00		
53	Connection to Appliances	No	20		
54	Testing and Commissioning of Small Power Installation		Item		
	Carried to Collection			R	
	Section No. 3 Electrical Installation Bill No. 8 SMALL POWER & POWER SKIRTING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Electrical Installation

Bill No. 8

SMALL POWER & POWER SKIRTING

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SMALL POWER & POWER SKIRTING

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>3 Classroom & Toilets - B2</u>				
11	-Supply	No	1.00		
12	-Install	No	1.00		
	<u>3 Classroom & toilets - B3</u>				
13	-Supply	No	1.00		
14	-Install	No	1.00		
	<u>Grade R Classroom - C</u>				
15	-Supply	No	1.00		
16	-Install	No	1.00		
	<u>Multi Purpose Classroom - D</u>				
17	- Supply	No	1.00		
18	- Install	No	1.00		
	<u>Library & Media Centre - E</u>				
19	- Supply	No	1.00		
20	- Install	No	1.00		
	<u>Caretaker - F</u>				
21	- Supply	No	1.00		
22	- Install	No	1.00		
	<u>Guard House - K</u>				
23	- Supply	No	1.00		
24	- Install	No	1.00		
	<u>Pump Room - M</u>				
25	- Supply	No	1.00		
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	Section No. 3				
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	DISTRIBUTION BOARDS				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

26	- Install	No	1.00		
	<u>Administration - G</u>				
27	- Supply	No	1.00		
28	- Install	No	1.00		
	<u>Refuse Area - J</u>				
29	- Supply	No	1.00		
30	- Install	No	1.00		
	<u>Electrical Room - H</u>				
31	-Supply	No	1.00		
32	-Install	No	1.00		
	<u>Tuckshop - L</u>				
33	-Supply	No	1.00		
34	- Install	No	1.00		
	<u>Multi Purpose Hall - N</u>				
35	- Supply	No	1.00		
36	- Install	No	1.00		
	<u>Main DB</u>				
37	- Supply	No	1.00		
38	- Install	No	1.00		
	<u>Solar DB</u>				
39	- Supply	No	1.00		
40	- Install	No	1.00		
41	3-Phase meter c/w fuses and CTs	No	1.00		
	Carried to Collection			R	
	Section No. 3				
	Electrical Installation				
	Bill No. 9				
	DISTRIBUTION BOARDS				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Electrical Installation

Bill No. 9

DISTRIBUTION BOARDS

COLLECTION

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Section No. 3

Electrical Installation

Bill No. 9

DISTRIBUTION BOARDS

BILL OF ESTIMATE***QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD***

**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
	<u>BILL NO.10</u>				
	<u>LIGHTNING PROTECTION AND EARTHING</u>				
	Supply and install lightning protection system in accordance with SANS10142-1. Copper Earthing straps to be bonded and earthed according to SANS10142. Provide an installation in accordance with the requirements of SANS62305-3.				
	<u>4m x 50sqmm solid round aluminuim down conductor bonded to the roof sheeting, gutters, etc. and terminating in a flush mount test point enclosure</u>				
1	- Supply	No	130.00		
2	- Install	No	130.00		
	<u>Test point enclosure with bi metallic connector, flush mounted to outside of structure</u>				
3	- Supply	No	130.00		
4	- Install	No	130.00		
	<u>3m x 50sqmm stranded insulated copper conductor from lightning protection test point to earth spike, using appropriate connectors</u>				
5	- Supply	No	130.00		
6	- Install	No	130.00		
	<u>1.5m copper clad steel SABS approved earth rods with clamp driven 1.35m away from the building</u>				
7	- Supply	No	130.00		
8	- Install	No	130.00		
9	All additional components required to bond and to complete the lightning protection installation to achieve the required resistance values		Item		
	Carried to Collection			R	
	Section No. 3 Electrical Installation Bill No. 10 LIGHTNING PROTECTION AND EARTHING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Electrical Installation

Bill No. 10

LIGHTNING PROTECTION AND EARTHING

COLLECTION

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Electrical Installation

Bill No. 10

LIGHTNING PROTECTION AND EARTHING

BILL OF ESTIMATE**QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD**

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
	<u>BILL NO.11</u>			
	<u>POWER SUPPLY, GENERATOR & SOLAR</u>			
1	Application and payment of necessary fees to the Electrical supply authority including transformer, metering kiosk and necessary cabling infrastructure required for a 100kVA supply	Item		250 000,00
2	Profit and Attendance for the facilitation of the increase in capacity of the existing electrical connection with the supply authority. The contractor is expected to pay the supply authority in full and thereafter claim the amount back.	Item		
3	PROVISIONAL SUM Any additional electrical components required to allow for the upgrade of the existing electrical connection	Item		100 000,00
4	80kVA Diesel Generator Steel fabricated base frame including a base tank with diesel filled on site Anti - vibration mounts 3CR12 residential exhaust system complete with flexible bellows, silencer, and flashings. Minimum diesel storage for 6h on full load. Remote type Automatic Mains Failure control panel with a 120A changeover panel, mounted in meter room. Twelve months guarantee. Sound proof canopy. Concreted, oversized, reinforced plinth. Clear-Vu or equivalent fence around the generator with a 1m Walkthrough on all sides.	Item		
5	350m of 11kV HARE Conductor with 6 poles including stays, struts etc. for the replacement of the main 11kV underground conductor feeding the town, in accordance with Eskom drawings	Item		
	Carried to Collection		R	
	Section No. 3 Electrical Installation Bill No. 11 POWER SUPPLY, GENERATOR & SOLAR BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

6	Removal of existing 185sqmm PILC cable in substation yard and at school entrance from underground, splicing and jointing on pole of existing 185sqmm PILC cable to new HARE conductor, by MV specialist	No	2.00		
7	Termination, Pressure testing and protection testing, commissioning of new 11kV line in substation and on at the school pole transformer, by MV specialist		Item		
<u>Supply and install 25kVA grid tie solar solution</u>					
8	25kVA Grid tie solar inverter. NRS approved. SMA, SOLIS, HUAWEI, FRONTUS or other approved brand. Including export limitation equipment, CTs, monitoring and logging.	No	1.00		
9	415W Tier 1 JA Solar/Canadian Solar Panels	No	62.00		
10	Aluminium Mounting Structure		Item		
11	4sqmm single core 1000V Cu solar cable - red and black (Inverter 1)		Item		
12	4sqmm Insulated Cu earth cable		Item		
13	16 sq.mm 4-core ECC cable		Item		
14	DC Inline Fuse & MC4 connectors per string (positive & negative)		Item		
15	Combiner boxes with Class I Surge Arrestors and DC Switch Disconnectors		Item		
16	AC Tie Into Main Board		Item		
17	Complete Carport Aluminium/Stainless Steel Support with Reinforced Plinths, as per Specialist together with Certificate. Shop Drawings and approvals required prior to fabrication			SUM	
18	Labour, Installation & Certification		Item		
Carried to Collection				R	
Section No. 3 Electrical Installation Bill No. 11 POWER SUPPLY, GENERATOR & SOLAR BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Electrical Installation

Bill No. 11

POWER SUPPLY, GENERATOR & SOLAR

COLLECTION

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Electrical Installation

Bill No. 11

POWER SUPPLY, GENERATOR & SOLAR

BILL OF ESTIMATE**QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD**

Section No. 3
Electrical Installation
Bill No. 12
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BILL OF ESTIMATE
QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
	<u>SECTION NO.4</u>			
	<u>MECHANICAL INSTALLATIONS</u>			
	<u>BILL NO.1</u>			
	<u>PRELIMINARY & GENERAL ITEMS</u>			
1	Scaffolding	Item		
2	Staff Organisation	Item		
3	Progress for Measurement	Item		
4	Attendance for Measurement	Item		
5	Tests and Inspections	Item		
6	Preparation of Operating and Maintenance Manuals (x3 Copies)	Item		
7	As-built Drawings	Item		
8	12 Months Guarantee and Maintenance	Item		
9	Programming of the Work	Item		
10	Testing, Balancing & Commissioning	Item		
11	Equipment Submissions	Item		
12	Drawings (Shop drawings & As Built drawings)	Item		
13	Contract Management	Item		
14	Office Administration	Item		
15	Truck Trips	Item		
16	Van and Car Trips	Item		
17	Rigging and Crane Hire	Item		
	Carried to Collection		R	
	Section No. 4			
	Mechanical Installations			
	Bill No. 1			
	HVAC			
	BILL OF ESTIMATE			
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

18	Equipment Labels		Item		
	Sub-contractors to be present at all site meeting at least on a two weekly basis and more frequently as buildings become ready/ available for installations.				
19	Provisional sum for construction Changes		Item		
20	Contractor's overhead and profit on Item 1.028			SUM	
<u>EQUIPMENT, ACCESSORIES & DUCTING</u>					
<u>NEW HVAC INSTALLATIONS: EQUIPMENT AND ACCESSORIES</u>					
<u>Midwal Split Units</u>					
<u>Midwall unit capacity to be based on Cooling On Coil temperatures of 27°C (db) and 19°C (wb)</u>					
21	Supply and install MIDWALL SPLIT UNIT - 2,5kW cooling & 3,2kW heating c/w remote controllers. Firmly support indoor units with support brackets and steel rods, from roof trusses/ slab (soffit) & walls as per industry best practice. Power source : 1PH,220-240V/50Hz.	No	2.00		
22	Supply and install MIDWALL SPLIT UNIT - 4,6kW cooling & 5,0kW heating c/w remote controllers. Firmly support indoor units with support brackets and steel rods, from roof trusses/ slab (soffit) & walls as per industry best practice. Power source : 1PH,220-240V/50Hz.	No	1.00		
23	Supply and install MIDWALL SPLIT UNIT - 6,1kW cooling & 7,0kW heating c/w remote controllers. Firmly support indoor units with support brackets and steel rods, from roof trusses/ slab (soffit) & walls as per industry best practice. Power source : 1PH,220-240V/50Hz.	No	2.00		
24	Supply and install MIDWALL SPLIT UNIT - 9,5kW cooling & 11,2kW heating c/w remote controllers. Firmly support indoor units with support brackets and steel rods, from roof trusses/ slab (soffit) & walls as per industry best practice. Power source : 1PH,220-240V/50Hz.	No	4.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 1 HVAC BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Pipe Fittings</u>				
	<u>MWUs</u>				
25	soft drawn refrigerant piping for liquid and gas lines, from BC1.8 to MSU'S. Gas line-12.7mm to 22,2mm flare and liquid line-6.35mm to 9,52mm flare.	m	35.00		
	<u>Refrigerant Charge</u>				
26	Prepare both new and existing unit for refrigerant charge and charge with refrigerant, R410A, as per manufacturer's recommendation & tender specifications and test for leaks		Item		
	<u>Condensate drainage piping sets c/w Long p-trap. Pipe Sets, including chasing in walls, core drilling and making good afterwards</u>				
27	Indoor Unit Drain piping to connect into the nearest Main drain piping c/w bends. TRF and Tees. Outside Dia-50mm.	m	45.00		
	<u>FANS AND ATTENUATORS</u>				
	<u>Centrifugal,Axial & inline tube Fans complete with feet, flanges and support brackets and spring mounts/ Anti vibration mountings - Supply and Install</u>				
28	Dia. 400mm Axial Flow Fan for 1,100m³/s, 450Pa total pressure,1.5kW,400V, 50Hz)	No	1.00		
29	Dia. 315mm Axial Flow Fan for 0,330m³/s, 300Pa total pressure,1.5kW,400V, 50Hz)	No	2.00		
30	Dia. 315mm Inline tube Fan for 0,255m³/s, 250Pa total pressure,1.5kW,240V, 50Hz)	No	1.00		
31	Dia. 250mm Inline tube Fan for 0,055m³/s, 250Pa total pressure,1.5kW,240V, 50Hz)	No	1.00		
	<u>Sound Attenuators complete with support brackets - Supply and Install</u>				
32	Sound Attenuators to suit Dia. 400 Fan	No	2.00		
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
	Bill No. 1				
	HVAC				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

33	Sound Attenuators to suit Dia. 315 Fan	No	6.00		
34	Sound Attenuators to suit Dia. 250 Fan	No	2.00		
<u>Electrical and Electronic Connections - Supply and Install</u>					
35	Electrical starter/isolator with overload protection, wired to fan and to isolator	No	5.00		
36	Electrical cabling and wiring of fans (all cabling and wiring measured as one item per fan)	No	5.00		
<u>Fan Control - Supply and Install</u>					
37	7 day/24 hour control timer	No	4.00		
38	Manual Stop/Start controller	No	1.00		
<u>KITCHEN EXTRACTION</u>					
<u>Duct - Supply and Install</u>					
39	Dia. 500	m	4.00		
<u>Transformation piece - Supply and Install</u>					
40	Dia. 500 to Dia. 400	No	2.00		
<u>90° Bends - Supply and Install</u>					
41	Dia. 500	No	2.00		
<u>EQUIPMENT, ACCESSORIES & DUCTING</u>					
<u>NEW HVAC INSTALLATIONS: EQUIPMENT AND ACCESSORIES</u>					
<u>ADMINISTRATION BLOCK - FAF01</u>					
<u>Duct - Supply and Install</u>					
42	Dia. 200	m	7.00		
43	Dia. 150	m	3.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 1 HVAC BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Transformation piece - Supply and Install</u>				
44	Dia. 250 to Dia. 200	No	1.00		
45	Dia. 250 to 200 x 200	No	1.00		
	<u>90° Bends - Supply and Install</u>				
46	Dia. 200	No	1.00		
	<u>Stop Ends - Supply and Install</u>				
47	Dia. 200	No	1.00		
	<u>Spigots - Supply and Install</u>				
48	Dia. 150	No	3.00		
	<u>Flexible duct (max length = 1,5m) - Supply and Install</u>				
49	Dia. 150	No	3.00		
	<u>ADMINISTRATION BLOCK - FAF02</u>				
	<u>Duct - Supply and Install</u>				
50	Dia. 250	m	1.00		
	<u>Transformation piece - Supply and Install</u>				
51	300 x 300 to Dia. 315	No	1.00		
52	Dia. 315 to Dia. 250	No	1.00		
	<u>Flexible duct (max length = 1,5m) - Supply and Install</u>				
53	Dia. 250	No	1.00		
	<u>COMPUTER ROOM 1 - FAF01</u>				
	<u>Duct - Supply and Install</u>				
54	Dia. 300	m	2.00		
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
	Bill No. 1				
	HVAC				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Transformation piece - Supply and Install</u>				
55	400 x 400 to Dia. 315	No	1.00		
56	Dia. 315 to Dia. 300	No	1.00		
	<u>Flexible duct (max length = 1,5m) - Supply and Install</u>				
57	Dia. 300	No	1.00		
	<u>COMPUTER ROOM 2 - FAF02</u>				
	<u>Duct - Supply and Install</u>				
58	Dia. 300	m	3.00		
	<u>Transformation piece - Supply and Install</u>				
59	400 x 400 to Dia. 315	No	1.00		
60	Dia. 315 to Dia. 300	No	1.00		
	<u>Flexible duct (max length = 1,5m) - Supply and Install</u>				
61	Dia. 300	No	1.00		
	<u>EQUIPMENT, ACCESSORIES & DUCTING</u>				
	<u>NEW HVAC INSTALLATIONS: EQUIPMENT AND ACCESSORIES</u>				
	<u>Supply & Install door grilles/extract disc valves - Metal, white epoxy coated - Supply and Install</u>				
62	Dia. 300 Supply Air Ceiling Diffusers	No	2.00		
63	Dia. 250 Supply Air Ceiling Diffusers	No	1.00		
64	Dia. 150 Supply air disc valves	No	4.00		
65	400 x 300 Aluminium Door Grilles	No	8.00		
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
	Bill No. 1				
	HVAC				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

<u>Diffuser & Disc Valve Clamps - Supply and Install</u>					
66	300mm diam. clamps	No	4.00		
67	250mm diam. clamps	No	2.00		
68	150mm diam. clamps	No	8.00		
<u>Balancing Dampers - Supply and Install</u>					
69	Dia. 300	No	2.00		
70	Dia. 250	No	1.00		
71	Dia. 150	No	4.00		
<u>Kitchen Extraction Canopy, External Weather Louvres, Discharge Cows, Burglar Bars & Wire Mesh Screens - Supply and Install</u>					
72	2600 x 850 Kitchen Extraction Canopy complete with wire mesh screens & burglar bars	No	1.00		
73	400 x 400 weather louvre complete with filter bank, wire mesh screens & burglar bars	No	2.00		
74	300 x 300 weather louvre complete with filter bank, wire mesh screens & burglar bars	No	1.00		
75	200 x 200 weather louvre complete with filter bank, wire mesh screens & burglar bars	No	1.00		
76	Dia. 500 Dispersion Dispersion Cowl	No	1.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 1 HVAC BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>TANKS: THE SUPPLY INSTALLATION AND FULL COMMISSIONING OF TANKS</u>					
17	Supply/ Intall a Ground water storage tank complete with pipe work and commissioning of tankswater storage shall be a CUBIC TANK, total effective capacity including free board 65m ³ 60Amps, 3 Phase power supply for welding of tanks on site	No	1.00		
<u>PUMPS: THE SUPPLY INSTALLATION AND FULL COMMISSIONING OF PUMPS</u>					
<u>ELECTRICAL MOTOR DRIVEN PUMP</u>					
18	Supply, install, test and commission Electric motor driven pump suitable for automatic operation consisting of the following (as per specification) End suction Vertical centrifugal pump type, fire pump complete with 6.5l/s at a total head of 4.0 Bar. including by pass arrangement for periodical testing of the working of the pump set as required, strainer on suction side and pressure gauge on delivery side etc. The pump shall be provided with mechanical seals. All coupling of pump and motor should be covered with safety guard Squirrel cage A.C induction motor suitable for operation on 415V, 3 Phase 50Hz A.C supply and of minimum 5.5 kW for the above pump with flexible coupling as per specification	No	2.00		
<u>PUMP ROOM</u>					
<u>PUMPHOUSE PIPEWORK & ELECTRICAL CONNECTIONS</u>					
19	All pumphouse pipework and necessary valves as per tender drawings and specification		Item		
20	All electrical panels, cabling, safeties, switches, etc for electrical pump, jockey pump and any other equipment housed within the pump house		Item		
<u>MULTI PURPOSE HALL</u>					
<u>WET SERVICES</u>					
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>uPVC Piping</u>				
	<u>Pipework to include for all bracketing, anchor points and electofusion couplings, expansion joints, required to meet the uPVC installation requirements. Bracketing to allow for all eventualities inc. fixing to walls, soffits and in ceiling space irrespective of lengths of rods required.</u>				
21	50mm Diameter pipes	m	46.00		
22	75mm Diameter pipes	m			
23	110mm Diameter pipes	m	50.00		
	<u>uPVC pipe and fittings as before described laid in trenches on imported bedding as per uPVC recommendations including all excavations, filling and compaction to 93% Modasho all in normal ground not exceeding 1m deep</u>				
24	50mm Diameter pipes	m			
25	75mm Diameter pipes	m	12.00		
26	110mm Diameter pipes	m	30.00		
	<u>Galvanised pipe and fittings laid in trenches on imported bedding as per recommendations including all excavations, filling and compaction to 93% Modasho all in normal ground not exceeding 1m deep</u>				
27	110mm Diameter pipes	m	12.00		
	<u>Water Hand Basin fittings</u>				
28	The Belatori Pulse unslotted Waste with plug is made from solid brass and coated in a 200 hour salt spray test chrome, making it suitable for both coastal and inland areas. C/w Brass body,plug,silicone washer,brass back nut and plastic cover	No	17.00		
29	50 x 32mm reseal "P" or "S" trap c/w with clamps	No	17.00		
30	50mm x 90° bend	No	17.00		
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
	Bill No. 2				
	Wet Services				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

31	50mm x 45° equal junction	No	17.00		
32	50mm stopped end cap	No			
33	50mm inspection eye pipe	No	17.00		
	<u>Sink fittings</u>				
34	The Belatori Pulse unslotted Waste with plug is made from solid brass and coated in a 200 hour salt spray test chrome, making it suitable for both coastal and inland areas. C/w Brass body,plug,silicone washer,brass back nut and plastioc cover	No	4.00		
35	50 x 40mm reseal "P" or "S" trap c/w with clamps	No	4.00		
36	50mm x 90° bend	No	4.00		
37	50mm x 45° equal junction	No	4.00		
38	50mm stopped end cap	No			
39	50mm inspection pipe	No	4.00		
	<u>Urinal waste fittings</u>				
40	Urinal waste (1 1/2" x 85mm) universal	No	5.00		
41	40mm Plastic Bottle reseal	No	5.00		
42	50mm x 45° equal junction	No	5.00		
43	50mm inspection pipe	No	5.00		
	<u>Water closet fittings</u>				
44	110mm pan Connector	No	18.00		
45	110m Moisture seal	No	18.00		
46	110mm x 90° bend	No	36.00		
47	110mm x 45° bend	No	19.00		
48	110mm x 45° equal junction	No	23.00		
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
	Bill No. 2				
	Wet Services				
	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	<u>Shower fittings</u>				
49	A shower tray waste trap in a diameter of 90 mm, with 50mm outlet,featuring a polished cover cap with stainless steel small grill	No	5.00		
	<u>Extra over uPVC Piping for fittings</u>				
50	50mm x 90° bend	No	15.00		
51	50mm x 45° bend	No			
52	50mm inspection pipe	No	15.00		
53	110mm rodding eye	No	3.00		
54	100mm x 45° equal junction	No	20.00		
55	110mm x 50mm x 45° reducing junction	No	6.00		
56	110mm inspection pipe	No	18.00		
57	110mm x 50mm reducer	No	4.00		
58	110mm PVC gully underground P-trap and joint to uPVC piping	No	2.00		
59	110mm PVC gully head C/W grate	No	2.00		
60	Approved Gully tops/concrete SABS 0252-2	No	2.00		
61	SANS 10400 compliant 110mm Floor Drain 304/316 stainless steel grade c/w Dia. 75mm outlet.	No	4.00		
	<u>inspection chamber: A chamber not deeper than 1 m and of such dimensions that permanent access may be obtained to a drain without a person's being required to enter into such chamber.</u>				
62	Supply and install IC 600 x 600 c/w internal cover to suit	No	1.00		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>ventilation pipe; vent pipe: A pipe, other than a discharge pipe, that leads to the open air at its highest point and that provides ventilation throughout a drainage installation for the purpose of preventing the destruction of water seals.</u>				
	<u>Supply and install vent Pipe complete with vent valves as per drawing:</u>				
63	Dia.100 m	6.00			
	<u>Stack pipe;</u>				
	<u>Supply and install stub pipe as per drawing:</u>				
64	Dia.100 m	12.00			
	<u>Fat traps</u>				
65	Supply and install 304/ 316 s/steel internal fat trap designed for 1l/s No	1.00			
	<u>Stainless steel drain channel</u>				
66	Supply and install 300 (W) x 6m (L) of stainless steel drain channel Design 300 W x 200 Depth channel to accommodate steel drain channel	Item			
	<u>SUNDRIES</u>				
67	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative	Item			
68	Allow for chasing brickwall for piping not exceeding 65mmØ. Make good by Contractor	Item			
69	PVC Sleeve n/e 75mmØ average length 250mm No	4.00			
70	PVC Sleeve n/e 125mmØ average length 250mm No	20.00			
	<u>Note: Subsidiary manholes shown on pipe in ground and at grease trap by Civil Contactor</u>				
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>WATER SUPPLIES - COLD WATER</u>					
Chased piping to be wrapped with brown plumbing paper.					
<u>Copper Class 1 Piping</u>					
<u>Above Ground piping Exposed</u>					
71	22mm Pipes	m	106.00		
72	28mm Pipes	m	40.00		
73	35mm Pipes	m			
74	42mm Pipes	m			
75	54mm Pipes	m			
<u>Copper Class 2 Piping</u>					
<u>Chased in walls</u>					
76	15mm Pipes	m	12.00		
77	22mm Pipes	m	38.00		
78	28mm Pipes	m	24.00		
<u>HDPE Class 12 Piping</u>					
<u>Underground</u>					
79	35mm Pipes	m	26.00		
<u>Flare-type compression fittings complying with SANS 1067-1</u>					
80	Ø 15 mm Elbow	No	20.00		
81	Ø 22 mm Elbow	No	18.00		
82	Ø 28 mm Elbow	No	4.00		
83	Ø 22 mm Equal Teas	No	10.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

84	Ø 28 mm Equal Teas	No	2.00		
85	Ø 28mm Tee with to Ø 22mm Branch	No	4.00		
86	Ø 22mm Tee with to Ø 15mm Branch	No	12.00		
<u>Backflow Prevention Devices</u>					
87	Vacuum Breakers to Suit	No	4.00		
<u>TAPS, VALVES, ETC</u>					
88	Taps - By others		Item		
<u>Valves</u>					
89	15mm diam shut-off valves	No	30.00		
90	20mm diam shut-off valves	No	23.00		
91	25mm diam shut-off valves	No			
92	32mm diam shut-off valves	No	2.00		
93	40mm diam shut-off valves	No			
<u>CONNECTORS</u>					
<u>Overflow and Service pipe</u>					
94	15mm Braided connector 300mm long	No	54.00		
<u>HOT WATER GENERATION & STORAGE</u>					
<u>Hydroboils and Geysers</u>					
95	15 Litre Hydroboil, size 310x180x460mm high, 1.5Kw, 240V/1Ph/50Hz, plumbed directly into the cold water inlet and waste water reticulation.	No	2.00		
96	200 Litre hot water (Solar Geyser), complete with safety valves, vacuum breakers and all accessories and mounting brackets. Geyser to be plumbed directly into the cold water inlet, hot water supply piping and waste water reticulation.	No	2.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

<u>PIPE INSULATION</u>				
<u>Pre-formed external insulating zipped fire retarded, flexible, closed cell Polyethylene material.</u>				
97	15mm Lagging around pipes	m		
98	22mm Lagging around pipes	m	42.00	
<u>Extra over pipe insulation for insulation around</u>				
99	15mm Lagging around 20mm fittings	No	6.00	
100	22mm Lagging around 20mm fittings	No	6.00	
<u>TESTING & COMMISSIONING</u>				
101	Allow for chasing brickwall for piping not exceeding 50mmØ. Make good by Contractor		Item	
102	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative		Item	
103	Color coding and directional arrows as per engineers requirements		Item	
104	Flushing out of and sterilisation of the complete system to local bye laws and the engineers requirements in the presence of the engineer		Item	
<u>SCIENCE LABS</u>				
<u>WET SERVICES</u>				
<u>Valcaine Piping</u>				
<u>Pipework to include for all bracketing, anchor points and electrofusion couplings, expansion joints, required to meet the uPVC installation requirements. Bracketing to allow for all eventualities inc. fixing to walls, soffits and in ceiling space irrespective of lengths of rods required.</u>				
105	50mm Diameter pipes	m	30.00	
Carried to Collection			R	
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Valcathine pipe and fittings as before described laid in trenches on imported bedding as per recommendations including all excavations, filling and compaction to 93% Modasho all in normal ground not exceeding 1m deep</u>				
106	50mm Diameter pipes	m	12.00		
107	75mm Diameter pipes	m	30.00		
	<u>Water Hand Basin fittings</u>				
108	The Belatori Pulse unslotted Waste with plug is made from solid brass and coated in a 200 hour salt spray test chrome, making it suitable for both coastal and inland areas. C/w Brass body,plug,silicone washer,brass back nut and plastioc cover		Item		
109	50 x 32mm reseal "P" or "S" trap c/w with clamps	No	20.00		
110	50mm x 90° bend	No	20.00		
111	50mm x 45° equal junction	No	20.00		
112	50mm inspection eye pipe	No	20.00		
	<u>Extra over Valcathine Piping for fittings</u>				
113	50mm x 90° bend	No	8.00		
114	50mm x 45° bend	No	7.00		
115	50mm inspection pipe	No	8.00		
	<u>inspection chamber: A chamber not deeper than 1 m and of such dimensions that permanent access may be obtained to a drain without a person's being required to enter into such chamber.</u>				
116	Supply and install IC 600 x 600 c/w internal cover to suit	No	12.00		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>SUNDRIES</u>					
117	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative		Item		
118	Allow for chasing brickwall for piping not exceeding 65mmØ. Make good by Contractor		Item		
119	PVC Sleeve n/e 75mmØ average length 250mm	No	2.00		
Note: Subsidiary manholes shown on pipe in ground and at grease trap by Civil Contactor					
<u>WATER SUPPLIES - COLD WATER</u>					
<u>Chased piping to be wrapped with brown plumbing paper.</u>					
<u>Copper Class 1 Piping</u>					
<u>Above Ground piping Exposed</u>					
120	15mm Pipes	m	25.00		
121	22mm Pipes	m	12.00		
122	28mm Pipes	m	12.00		
<u>Copper Class 2 Piping</u>					
<u>Chased in walls</u>					
123	15mm Pipes	m	12.00		
124	22mm Pipes	m	30.00		
<u>Flare-type compression fittings complying with SANS 1067-1</u>					
125	Ø 15 mm Elbow	No	8.00		
126	Ø 22 mm Elbow	No	4.00		
127	Ø 22mm Tee with to Ø 15mm Branch	No	4.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>TESTING & COMMISSIONING</u>					
128	Allow for chasing brickwall for piping not exceeding 50mmØ. Make good by Contractor		Item		
129	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative		Item		
130	Color coding and directional arrows as per engineers requirements		Item		
131	Flushing out of and sterilisation of the complete system to local bye laws and the engineers requirements in the presence of the engineer		Item		
<u>ADMINISTRATION</u>					
<u>WET SERVICES</u>					
<u>uPVC Piping</u>					
<u>Pipework to include for all bracketing, anchor points and electrofusion couplings, expansion joints, required to meet the uPVC installation requirements. Bracketing to allow for all eventualities inc. fixing to walls, soffits and in ceiling space irrespective of lengths of rods required.</u>					
132	50mm Diameter pipes	m	12.00		
133	75mm Diameter pipes	m			
134	110mm Diameter pipes	m	30.00		
<u>uPVC pipe and fittings as before described laid in trenches on imported bedding as per uPVC recommendations including all excavations, filling and compaction to 93% Modasho all in normal ground not exceeding 1m deep</u>					
135	110mm Diameter pipes	m	6.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	<u>Water Hand Basin fittings</u>				
136	The Belatori Pulse unslotted Waste with plug is made from solid brass and coated in a 200 hour salt spray test chrome, making it suitable for both coastal and inland areas. C/w Brass body,plug,silicone washer,brass back nut and plastioc cover	No	7.00		
137	50 x 32mm reseal "P" or "S" trap c/w with clamps	No	7.00		
138	50mm x 90° bend	No	7.00		
139	50mm x 45° equal junction	No	7.00		
140	50mm stopped end cap	No			
141	50mm inspection eye pipe	No	7.00		
	<u>Sink fittings</u>				
142	The Belatori Pulse unslotted Waste with plug is made from solid brass and coated in a 200 hour salt spray test chrome, making it suitable for both coastal and inland areas. C/w Brass body,plug,silicone washer,brass back nut and plastioc cover		Item		
143	50 x 40mm reseal "P" or "S" trap c/w with clamps	No	1.00		
144	50mm x 90° bend	No	1.00		
145	50mm x 45° equal junction	No	1.00		
146	50mm stopped end cap	No			
147	50mm inspection pipe	No	1.00		
	<u>Urinal waste fittings</u>				
148	Urinal waste (1 1/2" x 85mm) universal	No	2.00		
149	40mm Plastic Bottle reseal	No	2.00		
150	50mm x 45° equal junction	No	2.00		
151	50mm stopped end cap	No			
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
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	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

152	50mm inspection pipe	No	2.00		
	<u>Water closet fittings</u>				
153	110mm electroweld coupling to engineers requirement	No			
154	110mm pan Connector	No	5.00		
155	110m Moisture seal	No	5.00		
156	110mm x 90° bend	No	10.00		
157	110mm x 45° bend	No	5.00		
158	110mm x 45° equal junction	No	5.00		
159	110mm x 90° equal junction	No			
	<u>Extra over uPVC Piping for fittings</u>				
160	50mm x 90° bend	No	8.00		
161	50mm inspection pipe	No	15.00		
162	110mm rodding eye	No	1.00		
163	100mm x 45° equal junction	No	5.00		
164	110mm x 50mm x 45° reducing junction	No	4.00		
165	110mm x 75mm x 45° reducing junction	No			
166	110mm stopped end cap	No			
167	110mm inspection pipe	No	5.00		
168	110mm x 50mm reducer	No	4.00		
169	110mm PVC gully underground P-trap and joint to uPVC piping	No	1.00		
170	110mm PVC gully head C/W grate	No	1.00		
171	Approved Gully tops/concrete SABS 0252-2	No	1.00		
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
	Bill No. 2				
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	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>SUNDRIES</u>			
172	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative	Item	
173	Allow for chasing brickwall for piping not exceeding 65mmØ. Make good by Contractor	Item	
174	PVC Sleeve n/e 75mmØ average length 250mm	No	4.00
175	PVC Sleeve n/e 125mmØ average length 250mm	No	5.00
Note: Subsidiary manholes shown on pipe in ground and at grease trap by Civil Contactor			
<u>WATER SUPPLIES - COLD WATER</u>			
<u>Chased piping to be wrapped with brown plumbing paper.</u>			
<u>Copper Class 1 Piping</u>			
<u>Above Ground piping Exposed</u>			
176	22mm Pipes	m	50.00
177	28mm Pipes	m	20.00
<u>Copper Class 2 Piping</u>			
<u>Chased in walls</u>			
178	15mm Pipes	m	24.00
179	22mm Pipes	m	48.00
180	28mm Pipes	m	12.00
<u>HDPE Class 12 Piping</u>			
<u>Underground</u>			
181	35mm Pipes	m	12.00
Carried to Collection			R
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Flare-type compression fittings complying with SANS 1067-1</u>				
182	Ø 15 mm Elbow	No	18.00		
183	Ø 22 mm Elbow	No	11.00		
184	Ø 28 mm Elbow	No	2.00		
185	Ø 22 mm Equal Teas	No	14.00		
186	Ø 28 mm Equal Teas	No	1.00		
187	Ø 28mm Tee with to Ø 22mm Branch	No	4.00		
188	Ø 28mm Tee with to Ø 15mm Branch	No			
189	Ø 22mm Tee with to Ø 15mm Branch	No	16.00		
	<u>Backflow Prevention Devices</u>				
190	Vacuum Breakers to Suit	No	2.00		
	<u>TAPS, VALVES, ETC</u>				
191	Taps - By others		Item		
	<u>Valves</u>				
192	15mm diam shut-off valves	No	17.00		
193	20mm diam shut-off valves	No	5.00		
194	25mm diam shut-off valves	No			
195	32mm diam shut-off valves	No	1.00		
196	40mm diam shut-off valves	No			
	<u>CONNECTORS</u>				
	<u>Overflow and Service pipe</u>				
197	15mm Braided connector 300mm long	No	21.00		
	<u>HOT WATER GENERATION & STORAGE</u>				
	Carried to Collection			R	
	Section No. 4				
	Mechanical Installations				
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	BILL OF ESTIMATE				
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Hydroboils and Geysers</u>				
198	7.5 Litre Hydroboil, 1.5Kw, 240V/1Ph/50Hz, plumbed directly into the cold water inlet and waste water reticulation.	No	1.00		
199	200 Litre hot water (Solar Geyser), complete with safety valves, vacuum breakers and all accessories and mounting brackets. Geyser to be plumbed directly into the cold water inlet, hot water supply piping and waste water reticulation.	No	1.00		
	<u>PIPE INSULATION</u>				
	<u>Pre-formed external insulating zipped fire retarded, flexible, closed cell Polyethylene material.</u>				
200	15mm Lagging around pipes	m	12.00		
201	22mm Lagging around pipes	m	60.00		
	<u>Extra over pipe insulation for insulation around</u>				
202	15mm Lagging around 20mm fittings	No	10.00		
203	22mm Lagging around 20mm fittings	No	8.00		
	<u>TESTING & COMMISSIONING</u>				
204	Allow for chasing brickwall for piping not exceeding 50mmØ. Make good by Contractor		Item		
205	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative		Item		
206	Color coding and directional arrows as per engineers requirements		Item		
207	Flushing out of and sterilisation of the complete system to local bye laws and the engineers requirements in the presence of the engineer		Item		
	<u>3X Classroom toilets , Care taker room</u>				
	<u>uPVC Piping</u>				
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Pipework to include for all bracketing, anchor points and electrofusion couplings, expansion joints, required to meet the uPVC installation requirements. Bracketing to allow for all eventualities inc. fixing to walls, soffits and in ceiling space irrespective of lengths of rods required.</u>				
208	50mm Diameter pipes	m	16.00		
209	75mm Diameter pipes	m			
210	110mm Diameter pipes	m	70.00		
	<u>uPVC pipe and fittings as before described laid in trenches on imported bedding as per uPVC recommendations including all excavations, filling and compaction to 93% Modasho all in normal ground not exceeding 1m deep</u>				
211	75mm Diameter pipes	m	24.00		
	<u>Water Hand Basin fittings</u>				
212	The Belatori Pulse unslotted Waste with plug is made from solid brass and coated in a 200 hour salt spray test chrome, making it suitable for both coastal and inland areas. C/w Brass body,plug,silicone washer,brass back nut and plastic cover	No	30.00		
213	50 x 32mm reseal "P" or "S" trap c/w with clamps	No	30.00		
214	50mm x 90° bend	No	30.00		
215	50mm x 45° equal junction	No	30.00		
216	50mm inspection eye pipe	No	30.00		
	<u>Sink fittings</u>				
217	The Belatori Pulse unslotted Waste with plug is made from solid brass and coated in a 200 hour salt spray test chrome, making it suitable for both coastal and inland areas. C/w Brass body,plug,silicone washer,brass back nut and plastic cover		Item		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

218	50 x 40mm reseal "P" or "S" trap c/w with clamps	No	1.00		
219	50mm x 90° bend	No	1.00		
220	50mm x 45° equal junction	No	1.00		
221	50mm inspection pipe	No	1.00		
	<u>Urinal waste fittings</u>				
222	Urinal waste (1 1/2" x 85mm) universal		Item		
223	40mm Plastic Bottle reseal	No	9.00		
224	50mm x 45° equal junction	No	9.00		
225	50mm inspection pipe	No	9.00		
	<u>Water closet fittings</u>				
226	110mm pan Connector	No	30.00		
227	110m Moisture seal	No	30.00		
228	110mm x 90° bend	No	60.00		
229	110mm x 45° bend	No	5.00		
230	110mm x 45° equal junction	No	5.00		
	<u>Shower fittings</u>				
231	A shower tray waste trap in a diameter of 90 mm, with 50mm outlet,featuring a polished cover cap with stainless steel small grill	No	1.00		
	<u>Extra over uPVC Piping for fittings</u>				
232	50mm x 90° bend	No	19.00		
233	50mm inspection pipe	No	19.00		
234	50mm x 45° equal junction	No			
235	110mm rodding eye	No	10.00		
	Carried to Collection			R	
	Section No. 4				
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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

236	100mm x 45° equal junction	No	30.00		
237	110mm x 50mm x 45° reducing junction	No	4.00		
238	110mm inspection pipe	No	30.00		
239	110mm x 50mm reducer	No	4.00		
240	110mm PVC gully underground P-trap and joint to uPVC piping	No	1.00		
241	110mm PVC gully head C/W grate	No	1.00		
242	Approved Gully tops/concrete SABS 0252-2	No	1.00		
243	SANS 10400 compliant 110mm Floor Drain 304/316 stainless steel grade c/w Dia. 75mm outlet.	No	6.00		
	<u>ventilation pipe; vent pipe: A pipe, other than a discharge pipe, that leads to the open air at its highest point and that provides ventilation throughout a drainage installation for the purpose of preventing the destruction of water seals.</u>				
	<u>Supply and install vent Pipe complete with vent valves as per drawing:</u>				
244	Dia.100	m	9.00		
	<u>Stack pipe:</u>				
	<u>Supply and install stub pipe as per drawing:</u>				
245	Dia.100	m	18.00		
	<u>SUNDRIES</u>				
246	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative		Item		
247	Allow for chasing brickwall for piping not exceeding 65mmØ. Make good by Contractor		Item		
248	PVC Sleeve n/e 75mmØ average length 250mm	No	6.00		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

249	PVC Sleeve n/e 100mmØ average length 250mm	No				
250	PVC Sleeve n/e 125mmØ average length 250mm	No	30.00			
<p>Note: Subsidiary manholes shown on pipe in ground and at grease trap by Civil Contactor</p> <p><u>3X Classroom toilets , Care taker room</u></p> <p><u>WATER SUPPLIES - COLD WATER</u></p> <p>Chased piping to be wrapped with brown plumbing paper.</p> <p><u>Copper Class 1 Piping</u></p> <p><u>Above Ground piping Exposed</u></p>						
251	15mm Pipes	m	6.00			
252	22mm Pipes	m	60.00			
253	28mm Pipes	m	60.00			
254	35mm Pipes	m				
255	42mm Pipes	m				
256	54mm Pipes	m				
<p><u>Copper Class 2 Piping</u></p> <p><u>Chased in walls</u></p>						
257	15mm Pipes	m	42.00			
258	22mm Pipes	m	66.00			
259	28mm Pipes	m	60.00			
<p><u>HDPE Class 12 Piping</u></p> <p><u>Underground</u></p>						
260	35mm Pipes	m	36.00			
Carried to Collection				R		
<p>Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>						

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>Flare-type compression fittings complying with SANS 1067-1</u>					
261	Ø 15 mm Elbow	No	30.00		
262	Ø 22 mm Elbow	No	13.00		
263	Ø 28 mm Elbow	No	12.00		
264	Ø 15 mm Equal Teas	No	3.00		
265	Ø 22 mm Equal Teas	No	12.00		
266	Ø 28 mm Equal Teas	No	3.00		
267	Ø 28mm Tee with to Ø 22mm Branch	No	4.00		
268	Ø 22mm Tee with to Ø 15mm Branch	No	16.00		
<u>3X Classroom toilets , Care taker room</u>					
<u>Backflow Prevention Devices</u>					
269	Vacuum Breakers to Suit	No	2.00		
<u>TAPS, VALVES, ETC</u>					
270	Taps - By others		Item		
<u>Valves</u>					
271	15mm diam shut-off valves	No	41.00		
272	20mm diam shut-off valves	No	33.00		
273	25mm diam shut-off valves	No			
274	32mm diam shut-off valves	No	3.00		
<u>CONNECTORS</u>					
<u>Overflow and Service pipe</u>					
275	15mm Braided connector 300mm long	No	66.00		
<u>HOT WATER GENERATION & STORAGE</u>					
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMe PRIMARY SCHOOL IN PARYS**

	<u>Hydroboils and Geysers</u>				
276	50Litre hot water heater and storage tank, complete with 2Kw backup electrical, safety valves, vacuum breakers and all accessories and mounting brackets. Geyser to be plumbed directly into the cold water inlet, hot water supply piping and waste water reticulation.	No	1.00		
	<u>PIPE INSULATION</u>				
	<u>Pre-formed external insulating zipped fire retarded, flexible, closed cell Polyethylene material.</u>				
277	15mm Lagging around pipes	m	12.00		
278	22mm Lagging around pipes	m	6.00		
	<u>Extra over pipe insulation for insulation around</u>				
279	15mm Lagging around 20mm fittings	No	9.00		
280	22mm Lagging around 20mm fittings	No	4.00		
	<u>TESTING & COMMISSIONING</u>				
281	Allow for chasing brickwall for piping not exceeding 50mmØ. Make good by Contractor		Item		
282	Allow for successful testing of systems in sections during construction, each to be witnessed and signed by the engineer's representative		Item		
283	Color coding and directional arrows as per engineers requirements		Item		
284	Flushing out of and sterilisation of the complete system to local bye laws and the engineers requirements in the presence of the engineer		Item		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 2 Wet Services BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
	<u>PRELIMINARY & GENERAL ITEMS</u>			
1	Clearance of Rubbish	Item		
2	Retention Interest	Item		
3	Site Establishment & Clearance	Item		
4	Scaffolding	Item		
5	Tests and Inspections	Item		
6	Preparation of Operating and Maintenance Manuals	Item		
7	As-built Drawings	Item		
8	12 Months Guarantee and Maintenance	Item		
9	Programming of the Work	Item		
10	Testing, Balancing & Commissioning	Item		
11	Equipment Submissions	Item		
12	Shop Drawings	Item		
13	Equipment Labels	Item		
14	Water & Power for commissioning If JBCC Document	Item		
15	Any additional items of preliminary nature that the tenderer may wish to add to comply with requirements of the specification and/or bill of quantities. (To be listed hereunder by the Tenderer)	Item		
16	Sub-contractors to be present at all site meeting at least on a two weekly basis and more frequently as buildings become ready/ available for installations.	Item		
17	Provisional sum for construction Changes	Item		
	Carried to Collection		R	
	Section No. 4 Mechanical Installations Bill No. 3 Refrigeration Systems BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>cold rooms</u>			
23	Supply and install cold room panels 3660 x 2670 x 2700 (h) (Walls, ceilings and doors), to be 100mm thick polystyrene. Floor panel is not required. Insulation on walls, ceilings, floors and doors must be of fire retardant expanded polystyrene as per SANS 1508.	Item		
	<u>Freezer rooms</u>			
24	Supply and install freezer room panels 3660 x 2670 x 2700 (h) (Walls, ceilings and doors), to be 150mm thick polystyrene. Floor panel is required. Insulation on walls, ceilings, floors and doors must be of fire retardant expanded polystyrene as per SANS 1508.	No 1.00		
	<u>Doors</u>			
	<u>cold room door</u>			
25	supply and install cold room doors and must be of standard, robust construction and can be either of the hinged (slam on). The clear opening must be not less than 815mm. Frame doors all round by channel section aluminum profiles, sealed and riveted to the door panels.	No 1.00		
	<u>Freezer room door</u>			
26	supply and install freezer room doors and must be of standard, robust construction and can be either of the hinged (slam on). The clear opening must be not less than 815mm. Frame doors all round by channel section aluminum profiles, sealed and riveted to the door panels. Freezer room doors with heater elements of the double trace type, rated at 20 W/m and fixed to the door frame. They must remain switched on while cooling is in use.	No 1.00		
	Carried to Collection		R	
	Section No. 4 Mechanical Installations Bill No. 3 Refrigeration Systems BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Condensers

Compressors must be of the hermetic or semi-hermetic type. Compressor protection must be effected effected by a pressure control device.

Condensing unit/s must be of the air-cooled type and the units must be complete with base, liquid receiver, air-cooled condenser, pressure control, suction and discharge service valves, electric fan and compressor.

Evaporators

Cooling unit/s must be of the forced air flow type. The units must be complete with electric fan, drip tray, thermostatic expansion valve and heat exchanger.

When cooling units are mounted from the ceiling, these must clear the back wall by the minimum distance as recommended by the cooling unit manufacturer. The space so provided must in any event be adequate for the servicing of the unit and must not be less than 300mm.

Drip trays must be large enough to collect drip from the expansion valves and cooling coils, and must incorporate a heater element if used for operation below 0°C. Cross break drip trays and provide the drain in the centre of the drip tray.

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Section No. 4

Mechanical Installations

Bill No. 3

Refrigeration Systems

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QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

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Section No. 4

Mechanical Installations

Bill No. 3

Refrigeration Systems

BILL OF ESTIMATE**QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD**

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
	<u>PRELIMINARY & GENERAL ITEMS</u>				
1	Clearance of Rubbish		Item		
2	Retention Interest		Item		
3	Site Establishment & Clearance		Item		
4	Scaffolding		Item		
5	Tests and Inspections		Item		
6	Preparation of Operating and Maintenance Manuals	No	3.00		
7	As-built Drawings		Item		
8	12 Months Guarantee and Maintenance		Item		
9	Programming of the Work		Item		
10	Testing, Balancing & Commissioning		Item		
11	Equipment Submissions		Item		
12	Shop Drawings		Item		
13	Equipment Labels		Item		
14	Water & Power for commissioning If JBCC Document		Item		
15	Any additional items of preliminary nature that the tenderer may wish to add to comply with requirements of the specification and/or bill of quantities. (To be listed hereunder by the Tenderer)		Item		
16	Sub-contractors to be present at all site meeting at least on a two weekly basis and more frequently as buildings become ready/ available for installations.		Item		
17	Provisional sum for construction Changes		Item		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 4 Kitchen equipment BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
	<u>PRELIMINARY & GENERAL ITEMS</u>			
1	Clearance of Rubbish	Item		
2	Retention Interest	Item		
3	Site Establishment & Clearance	Item		
4	Scaffolding	Item		
5	Tests and Inspections	Item		
6	Preparation of Operating and Maintenance Manuals	Item		
7	End User Training	Item		
8	As-built Drawings	Item		
9	12 Months Guarantee and Maintenance	Item		
10	Programming of the Work	Item		
11	Testing, Balancing & Commissioning	Item		
12	Equipment Submissions	Item		
13	Shop Drawings	Item		
14	Equipment Labels	Item		
15	Water & Power for commissioning If JBCC Document	Item		
16	Any additional items of preliminary nature that the tenderer may wish to add to comply with requirements of the specification and/or bill of quantities. (To be listed hereunder by the Tenderer)	Item		
17	Sub-contractors to be present at all site meeting at least on a two weekly basis and more frequently as buildings become ready/ available for installations.	Item		
18	Provisional sum for construction Changes	Item		
	Carried to Collection		R	
	Section No. 4 Mechanical Installations Bill No. 5 19-P05 - Fire BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

19	Contractor's overhead and profit on Item 1.016	No	10.00		
	<u>FIRE PROTECTION EQUIPMENT & EMERGENCY EVACUATION</u>				
	<u>TANKS: THE SUPPLY INSTALLATION AND FULL COMMISSIONING OF TANKS</u>				
20	Supply/ Intall a Ground FIRE storage tank complete with pipe work and commissioning of tanks.Fire water storage shall be a CUBIC TANK, total effective capacity including free board 88m ³ . 60Amps, 3 Phase power supply for welding of tanks on site Cubic or SBS Tanks Prefered instead of welding	No	1.00		
	<u>PUMPS: THE SUPPLY INSTALLATION AND FULL COMMISSIONING OF PUMPS</u>				
	<u>ELECTRICAL MOTOR DRIVEN PUMP</u>				
21	Supply, install, test and commission Electric motor driven fire pump suitable for automatic operation consisting of the following (as per specification) End suction Vertical centrifugal pump type, fire pump complete with 1.5l/s at a total head of 4.5 Bar. including by pass arrangement for periodical testing of the working of the pump set as required, strainer on suction side and pressure gauge on delivery side,NRV,Isolation valves and expansion tank, etc. MCC to be mounted together with pumps on common baseplate.The pump shall be provided with mechanical seals. Squirrel cage A.C induction motor suitable for operation on 415V, 3 Phase 50Hz A.C supply and of minimum 2.5 kW for the above pump with flexible coupling as per specification All coupling of pump and motor should be covered with safety guard	No	2.00		
22	Jockey Pump: 1. L/s @ 4.5 Bar Jockey Electrically driven	No	1.00		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 5 19-P05 - Fire BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>Pressure & Flow Test at communication pipe</u>					
23	Water pressure and flow readings test is required at the connection point to site. The readings will assist in indicating whether: On-site tank storage is required - for fire fighting purposes, Pumps will be required if the static head does not meet SANS 10400 – W requirements, and the reading shall be taken over a period of seven (7) days minimum.	Item			
<u>PUMP ROOM</u>					
<u>PUMPHOUSE PIPEWORK & ELECTRICAL CONNECTIONS</u>					
24	All pumphouse pipework and necessary valves as per tender drawings and specification	Item			
25	All electrical panels, cabling, safeties, switches, etc for electrical pump, jockey pump and any other equipment housed within the pump house	Item			
<u>FIRE HYDRANT MAINS</u>					
26	Supply and installation of main reticulation HDPE CLASS 16 pipe work not limiting municipal supply connection and including all pipe work, fittings, hangers, klambons, fixing equipment , painting as per specification and tender drawings. Size 110mm	m	370.00		
27	Supply and installation of main reticulation HDPE CLASS 16 pipe work including all pipe work, fittings, hangers, klambons, fixing equipment , painting as per specification and tender drawings. Size 75mm	m	65.00		
28	Supply and installation of main reticulation HDPE CLASS 16 pipe work including all pipe work, fittings, hangers, klambons, fixing equipment , painting as per specification and tender drawings. Size 32mm	m	250.00		
29	Bitument wrapping tape (or equivalent) of all underground Galvenised piping. (Note; Long pipe length must be factory protected with Bitumen with only the joints and fittings wrapped on site.)	m	50.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 5 19-P05 - Fire BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMe PRIMARY SCHOOL IN PARYS**

<u>FIRE PROTECTION EQUIPMENT & EMERGENCY EVACUATION</u>					
30	High Volume Hydrant: 100mm Diameter high volume Pillar Type Fire Hydrant with standard Instantaneous coupling supplied and fitted as per specification and tender drawings.	No	1.00		
31	Twin Booster Hydrant: 65mm Diameter Pillar Type Fire Hydrant with twin booster connection c/w blank cap, with pressure guage on riser and painted as per specifications.	No	1.00		
32	Normal Hydrants: 65mm Standard instantaneous coupling with wheel valves supplied and fitted as per the specification and tender drawings, including valves and pressure gauge.	No	5.00		
33	Supply delivery and fitment of 100mm non-return valve and two gate valves as per tender specification and drawings.	No	1.00		
34	F15, Size:190mm x 380mm (h x w) Photoluminescent double sided sign with back plate framed in natural anodised aluminium frame. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	6.00		
35	F18/F21, Size:190mm x 380mm (h x w) double sided Photoluminescent sign framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	6.00		
36	Emergency Assembly Point (Custom sign to industry standards) Size:600mm x 600mm (h x w), three sided vinyl sign without back plate (0.8) and mild steel frame of square tubing (30 x 30mm) mounted onto Diameter 80mm pole. Bottom of sign to be at least 2.4m from finishe floor level and mounted with 4 M10 rawl bolts. Supply and Install the entire scope.	No	3.00		
<u>INTERNAL SERVICES</u>					
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 5 19-P05 - Fire BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>FIRE PROTECTION EQUIPMENT & EMERGENCY EVACUATION</u>					
<u>FIXED HOSE REELS AND STAND PIPES</u>					
FIRE HOSE REELS, HOSE COUPLINGS, CONNECTORS, BRANCH PIPE, STAND PIPES AND NOZZLE FITTINGS SHALL CONFORM TO SANS 1128					
37	Supply and installation of main reticulation HDPE pipe work including all pipe work, fittings, hangers, klambons, fixing equipment ,plasson female adaptor,brass coupling valve,hose swivel and painting as per specification and tender drawings. Size 32mm	m	12.00		
38	Supply and installation of vertical stand pipes GALVANISED STEEL pipe work including all pipe work, fittings, hangers, klambons, fixing equipment ,pressure gauge and painting as per specification and tender drawings. Size 50mm	m	12.00		
39	Supply and installation of vertical stand pipes GALVANISED STEEL pipe work including all pipe work, fittings, hangers, klambons, fixing equipment ,pressure gauge and painting as per specification and tender drawings. Size 25mm	m	50.00		
40	25mm Dia Fire Hose Reels SANS approved and supplied and fitted including, stop valves,hose reel base, clamps,nozzle brackets,fixing brackets,pressure gauge etc including length of 30m connecting pipe per reel as per the specification and tender drawings.	No	20.00		
41	25mm Dia Fire portable Hose Reels SANS approved and supplied and to be fitted to vertical stand pipes during emergency including, length of 30m connecting pipe per reel as per the specification and tender drawings.	No	5.00		
42	Fire Hose Reel Cabinet	No	5.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 5 19-P05 - Fire BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>HOSE REEL SUPPORT BRACKETS (WHERE HOSE REELS ARE INSTALLED IN DRY WALLING)</u>				
43	Supply and install a steel support bracket for hose reels installed against dry walling. Support bracket to include all anchor bolts, painting, etc	No			
	<u>HAND-HELD PORTABLE FIRE FIGHTING EQUIPMENT</u>				
44	Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases, mounting brackets and wall anchors as per the tender drawings or detailed specifications. 5 kg CO2	No	2.00		
45	Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases, mounting brackets and wall anchors as per the tender drawings or detailed specifications. 9.0 kg DCP	No	5.00		
46	Fire Extinguishers Cabinet for 5 kg CO2, Fire cabinets must be of a glass fibre with clear polycarbonate lids.	No	2.00		
47	Fire Extinguishers cabinet 9.0 kg DCP, Fire cabinets must be of a glass fibre with clear polycarbonate lids.	No	5.00		
48	Fire Blanket 1.0 x 1.2 m Complete with signage	No	1.00		
	<u>INTERNAL SERVICES</u>				
	<u>FIRE PROTECTION EQUIPMENT & EMERGENCY EVACUATION</u>				
49	E1/E2, Size: 190mm x 380mm (h x w) double sided Photoluminescent sign framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture	No	4.00		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 5 19-P05 - Fire BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

50	E3, Size:190mm x 380mm (h x w) double sided Photoluminescent sign with back plate framed in natural anodised aluminium frame. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	8.00		
51	F5/F6, Size:190mm x 570mm (h x w) double sided Photoluminescent sign framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	5.00		
52	F4, Size:190mm x 570mm (h x w) double sided Photoluminescent sign with back plate framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	14.00		
53	F13, Size:190mm x 380mm (h x w) double sided Photoluminescent sign without back plate and framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	8.00		
54	F14, Size:190mm x 380mm (h x w) double sided Photoluminescent sign without back plate and framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	11.00		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 5 19-P05 - Fire BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Mechanical Installations

Bill No. 5

19-P05 - Fire

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Section No. 4

Mechanical Installations

Bill No. 5

19-P05 - Fire

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
	<u>PRELIMINARY & GENERAL ITEMS</u>			
1	Clearance of Rubbish	Item		
2	Retention Interest	Item		
3	Site Establishment & Clearance	Item		
4	Scaffolding	Item		
5	Tests and Inspections	Item		
6	Preparation of Operating and Maintenance Manuals	Item		
7	Fire Department approvals before installations	Item		
8	As-built Drawings	Item		
9	12 Months Guarantee and Maintenance	Item		
10	Programming of the Work	Item		
11	Testing, Balancing & Commissioning	Item		
12	Equipment Submissions	Item		
13	Shop Drawings	Item		
14	Equipment Labels	Item		
15	Water & Power for commissioning If JBCC Document	Item		
	Any additional items of preliminary nature that the tenderer may wish to add to comply with requirements of the specification and/or bill of quantities. (To be listed hereunder by the Tenderer)			
16	Sub-contractors to be present at all site meeting at least on a two weekly basis and more frequently as buildings become ready/ available for installations.	Item		
17	Provisional sum for construction Changes	Item		
	Carried to Collection		R	
	Section No. 4 Mechanical Installations Bill No. 6 LP Gas Lab BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

**CONSTRUCTION OF PROPOSED NEW
DOVE PRIMARY SCHOOL IN PARYS**

18	Contractor's overhead and profit on Item 1.015		Item		
	<u>LP GAS SYSTEM INSTALLATIONS</u>				
	As per the requirements SANS 10087-1				
19	Supply and install Gas tanks with cylinder capacity and mass of 19 kg, with 13.3kw Ernegy supply.	No	2.00		
20	Supply and install Gas tanks with cylinder capacity and mass of 48 kg, with 13.3kw Ernegy supply.	No			
21	Supply & install 28mm diameter LP Gas manifold (2 x 2) c/w change over valves, safeties, etc	No			
22	Supply & install 22mm diameter LP Gas manifold (2 x 2) c/w change over valves, safeties, etc	No	1.00		
23	Supply and install Class 1 Schedule 80 pipes of 28mm diameter for gas reticulation c/w manifold elbows, unions, accessories for cooking gas, etc.	m			
24	Supply and install Schedule 80 pipes of 20mm diameter for gas reticulation c/w manifold elbows, unions, accessories for cooking gas, etc.	m	64.00		
25	Supply and install Schedule 80 pipes of 15mm diameter for gas reticulation c/w elbows, unions, etc.	m	18.00		
26	Supply and install Class 1 Schedule 80 pipes of 8mm diameter for gas reticulation c/w elbows, unions, etc.	m			
27	Supply and install 8mm diameter connecting hoses, c/w clamps, fasteners, tested for LP Gas use, etc	No			
28	Supply and install gas bottle cage with dimensions not greater than 1600(L)x500(W)x2000(H). Cage to be of steel frame with heavy duty diamond, expanded steel mesh finish, complete with locable double gate at least 1500mm wide	No	1.00		
29	Supply and install gas low pressure regulators, first & second stage regulators	No	2.00		
30	Supply and install safety & warning signage around the gas cage as required by regulations		Item		
	Carried to Collection			R	
	Section No. 4				
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	LP Gas Lab				
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	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

31	Supply and install fire signage: F13, Size:290mm x 580mm (h x w) double sided Photoluminescent sign without back plate and framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	2.00		
32	Supply and install fire extinguishers SANS approved with backing boards as per the tender drawings 9.0 kg DCP	No	1.00		
33	Fire Extinguishers Cabinet for 5 kg DCP (300x290x750) weather proof box.	No			
34	Supply & Install 28mm diameter LP Gas Fire Man's isolation valves	No			
35	Supply & Install 22mm diameter LP Gas Fire Man's isolation valves	No	2.00		
36	Supply & Install 22mm diameter LP Gas isolation valves	No	1.00		
37	Supply & Install 15mm diameter LP Gas isolation valves	No	26.00		
38	Supply and install 8mm diameter LP Gas isolation valves	No			
39	Supply & Install 40 x 40 steel trunking to cover Schedule 80 piping	m	40.00		
<u>EQUIPMENT</u>					
40	Supply and install 180° bench cock & accessories, etc.	No	1.00		
<u>PAINTING</u>					
41	Paint all Schedule 80 piping with C37 paint (stone colour) as per SANS 10087-1		Item		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 6 LP Gas Lab BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

			Quantity	Rate	Amount
	<u>PRELIMINARY & GENERAL ITEMS</u>				
1	Clearance of Rubbish		Item		
2	Retention Interest		Item		
3	Site Establishment & Clearance		Item		
4	Scaffolding		Item		
5	Tests and Inspections		Item		
6	Preparation of Operating and Maintenance Manuals	No	3.00		
7	Fire Department approvals before installations		Item		
8	As-built Drawings		Item		
9	12 Months Guarantee and Maintenance		Item		
10	Programming of the Work		Item		
11	Testing, Balancing & Commissioning		Item		
12	Equipment Submissions		Item		
13	Shop Drawings		Item		
14	Equipment Labels		Item		
15	Water & Power for commissioning If JBCC Document		Item		
16	Any additional items of preliminary nature that the tenderer may wish to add to comply with requirements of the specification and/or bill of quantities. (To be listed hereunder by the Tenderer)		Item		
17	Sub-contractors to be present at all site meeting at least on a two weekly basis and more frequently as buildings become ready/ available for installations.		Item		
	Carried to Collection			R	
	Section No. 4 Mechanical Installations Bill No. 7 LPG Kitchen BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

18	Provisional sum for construction Changes		Item		
19	Contractor's overhead and profit on Item 1.015		Item		
	As per the requirements SANS 10087-1				
20	Supply and install Gas tanks with cylinder capacity and mass of 19 kg, with 13.3kw Ernegy supply.	No			
21	Supply and install Gas tanks with cylinder capacity and mass of 48 kg, with 13.3kw Ernegy supply.	No	4.00		
22	Supply & install 28mm diameter LP Gas manifold (2 x 2) c/w change over valves, safeties, etc	No	1.00		
23	Supply & install 22mm diameter LP Gas manifold (2 x 2) c/w change over valves, safeties, etc	No			
24	Supply and install Class 1 Schedule 80 pipes of 28mm diameter for gas reticulation c/w manifold elbows, unions, accessories for cooking gas, etc.	m			
25	Supply and install Class 1 Schedule 80 pipes of 20mm diameter for gas reticulation c/w manifold elbows, unions, accessories for cooking gas, etc.	m	52.00		
26	Supply and install Class 1 Schedule 80 pipes of 15mm diameter for gas reticulation c/w elbows, unions, etc.	m	12.00		
27	Supply and install Class 1 Schedule 80 pipes of 8mm diameter for gas reticulation c/w elbows, unions, etc.	m			
28	Supply and install 8mm diameter connecting hoses, c/w clamps, fasteners, tested for LP Gas use, etc	No	8.00		
29	Supply and install gas bottle cage with dimensions not greater than 3200(L)x2500(W)x2000(H). Cage to be of steel frame with heavy duty diamond, expanded steel mesh finish, complete with locable double gate at least 1500mm wide	No	1.00		
30	Supply and install gas low pressure regulators, first & second stage regulators	No	2.00		
31	Supply and install safety & warning signage around the gas cage as required by regulations		Item		
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Section No. 4					
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BILL OF ESTIMATE					
QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

32	Supply and install fire signage: F13, Size:290mm x 580mm (h x w) double sided Photoluminescent sign without back plate and framed in natural anodised aluminium. Supply and Install with steel wire and ceiling tee hook/onto Mild steel bracket at 3.0meters from finished floor level/mechanically mounted onto wall/fixture	No	2.00		
33	Supply and install fire extinguishers SANS approved with backing boards as per the tender drawings 9.0 kg DCP	No	2.00		
34	Fire Extinguishers Cabinet for 5 kg DCP (300x290x750) weather proof box.	No	2.00		
35	Supply & Install 28mm diameter LP Gas Fire Man's isolation valves	No	1.00		
36	Supply & Install 22mm diameter LP Gas Fire Man's isolation valves	No	2.00		
37	Supply & Install 22mm diameter LP Gas isolation valves	No	1.00		
38	Supply & Install 15mm diameter LP Gas isolation valves	No	16.00		
39	Supply and install 8mm diameter LP Gas isolation valves	No			
40	Supply & Install 40 x 40 steel trunking to cover Schedule 80 piping	m	40.00		
<u>EQUIPMENT</u>					
41	Supply and install 3 burner LP Gas stove c/w pipe terminations, & accessories, etc.	No	2.00		
<u>PAINTING</u>					
42	Paint all Schedule 80 piping with C37 paint (stone colour) as per SANS 10087-1		Item		
Carried to Collection				R	
Section No. 4 Mechanical Installations Bill No. 7 LPG Kitchen BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD					

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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Mechanical Installations

Bill No. 8

Smoke Vent - Fire

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Section No. 4

Mechanical Installations

Bill No. 8

Smoke Vent - Fire

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

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**CONSTRUCTION OF PROPOSED NEW
 DOME PRIMARY SCHOOL IN PARYS**

	Quantity	Rate	Amount
<p><u>SECTION NO.4</u></p> <p><u>LANDSCAPING</u></p> <p><u>BILL NO.1</u></p> <p><u>EXTERNAL WORK</u></p> <p><u>LANDSCAPING</u></p> <p><u>User note:</u></p> <p>Where applicable the landscape architect's specification should be annexed to the bills of quantities or included in this section, clearly stating that it is supplementary to and to take precedence over the "Model Preambles for Trades".</p> <p><u>Maintenance period:</u></p> <p>Attention is drawn to the maintenance period prescribed in the specification.</p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p><u>Nature of Ground.:</u></p> <p>The soil material on site varies between clayey-silty sands and clays of low plasticity, respectively classifying as SC-SM and CL. These soils are corrosive. The shale encountered at depth is characterised as either poorly graded gravels or clayey gravels of low plasticity.</p> <p>(For more details on the soil conditions, please refer to the attached geotechnical investigation report marked as annexure E)</p> <p>Descriptions of excavations shall be deemed to include all ground conditions classified as "earth" described in the above report and where more difficult character as indicated, these are separately measured.</p> <p align="center">Carried to Collection</p> <p>Section No. 5 External works Bill No. 1 LANDSCAPING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			
		R	

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Carting away of excavated material.:

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

Excavations, Filling , etc.

The Contractor shall notify the Principal Agent as soon as the excavations are ready to receive foundations and no building work may be started until the Principal Agent has approved the excavations.

Over excavations taken beyond the levels and sizes shown or required to obtain a solid foundation shall be filled by the contractor, at his own expense, with 15MPa concrete.

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

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

Blasting:

No blasting will be allowed without the written permission of the Principal Agent.

Should blasting be necessary, the Contractor shall take every precaution to protect the Works and persons, animals and property in the vicinity of the Works. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall make good such damage at his own expense.

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Section No. 5

External works

Bill No. 1

LANDSCAPING

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Testing:

Prices for filling are to include for all necessary density tests in accordance with SANS 1200D.

Prescribed density tests:

NOTE: The Contractor is specifically referred to the SANS 1200 clause regarding the number of density tests required on the layer work, filling, etc. The tests as prescribed are deemed to be included in the appropriate rates for the layer work, filling, etc. and will not be paid for separately. The following density tests measured are over and above those normally required by SANS 1200 and is for the use of the Engineer only and will only be paid for if instructed in writing and approved as acceptable by the Engineer.

SITE CLEARANCE, ETC.**Site clearance, etc.:**

1	Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scaffolding up as required and cart away all vegetation and debris.	m2	5 415		
2	Stripping average 200mm thick layer of top soil and stockpiling on site.	m2	5 415		

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Section No. 5

External works

Bill No. 1

LANDSCAPING

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>BULK EXCAVATION</u>				
<u>Open face excavation in all materials other than rock over sloping site.:</u>				
3	Reduced levels under floors.	m3	1 648	
<u>Extra over bulk excavation in all materials for excavation in (on-site verification required for payment):</u>				
4	Soft rock.	m3	165	
5	Hard Rock.	m3	82	
<u>Extra over bulk excavation in earth for breaking up and removing</u>				
6	Brickwork	m3	1	
7	Unreinforced concrete	m3	2	
8	Reinforced concrete	m3	2	
<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk).:</u>				
9	Off site to a dumping site to be found by the Contractor.	m3	1 624	
<u>Earth filling supplied by the contractor, temporarily stockpiled on site including haulage approximately 100m from perimeter of stock piles.:</u>				
10	150mm Thick sub-base course of G5 material compacted to 98% MOD AASHTO density in 150mm thick layers, under floors, aprons, ramps, steps, etc.	m3	812	
11	150mm Thick sub-base course of G7 material compacted to 98% MOD AASHTO density in 150mm thick layers, under floors, aprons, ramps, steps, etc.	m3	812	
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Section No. 5 External works Bill No. 1 LANDSCAPING BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>Filling with approved material from the excavations and spread, level, water and compact to a density of at least 98% Mod.AASHTO maximum and trim level.:</u>				
12	Under floors, pavings, etc.	m3	812		
	<u>Coarse river sand filling compacted to 100% Mod. AASHTO maximum density:</u>				
13	Under floors, pavings, etc.	m3	8		
	<u>Prescribed density tests on filling.:</u>				
14	Modified AASHTO Density test.	No	54		
	<u>Compaction of surfaces:</u>				
15	Rip and scarify top surface of existing formation to a depth of 150mm and compact to not less than 100% of Modified AASHTO density.	m2	5 415		
	<u>Bituminous premix road surfacing</u>				
16	Paving to parking areas, roadways, etc	m2	618		
	<u>Prepare surfaces, wash thoroughly, remove loose material, leave to dry and apply two coats SABS approved waterborne acrylic road marking paint:</u>				
17	Markings on surfaces, 100mm wide.	m	524		
	<u>Approved brand of weed killer mixed and applied in accordance with manufacturer's instruction.:</u>				
18	Under floors and pavings, etc. (Provisional).	m2	775		
	<u>LANDSCAPING:</u>				
	<u>Ground preparation:</u>				
19	Cultivation and preparation of areas to be planted.	m2	4 640		
	<u>Grassing, ground covers, etc</u>				
20	Lawn kikuyu(Pennisetum clandestinum)-instant.	m2	4 640		
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	Section No. 5				
	External works				
	Bill No. 1				
	LANDSCAPING				
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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

External works

Bill No. 1

LANDSCAPING

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External works

Bill No. 1

LANDSCAPING

BILL OF ESTIMATE***QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD***

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	Quantity	Rate	Amount
<p><u>SECTION NO.4</u></p> <p><u>COVERED WALKWAYS</u></p> <p><u>BILL NO.2</u></p> <p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Nature of Ground.:</u></p> <p>The soil material on site varies between clayey-silty sands and clays of low plasticity, respectively classifying as SC-SM and CL. These soils are corrosive. The shale encountered at depth is characterised as either poorly graded gravels or clayey gravels of low plasticity.</p> <p>(For more details on the soil conditions, please refer to the attached geotechnical investigation report marked as annexure E)</p> <p>Descriptions of excavations shall be deemed to include all ground conditions classified as "earth" described in the above report and where more difficult character as indicated, these are separately measured.</p> <p><u>Carting away of excavated material.:</u></p> <p>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.</p> <p align="center">Carried to Collection</p> <p>Section No. 5 External works Bill No. 2 WALKWAYS BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			
		R	

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Excavations, Filling , etc.

The Contractor shall notify the Principal Agent as soon as the excavations are ready to receive foundations and no building work may be started until the Principal Agent has approved the excavations.

Over excavations taken beyond the levels and sizes shown or required to obtain a solid foundation shall be filled by the contractor, at his own expense, with 15MPa concrete.

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

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

Blasting:

No blasting will be allowed without the written permission of the Principal Agent.

Should blasting be necessary, the Contractor shall take every precaution to protect the Works and persons, animals and property in the vicinity of the Works. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall make good such damage at his own expense.

Testing:

Prices for filling are to include for all necessary density tests in accordance with SANS 1200D.

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Section No. 5
External works
Bill No. 2
WALKWAYS

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Prescribed density tests:

NOTE: The Contractor is specifically referred to the SANS 1200 clause regarding the number of density tests required on the layer work, filling, etc. The tests as prescribed are deemed to be included in the appropriate rates for the layer work, filling, etc. and will not be paid for separately. The following density tests measured are over and above those normally required by SANS 1200 and is for the use of the Engineer only and will only be paid for if instructed in writing and approved as acceptable by the Engineer.

Cost of tests:

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

Formwork:

Descriptions of formwork shall be deemed to include use and waste only (except where described as left in or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.

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

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

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External works

Bill No. 2

WALKWAYS

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Unless otherwise agreed as being measurable in terms of the foregoing paragraph, formwork necessitated by irregularly excavated faces or for other reasons decided upon by the contractor (e.g. over excavation) is not separately measurable. The cost thereof shall be deemed to be included in the contractor's allowance for concrete cast against excavated surfaces.

Provisional quantities allowing for the formwork described above together with the associated excavation for working space, have been measured in these Bills of Quantities. In the final account, these provisional quantities will be omitted and formwork to be measured will be determined by the initial prescription and/or subsequent authorised instructions of the structural engineer, together with formwork determined by the quantity surveyor as being necessary as defined above

For tendering purposes, the structural engineer has indicated that, for design purposes, he will require formwork to all the sides of the following concrete elements below ground level:

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.

Formwork to sides of bases, pile caps, ground beams, etc., will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks.

The structural engineer reserves the right to vary the above requirements at any time during the construction period at his discretion

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**CONSTRUCTION OF PROPOSED NEW
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<u>Concrete in panels:</u>					
Descriptions of surface beds cast in panels shall be deemed to include casting in panels approximately 9m ² . Descriptions (prices) of concrete in surface beds cast in panels shall be deemed to include formwork, fillets and the like in forming the panels.					
<u>SITE CLEARANCE, ETC.</u>					
<u>Site clearance, etc.:</u>					
1	Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scaffolding up as required and cart away all vegetation and debris.	m2	622		
2	Stripping average 200mm thick layer of top soil and stockpiling on site.	m2	622		
<u>BULK EXCAVATION</u>					
<u>Excavation in all materials other than rock not exceeding 2m deep.:</u>					
3	Reduced levels under walkways, etc.	m3	311		
4	Trenches, etc.	m3	949		
<u>Extra over excavation other than bulk in all materials for excavation in (on-site verification required for payment).:</u>					
5	Soft rock.	m3	31		
6	Hard Rock.	m3	16		
<u>Extra over bulk excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk).:</u>					
7	Surplus material from excavations and/or stock piles on site to a dumping site to be found by the Contractor.	m3	187		
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	<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density.:</u>				
8	Pavings, etc.	m3	93		
	<u>Filling with G6 approved material supplied and carted onto site by the Contractor, and spread, level, water, and compact in 150mm layers to density of at least 98% Mod. AASHTO maximum density.:</u>				
9	Under floors, pavings, etc.	m3	93		
	<u>Filling with G7 approved material supplied and carted onto site by the Contractor, compacted to a density of at least 97% Mod. AASHTO maximum density.:</u>				
10	Under floors, etc.	m3	93		
	<u>Coarse river sand filling compacted to 100% Mod. AASHTO maximum density.:</u>				
11	Under floors, etc.	m3	31		
	<u>Keeping excavations free of water.:</u>				
12	Keeping excavations free of water other than subterranean water.		Item		
	<u>Prescribed density tests on filling.:</u>				
13	"Modified AASHTO Density" test.	No	6		
	<u>Compaction of surfaces.:</u>				
14	Rip and scarify top surface of existing formation to a depth of 150mm and compact to not less than 100% of Modified AASHTO density.	m2	622		
	<u>SOIL POISONING</u>				
	<u>Approved brand of weed killer mixed and applied in accordance with manufacturer's instruction.:</u>				
15	Under floors and pavings, etc. (Provisional).	m2	622		
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<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>					
<u>REINFORCED CONCRETE</u>					
<u>25 Mpa/19mm Concrete.:</u>					
16	Surface beds on water proofing.	m3	62		
17	Strip footing	m3	271		
18	Bases	m3	104		
<u>TEST BLOCKS</u>					
<u>Test blocks.:</u>					
19	Making and testing sets of three 150 x 150 x 150 mm concrete strength test cubes (Provisional).	Sets	17		
<u>Finishing top surfaces of concrete smooth with a wood float :</u>					
20	Aprons to falls	m2	622		
<u>Smooth Formwork to Sides:</u>					
21	Edges, risers, ends, and reveals not exceeding 300mm high.	m	1 205		
<u>Rough formwork to Sides:</u>					
22	Bases (Provisional).	m2	542		
<u>Saw cut joints:</u>					
23	40 x 3mm Saw cut joint in top of concrete.	m	603		
<u>Mild steel reinforcement to structural concrete work:</u>					
24	Mild steel bars of varying diameter.	t	27.11		
<u>Fabric reinforcement:</u>					
25	Type 245 fabric reinforcement in concrete surface in concrete surface beds, slabs, etc.	m2	622		
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	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u>																	
26	One brick walls.	m2		844														
	<u>Facebricks Prime Cost Of R6 500.00 Per Thousand Excluding VAT Delivered To The Site Pointed With Square Recessed Horizontal And Vertical Joints:</u>																	
27	Extra over brickwork for face brickwork in foundations.	m2		313														
	<u>One layer of 350 micron Consol Plastics Gunplas USB Green waterproof sheeting (or equal and approved) sealed at laps with Gunplas Pressure Sensitive Tape:</u>																	
28	Under surface beds.	m2		622														
	<u>Two part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc including raking out expansion joint filler if necessary:</u>																	
29	In 40 x 3 mm saw cut joints in floors.	m		603														
	<u>0,58mm Kliplok 700 "Chromadek" or equal and approved profile concealed fix galvanised roof sheeting with "Chromadec" finish on one side in single lengths and fixed to steel purlins at (purlins elsewhere) with and including accessories:</u>																	
30	Roof covering with pitch not exceeding 25 degrees, in transportable lengths not exceeding 20m.	m2		628														
	<u>Welded columns in single lengths with flat section base, top, bearer and connection plates bolted to Beams:</u>																	
31	90 x 90 x 3mm x 7,95kg/m Square Hollow-section columns.	t		12.05														
	<u>Purlins and rails bolted to steel:</u>																	
32	100 x 50 x 20 x 3 Lipped channel section purlins bolted to purlin cleats fixed to beams.	t		9.04														
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	Quantity	Rate	Amount
<p><u>SECTION NO.4</u></p> <p><u>ROADS, PAVINGS, ETC.</u></p> <p><u>BILL NO.3</u></p> <p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p><u>Nature of Ground.:</u></p> <p>The soil material on site varies between clayey-silty sands and clays of low plasticity, respectively classifying as SC-SM and CL. These soils are corrosive. The shale encountered at depth is characterised as either poorly graded gravels or clayey gravels of low plasticity.</p> <p>(For more details on the soil conditions, please refer to the attached geotechnical investigation report marked as annexure E)</p> <p>Descriptions of excavations shall be deemed to include all ground conditions classified as "earth" described in the above report and where more difficult character as indicated, these are separately measured.</p> <p><u>Carting away of excavated material.:</u></p> <p>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.</p>			
Carried to Collection		R	
<p>Section No. 5</p> <p>External works</p> <p>Bill No. 3</p> <p>ROADS, PAVING, ETC.</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

**CONSTRUCTION OF PROPOSED NEW
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Excavations, Filling , etc.

The Contractor shall notify the Principal Agent as soon as the excavations are ready to receive foundations and no building work may be started until the Principal Agent has approved the excavations.

Over excavations taken beyond the levels and sizes shown or required to obtain a solid foundation shall be filled by the contractor, at his own expense, with 15MPa concrete.

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

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

Blasting:

No blasting will be allowed without the written permission of the Principal Agent.

Should blasting be necessary, the Contractor shall take every precaution to protect the Works and persons, animals and property in the vicinity of the Works. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall make good such damage at his own expense.

Testing:

Prices for filling are to include for all necessary density tests in accordance with SANS 1200D.

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**CONSTRUCTION OF PROPOSED NEW
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Prescribed density tests:

NOTE: The Contractor is specifically referred to the SANS 1200 clause regarding the number of density tests required on the layer work, filling, etc. The tests as prescribed are deemed to be included in the appropriate rates for the layer work, filling, etc. and will not be paid for separately. The following density tests measured are over and above those normally required by SANS 1200 and is for the use of the Engineer only and will only be paid for if instructed in writing and approved as acceptable by the Engineer.

SUPPLEMENTARY PREAMBLES**Sizes in descriptions.:**

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

Hollow walls etc.:

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

Face bricks.:

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

Pointing.:

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

All pointing to be approved by the Architect via sample panel which is to be built on site.

COLOURS

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

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<u>BULK EXCAVATION</u>					
<u>Excavation in all materials other than rock not exceeding 2m deep.:</u>					
3	Reduced levels under roads, paving, etc.	m3	2 750		
<u>Extra over bulk excavation in all materials for excavation in (on-site verification required for payment).:</u>					
4	Soft rock.	m3	275		
5	Hard Rock.	m3	138		
<u>Extra over bulk excavation in earth for breaking up and removing</u>					
6	Brickwork	m3	22		
7	Unreinforced concrete	m3	26		
8	Reinforced concrete	m3	28		
<u>Extra over bulk excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk).:</u>					
9	Surplus material from excavations and/or stock piles on site to a dumping site to be found by the Contractor.	m3	2 406		
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% Mod AASHTO density.:</u>					
10	Under floors, pavings, etc.	m3	427		
<u>Filling with G5 approved material supplied and carted onto site by the Contractor, and spread, level, water, and compact in 150mm layers to density of at least 98% Mod. AASHTO maximum density.:</u>					
11	Under floors, pavings, etc.	m3	501		
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	<u>Filling with G7 approved material supplied and carted onto site by the Contractor, compacted to a density of at least 97% Mod. AASHTO maximum density.:</u>				
12	Under floors, pavings, etc.	m3	1 535		
	<u>Coarse river sand filling compacted to 100% Mod. AASHTO maximum density.:</u>				
13	Under floors, etc.	m3	512		
	<u>Keeping excavations free of water.:</u>				
14	Keeping excavations free of water other than subterranean water.		Item		
	<u>Prescribed density tests on filling.:</u>				
15	"Modified AASHTO Density" test.	No	102		
	<u>Compaction of surfaces.:</u>				
16	Rip and scarify top surface of existing formation to a depth of 150mm and compact to not less than 100% of Modified AASHTO density.	m2	10 234		
	<u>SOIL POISONING</u>				
	<u>Approved brand of weed killer mixed and applied in accordance with manufacturer's instruction.:</u>				
17	Under floors and pavings, etc. (Provisional).	m2	10 234		
	<u>ROADWORK, PARKING AREAS AND PAVING</u>				
	<u>Paving of 60 mm interlocking concrete paving bricks with butt joints on 25mm thick sandbed (compacted thickness) with sand and cement mixture swept into joints and hosed down.:</u>				
18	60mm Paving laid in stretcher bond pattern to walkways, etc to falls.	m2	10 234		
19	220mm Wide brick-on-flat header course edgings on 200mm thick mortar bed.	m	502		
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<u>Pre cast concrete kerbing finished smooth on exposed surfaces including building in, bedding, jointing, pointing, concrete haunching, excavation, backfilling, ramming, etc. complete as indicated.:</u>					
20	Barrier kerb (Figure 3) overall size 150 x 300mm high.	m	418		
<u>PAINTWORK</u>					
<u>PAINTWORK, ETC. TO NEW WORK</u>					
<u>Prepare surfaces, wash thoroughly, remove loose material, leave to dry and apply two coats SABS approved water borne acrylic road marking paint:</u>					
21	Markings on paving surfaces, 100mm wide.	m	727		
22	Disabled parking sign in 1000 x 1000mm surround.	No	1		
23	Numerical numbers on paving surfaces, 100mm wide.	No	42		
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Copper pipes.:

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

Fixing of pipes.:

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

Reducing fittings.:

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

Excavations.:

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

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

Laying, backfilling, bedding, etc of pipes.:

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

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

Flush pans.:

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

Stainless steel basins, sinks, wash troughs, urinals, etc.:

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.

Waste unions.:

Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

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<u>WATER SUPPLIES (DOMESTIC AND FIRE)</u>					
<u>Class 12 HDPE pipes:</u>					
1	30mm Pipes.	m	46		
2	75mm Pipes.	m	205		
3	30mm Pipes laid in and including trenches not exceeding 1m deep.	m	20		
4	50mm Pipes laid in and including trenches not exceeding 1m deep.	m	175		
5	50mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep.	m	58		
6	75mm Pipes laid in and including trenches not exceeding 1m deep.	m	512		
7	75mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep.	m	307		
<u>Extra over class 12 HDPE pipes for fittings:</u>					
8	30mm bend.	No	5		
9	50mm bend.	No	3		
10	75mm bend.	No	54		
11	30mm Tee.	No	3		
12	50mm Tee.	No	3		
13	75mm Tee.	No	35		
14	30mm End cap.	No	6		
15	50mm End cap.	No	6		
16	75mm End cap.	No	6		
17	75 x 50mm Reducing junction.	No	17		
18	75 x 30mm Reducing junction.	No	4		
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	<u>Sundries.:</u>				
19	Water valve inspection chamber measuring approximately 645 x 645mm on plan complete with concrete surface bed, brick chamber below not exceeding 1000mm deep internally and cover gratings, etc.	No	3		
20	50mm Valve.	No	4		
21	75mm Valve.	No	2		
22	"Meinecke Cosmos WPD" or similar and approved water meter to the engineer's specifications.	No	1		
23	Unreinforced concrete thrust blocks in trenches at bends, tees, etc. including extra excavation, formwork, etc (Provisional).	m3	1		
	<u>Municipal connection.:</u>				
24	Municipal connection.		Item		
	<u>Testing.:</u>				
25	Testing water pipe system.		Item		
	<u>FIRE APPLIANCES ETC</u>				
	<u>Fire hydrants.:</u>				
26	75mm Galvanised vertical steel pipe cast in concrete (Concrete elsewhere measured).	m	14		
27	75mm Diameter 2500 KPa pressure gauge syphon and stopcock, including tapped hole in steel pipe.	No	7		
28	75 x 65mm Brass double lug tamper proof hydrant valve with cap and chain.	No	7		
29	Galvanised socket suitable for 65mm diameter steel pipe.	No	7		
30	75mm Diameter galvanised steel 90 degrees long radius.	No	7		
31	75 x 65mm steel galvanised iron tee reducer.	No	7		
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32	65mm Diameter Male quick delivery hose.	No	7		
	<u>Fire hydrant pedestals.:</u>				
33	Unreinforced concrete hydrant pedestal 1300mm high, cast around vertical pipe with bottom 800mm below ground, 616 x 616mm square at base and tapering to 190 x 190mm overall octagonal shaped top, including mass concrete base, excavation, formwork and two coats of paint to exposed surfaces.	No	7		
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	Quantity	Rate	Amount
<p><u>SECTION NO.4</u></p> <p><u>SOIL DRAINAGE</u></p> <p><u>BILL NO.5</u></p> <p><u>PLUMBING AND DRAINAGE</u></p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained.</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>'Polycop' polypropylene pipes.:</u></p> <p>Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with 'Fast-fuse' heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated.</p> <p>Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions.</p> <p>All pipe diameters are nominal external.</p> <p><u>uPVC pipes and fittings.:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p> <p style="text-align: right;">Carried to Collection</p> <p>Section No. 5 External works Bill No. 5 PLUMBING AND DRAINAGE BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			
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**CONSTRUCTION OF PROPOSED NEW
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Copper pipes.:

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

Fixing of pipes.:

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

Reducing fittings.:

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

Excavations.:

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

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

Laying, backfilling, bedding, etc of pipes.:

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

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

Flush pans.:

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

Stainless steel basins, sinks, wash troughs, urinals, etc.:

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.

Waste unions.:

Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

SOIL DRAINAGE**Class 6 Corflo uPVC pipes.:**

1	110mm Pipes laid in and including trenches not exceeding 1m deep.	m	52
2	110mm Pipes laid vertically or ramped to backdrops, rodding eyes, etc (no excavations).	m	69
3	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep.	m	52
4	160mm Pipes laid vertically or ramped to backdrops, rodding eyes, etc (no excavations).	m	73
5	160mm Pipes laid in and including trenches not exceeding 1m deep.	m	365
6	160mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep.	m	365

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	<u>Extra over class 6 Corflo uPVC pipes for fittings.:</u>				
7	110mm Bend.	No	17		
8	110mm Tee.	No	9		
9	110mm End cap.	No	2		
10	110mm Reducing Tee.	No	3		
11	160mm Bend.	No	24		
12	160mm Junction.	No	15		
13	160mm Reducing junction.	No	4		
14	160mm Access bend.	No	13		
15	160mm Access junction.	No	16		
16	160mm Access reducing junction.	No	11		
17	160mm Access double junction.	No	9		
18	160mm Rodding eye including cover plate, unreinforced concrete surround, etc.	No	28		
19	160mm inspection chamber including cover plate, unreinforced concrete surround, etc.	No	10		
	<u>Sumps, catchpits, inspection chambers, etc (gratings and covers elsewhere).:</u>				
20	Pre-cast concrete inspection chamber size 1000mm internal diameter not exceeding 1000mm deep internally, complete with 150mm thick pre- cast concrete cover slab with rebated opening for cover and frame, benching in bottom chamber and dished down to channels.	No	16		
21	Pre-cast concrete inspection chamber size 1000mm internal diameter exceeding 1000mm but not exceeding 1500mm deep internally, complete with 150mm thick pre-cast concrete cover slab with rebated opening for cover and frame, benching in bottom chamber and dished down to channels.	No	22		
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22	Pre-cast concrete inspection chamber size 1000mm internal diameter exceeding 1500mm but not exceeding 2000mm deep internally, complete with 150mm thick pre-cast concrete cover slab with rebated opening for cover and frame, benching in bottom chamber and dished down to channels.	No	16		
23	Pre-cast concrete inspection chamber size 1000mm internal diameter exceeding 2000mm but not exceeding 2500mm deep internally, complete with 150mm thick pre-cast concrete cover slab with rebated opening for cover and frame, benching in bottom chamber and dished down to channels.	No	22		
<u>Covers, etc.:</u>					
24	740mm Diameter 204kg cast iron manhole cover and frame.	No	77		
25	Lifting key for manhole cover (To be handed over to employer upon completion).	No	15		
<u>Pipe connections.:</u>					
26	Excavate to expose and break into side of existing manhole, break through side into manhole for new 110mm uPVC pipe connection, including changing benching, etc to accommodate new connection.	No	3		
<u>Encasing pipes in concrete.:</u>					
27	15MPa/19mm Unreinforced concrete encasing minimum 200mm thick all round 110mm pipes (pipes elsewhere measured) including any additional excavation, formwork, etc.	m	10		
<u>Sundries.:</u>					
28	Testing soil drainage system.		Item		
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	Quantity	Rate	Amount
<p><u>SECTION NO.4</u></p> <p><u>STORMWATER DRAINAGE</u></p> <p><u>BILL NO.6</u></p> <p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p><u>Nature of Ground.:</u></p> <p>The soil material on site varies between clayey-silty sands and clays of low plasticity, respectively classifying as SC-SM and CL. These soils are corrosive. The shale encountered at depth is characterised as either poorly graded gravels or clayey gravels of low plasticity.</p> <p>(For more details on the soil conditions, please refer to the attached geotechnical investigation report marked as annexure E)</p> <p>Descriptions of excavations shall be deemed to include all ground conditions classified as "earth" described in the above report and where more difficult character as indicated, these are separately measured.</p> <p><u>Carting away of excavated material.:</u></p> <p>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.</p>			
Carried to Collection		R	
<p>Section No. 5</p> <p>External works</p> <p>Bill No. 6</p> <p>STORMWATER</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

**CONSTRUCTION OF PROPOSED NEW
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Excavations, Filling , etc.

The Contractor shall notify the Principal Agent as soon as the excavations are ready to receive foundations and no building work may be started until the Principal Agent has approved the excavations.

Over excavations taken beyond the levels and sizes shown or required to obtain a solid foundation shall be filled by the contractor, at his own expense, with 15MPa concrete.

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

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

Blasting:

No blasting will be allowed without the written permission of the Principal Agent.

Should blasting be necessary, the Contractor shall take every precaution to protect the Works and persons, animals and property in the vicinity of the Works. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall make good such damage at his own expense.

Testing:

Prices for filling are to include for all necessary density tests in accordance with SANS 1200D.

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<u>Prescribed density tests:</u>					
NOTE: The Contractor is specifically referred to the SANS 1200 clause regarding the number of density tests required on the layer work, filling, etc. The tests as prescribed are deemed to be included in the appropriate rates for the layer work, filling, etc. and will not be paid for separately. The following density tests measured are over and above those normally required by SANS 1200 and is for the use of the Engineer only and will only be paid for if instructed in writing and approved as acceptable by the Engineer.					
<u>SITE CLEARANCE, ETC.</u>					
<u>Site clearance, etc.:</u>					
1	Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scuffling up as required and cart away all vegetation and debris.	m2	1 587		
2	Stripping average 200mm thick layer of top soil and stockpiling on site.	m2	1 587		
<u>EXCAVATION OTHER THAN BULK</u>					
<u>Excavation in all materials other than rock not exceeding 2m deep.:</u>					
3	Reduced levels under floors, pavings, channels, etc.	m3	555		
<u>Extra over excavation other than bulk in all materials for excavation in (on site verification required for payment):</u>					
4	Soft rock.	m3	56		
5	Hard Rock.	m3	28		
<u>Risk of collapse of excavations other than bulk.:</u>					
6	Sides of trench and hole excavations not exceeding 1,5m deep.	m2	3 173		
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<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
7	Off site to a dumping site to be found by the Contractor.	m3	555	
<u>Earth filling supplied by the contractor, temporarily stockpiled on site including haulage approximately 100m from perimeter of stock piles.:</u>				
8	150mm Thick sub-base course of G5 material compacted to 98% MOD AASHTO density in 150mm thick layers, under floors, aprons, ramps, steps, channels, etc.	m3	238	
<u>Keeping excavations free of water.:</u>				
9	Keeping excavations free of all water other than subterranean water.		Item	
<u>Prescribed density tests on filling.:</u>				
10	Modified AASHTO Density test.	No	16	
<u>Compaction of surfaces.:</u>				
11	Rip and scarify top surface of existing formation to a depth of 150mm and compact to not less than 100% of Modified AASHTO density.	m2	1 587	
<u>SOIL POISONING.</u>				
<u>Approved brand of weed killer mixed and applied in accordance with manufacturer's instruction.:</u>				
12	Under floors, pavings, etc. (Provisional).	m2	1 587	
<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>				
The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.				
Carried to Collection			R	
Section No. 5 External works Bill No. 6 STORMWATER BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
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The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles.

SUPPLEMENTARY PREAMBLES

Cost of tests:

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

Formwork:

Descriptions of formwork shall be deemed to include use and waste only (except where described as left in or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.

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

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

Unless otherwise agreed as being measurable in terms of the foregoing paragraph, formwork necessitated by irregularly excavated faces or for other reasons decided upon by the contractor (e.g. over excavation) is not separately measurable. The cost thereof shall be deemed to be included in the contractor's allowance for concrete cast against excavated surfaces.

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	<p>Provisional quantities allowing for the formwork described above together with the associated excavation for working space, have been measured in these Bills of Quantities. In the final account, these provisional quantities will be omitted and formwork to be measured will be determined by the initial prescription and/or subsequent authorised instructions of the structural engineer, together with formwork determined by the quantity surveyor as being necessary as defined above</p> <p>For tendering purposes, the structural engineer has indicated that, for design purposes, he will require formwork to all the sides of the following concrete elements below ground level:</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>Formwork to sides of bases, pile caps, ground beams, etc., will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks.</p> <p>The structural engineer reserves the right to vary the above requirements at any time during the construction period at his discretion</p> <p><u>Concrete in panels:</u></p> <p>Descriptions of surface beds cast in panels shall be deemed to include casting in panels approximately 9m². Descriptions (prices) of concrete in surface beds cast in panels shall be deemed to include formwork, fillets and the like in forming the panels.</p> <p><u>REINFORCED CONCRETE</u></p> <p><u>25 Mpa/19mm Concrete.:</u></p>				
13	900mm Wide V-Drains cast in panels to falls.	m3	317		
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	<p>Section No. 5 External works Bill No. 6 STORMWATER BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>				

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<u>SMOOTH FORMWORK (DEGREE OF ACCURACY II)</u>					
<u>Smooth Formwork to Sides.:</u>					
14	Edges, risers, ends, and reveals not exceeding 300mm high.	m	1 587		
<u>FINISHING TOP SURFACE OF CONCRETE</u>					
<u>Finishing top surfaces of concrete smooth with a steel trowel.:</u>					
15	Aprons, stormwater channels, soak-away slabs, etc.	m2	1 587		
<u>MOVEMENT JOINTS ETC.</u>					
<u>Polyurethane or equal and approved joint forming material in movement joint.:</u>					
16	10mm Joints between concrete surfaces not exceeding 300mm wide.	m	317		
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<u>REINFORCEMENT (PROVISIONAL)</u>					
<u>Fabric reinforcement.:</u>					
17	Type 193 fabric reinforcement in concrete aprons, channels, soak-away slabs, etc.	m2	1 587		
<u>WATERPROOFING</u>					
<u>JOINT SEALANTS ETC.:</u>					
18	In 10mm x 10mm movement joints between concrete surfaces.	m	317		
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		Quantity	Rate	Amount
<u>SECTION NO.4</u>				
<u>FENCING AND RAILING</u>				
<u>BILL NO.7</u>				
<u>FENCING AND RAILING</u>				
The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.				
<u>THE FOLLOWING WORK IN FENCING AND RAILING (ALL TRADES)</u>				
NOTE: All Supplementary preambles noted in the preceding sections apply equally to trades and items measured under the entire external works section, unless stated otherwise.				
<u>"Invisible wall" black coated or equal and approved Mesh Fencing, etc.:</u>				
1	Supply and install fencing comprising of steel mesh panels, size 3000 x 1800mm high formed of 4.05mm diameter welded apertures with horizontal apertures spaced at 12.7mm centres and vertical apertures spaced at 76.2mm centres, each panel flanged to 70 degrees along each side and to 30 degrees along top and bottom, each panel bolted between 2 posts with 24No. Anti vandal bolts including 8No. double bolt combo clamps and 8No. single bolt combo clamps, post size 100 x 54mm SHS, 3240mm high 12 x holed for bolts, top end closed with cap and bottom end welded to 150 x 150 x 3mm base plate cast 450mm deep into 300 x 300 x600mm deep 25MPa mass concrete base elsewhere measured.	m	1 161	
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	Quantity	Rate	Amount
<p><u>BILL NO.1</u></p> <p><u>EXTERNAL WORKS</u></p> <p><u>RETAINING WALL</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill.</p> <p><u>Nature of Ground.:</u></p> <p>The soil material on site varies according to the depths excavated. Between 0 and 300mm of excavation, the topsoil is moist, dark brown, med dense, uniform silty sand. Between 300mm and 600mm of excavation, the nature of soil is slightly moist, light yellowish orange, med dense and uniform silty sand. Further below between 600mm and 1000mm, the soil nature slightly moist, dark brown blotched grey, very dense, uniform clayey and silty soil.</p> <p>(For more details on the soil conditions, please refer to the attached geotechnical investigation report marked as annexure E).</p> <p>Descriptions of excavations shall be deemed to include all ground conditions classified as "earth" described in the above report and where more difficult character as indicated, these are separately measured.</p> <p><u>Carting away of excavated material.:</u></p> <p>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.</p>			
Carried to Collection		R	
<p>Section No. 5</p> <p>External works</p> <p>Bill No. 8</p> <p>RETAINING WALL</p> <p>BILL OF ESTIMATE</p> <p>QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Excavations, Filling , etc.

The Contractor shall notify the Principal Agent as soon as the excavations are ready to receive foundations and no building work may be started until the Principal Agent has approved the excavations.

Over excavations taken beyond the levels and sizes shown or required to obtain a solid foundation shall be filled by the contractor, at his own expense, with 15MPa concrete.

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

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

Blasting:

No blasting will be allowed without the written permission of the Principal Agent.

Should blasting be necessary, the Contractor shall take every precaution to protect the Works and persons, animals and property in the vicinity of the Works. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall make good such damage at his own expense.

Testing:

Prices for filling are to include for all necessary density tests in accordance with SANS 1200D.

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RETAINING WALL

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

Prescribed density tests:

NOTE: The Contractor is specifically referred to the SANS 1200 clause regarding the number of density tests required on the layer work, filling, etc. The tests as prescribed are deemed to be included in the appropriate rates for the layer work, filling, etc. and will not be paid for separately. The following density tests measured are over and above those normally required by SANS 1200 and is for the use of the Engineer only and will only be paid for if instructed in writing and approved as acceptable by the Engineer.

BOUNDARY, SCREEN WALLS, WATER TANK BASES, ETC**EARTHWORKS**

1	Excavate in earth for surface trenches not exceeding 2000mm deep.	m3	214
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2	Excavate in earth for working space (at Contractor's discretion) exceeding 500mm and not exceeding 1500mm deep to side of ? for the erection and removal of formwork and return, fill and consolidate spoil on completion. (Distance from face of ? to side of excavation is ?mm).	m2	423
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Risk of collapse of excavations other than bulk:

3	Allow for risk of collapse to sides of trench and base excavations not exceeding 1500mm deep.	m2	179
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CARTING AWAY**Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):**

4	Off site to a local approved dumping site to be supplied by the Contractor.	m3	173
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EARTH FILLING, ETC.

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**CONSTRUCTION OF PROPOSED NEW
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	<u>Filling with approved material from the excavations and spread, level, water and compact to a density of at least 93% Mod.AASHTO maximum and trim level:</u>				
5	Under floors, pavings, etc.	m3	41		
	<u>Filling with G7 approved material supplied and carted onto site by the Contractor, compacted to a density of at least 93% Mod. AASHTO maximum density:</u>				
6	Earth filling, selected by the Contractor from the excavated material, deposited in layers not exceeding 150mm thick, watered and consolidated as backfilling to trenches, bases, etc.	m3	455		
	<u>SOIL POISONING</u>				
	<u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u>				
7	Sides and bottoms of trenches, holes, etc. (Provisional).	m2	709		
	<u>COMPACTION OF SURFACES</u>				
	<u>Compaction of surfaces:</u>				
8	Rip and scarify top surface of existing formation to a depth of 150mm and compact to not less than 100% of Modified AASHTO density.	m2	13		
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
	<u>15 Mpa Concrete:</u>				
9	Surface blinding.	m3	7		
	<u>25 Mpa/19mm Concrete:</u>				
10	Strip footing.	m3	41		
	<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				

Carried to Collection

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Section No. 5

External works

Bill No. 8

RETAINING WALL

BILL OF ESTIMATE

QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	<u>25 Mpa/19mm Concrete:</u>				
11	Strip footings.	m3	4		
	<u>REINFORCED CONCRETE</u>				
	<u>25 Mpa/19mm Concrete.:</u>				
12	Retaining wall.	m3	5		
	<u>CONCRETE</u>				
13	Set of three concrete test cubes size 150 x 150 x 150mm overall including testing (Provisional).	Sets	8		
	<u>FORMWORK</u>				
	<u>Rough formwork to sides:</u>				
14	Retaining wall.	m2	33		
15	Edge, risers, ends and reveals not exceeding 300mm high or wide.	m	22		
	<u>REINFORCEMENT</u>				
	<u>Mild Steel Bar Reinforcement To Structural Concrete Work</u>				
16	Mild steel reinforcement bars.	t	0.27		
	<u>High Tensile Steel Bar Reinforcement To Structural Concrete Work</u>				
17	High tensile steel reinforcement bars.	t	0.62		
	<u>PRECAST CONCRETE</u>				
	<u>Precast cement concrete (35MPa) S10 Terraforce retaining blocks 500 x 400mm x 250mm high set sloping against excavated surfaces:</u>				
18	Precast concrete blocks according to engineer's drawings 18006_CE_605.	m2	92		
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	Section No. 5				
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	RETAINING WALL				
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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

	<u>Precast cement concrete (35MPa) L500 retaining blocks 500 x 450mm x 170mm high set sloping against excavated surfaces:</u>			
19	Precast concrete blocks according to engineer's drawings 18006_CE_605.	m2	139	
	<u>DAMP PROOFING TO WALLS AND FLOORS</u>			
	<u>One Layer 250 Micron Waterproof Sheeting</u>			
20	Vertically to walls.	m2	261	
	<p align="center">Carried to Collection</p>		R	
	Section No. 5 External works Bill No. 8 RETAINING WALL BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

External works

Bill No. 8

RETAINING WALL

COLLECTION

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Section No. 5

External works

Bill No. 8

RETAINING WALL

BILL OF ESTIMATE***QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD***

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>JOINERY FITTINGS</u>				
<u>Supply and installation of fixed furniture.:</u>				
1	Provide the amount of R 1, 000, 000.00 (One million Rands) for fixed furniture complete.	Item		1 000 000.00
2	Profit on above item.	Item		
3	Attendance on Ditto.	Item		
<u>TIMBER FLOORING</u>				
<u>Supply and installation of Timber flooring:</u>				
4	Provide the amount of R 100,000.00 (One hundred Thousand Rands) for supply and installation of Timber flooring to Multi purpose Hall stage.	Item		100 000.00
5	Profit on above item.	Item		
6	Attendance on Ditto.	Item		
<u>SIGNAGE</u>				
<u>Supply and installation of Statutory signage:</u>				
7	Provide the amount of 10, 000.00 (Ten Thousand Rands) for Signage.	Item		10 000.00
8	Profit on above item.	Item		
9	Attendance on Ditto.	Item		
<u>Supply and installation of general signage.:</u>				
10	Provide the amount of 20, 000.00 (Twenty Thousand Rands) for Signage.	Item		20 000.00
11	Profit on above item.	Item		
12	Attendance on Ditto.	Item		
Carried to Collection			R	
Section No. 6 Provisional Sums Bill No. 1 PROVISIONAL SUMS BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>BURGLAR PROOFING</u>				
<u>Supply and installation of burglar proofing.:</u>				
13	Provide the amount of R 400,000.00 (Three Hundred Thousand Rands) for burglar proofing to windows.	Item		400 000.00
14	Profit on above item.	Item		
15	Attendance on Ditto.	Item		
<u>METAL WORK</u>				
<u>Supply and installation of mesh steel grade over ceilings (Computer room).:</u>				
16	Provide the amount of R 150, 000.00 (One Hundred And Fifty Thousand Rands) for Mesh steel grade over ceilings (Computer room).	Item		150 000.00
17	Profit on above item.	Item		
18	Attendance on Ditto.	Item		
<u>BLINDS</u>				
<u>Supply and installation of blinds to Administration block:</u>				
19	Provide the amount of R 50,000.00 (Fifty Thousand Rands) for window blinds.	Item		50 000.00
20	Profit on above item.	Item		
21	Attendance on Ditto.	Item		
<u>BOOSTER PUMP</u>				
<u>Supply and installation of booster pump.:</u>				
22	Provide the amount of R6 000.00 (Six Thousand Rands) for supply and installation of booster pump.	Item		6 000.00
23	Profit on above item.	Item		
24	Attendance on Ditto.	Item		
Carried to Collection			R	
Section No. 6				
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BILL OF ESTIMATE				
QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

<u>GREASE TRAP & FLOOR DRAINS</u>					
<u>Supply and installation of grease traps & floor drains.:</u>					
25	Provide the amount of R 10,000.00 (Ten Thousand Rands) for supply and installation of grease traps & floor drains.	Item		10 000.00	
26	Profit on above item.	Item			
27	Attendance on Ditto.	Item			
<u>GAS STORAGE AND BOTTLES</u>					
<u>Supply and installation of Gas storage and bottles.:</u>					
28	Provide the amount of R 50,000.00 (Fifty Thousand Rands) for supply and installation of gas storage and bottles.	Item		50 000.00	
29	Profit on above item.	Item			
30	Attendance on Ditto.	Item			
<u>WATER STORAGE TANK</u>					
<u>Supply and installation of Water Storage Tank.:</u>					
31	Provide the amount of R 250, 000.00 (One Hundred and Fifty Thousand Rands) for supply and installation of Water Storage Tank complete with elevated stand (All to the specification and approval of the engineer).	Item		250 000.00	
32	Profit on above item.	Item			
33	Attendance on Ditto.	Item			
<u>DRINKING FOUNTAINS</u>					
<u>Construction of drinking fountains:</u>					
34	Provide the amount of R 70,000.00 (Seventy Thousand Rands) for construction of drinking fountains.	Item		70 000.00	
Carried to Collection					
			R		
Section No. 6					
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**CONSTRUCTION OF PROPOSED NEW
DOMES PRIMARY SCHOOL IN PARYS**

Provisional Sums

Bill No. 1

PROVISIONAL SUMS

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Section No. 6

Provisional Sums

Bill No. 1

PROVISIONAL SUMS

BILL OF ESTIMATE***QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD***

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

		Quantity	Rate	Amount
<u>SECTION NO. 6</u>				
<u>BILL NO. 1</u>				
<u>OCCUPATIONAL HEALTH AND SAFETY</u>				
NOTE: Bidders are advised to study the Occupational Health and Safety Act, (Act no. 85 of 1993) including the 2014 Construction Regulations before pricing this bill.				
Bidders must note that it is compulsory to price all items as specified regarding Health and Safety in this bill, the Occupational Health and Safety Act (Act 85 of 1993) and the 2014 Construction Regulations.				
FAILURE TO DO SO WILL INVALIDATE THE TENDER				
The following items serves as a breakdown of the expected cost items for the requirements of the Act and have to be duly completed and returned with the tender form (refer to the Occupational Health and Safety Specification for detail of clauses as listed).				
<u>Fixed-Charge Items (Part C4 Clause 10.2.1)</u>				
<u>a) Preparation of Health and Safety Plan</u>				
1	The sum shall cover all costs involved in the preparing the Health and Safety Plan (which includes the risk assessment), which shall include the preparation of all permit applications and notifications as required by this specification and shall include the employment cost of all health and safety personnel employed for the preparation of the Contractor's Health and Safety Plan.		SUM	
<u>b) Health and Safety Training</u>				
2	The sum shall cover all costs involved in preparation of the all necessary Health and Safety Induction Training materials required from the training of the Contractor's employees, Subcontractors and all visitors to the Works.		SUM	
Carried to Collection			R	
Section No. 7				
Occupational Health & Safety				
Bill No. 1				
Occupational Health & Safety				
BILL OF ESTIMATE				
QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD				

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

	<u>c) Personal Protective Clothing and Equipment</u>			
3	The sum shall cover all costs involved in the initial provision of all personal protective clothing and equipment for the Contractor's employees and Subcontractors and any visitors to the Works, as required by this specification (which includes the requirements of the Occupational Health and Safety Act, 1993 and its regulations, as amended).		SUM	
	<u>d) Fences, Signs and Barricades</u>			
4	The sum shall cover all costs involved in the initial provision of all fences, signs and barricades necessary for the protection of all persons, plant, vehicles, equipment or facilities, as required by this specification (which includes the requirements of the Occupational Health and Safety Act, 1993 and its regulations, as amended).		SUM	
	<u>e) Establishment of Safety Administration</u>			
5	The sum shall cover all costs involved in establishment of all administrative matters required by this specification which shall include, but not limited to, the establishment of the Health and Safety File.		SUM	
	<u>f) Other Health and Safety Fixed-charge Obligations</u>			
6	The sum shall cover the fixed costs of all other obligations that are required for the safe execution of the Works in accordance with the requirements of this specification and that are not specifically covered in 10.2.1(a), (b), (c), (d) or (e).	Item		
	<u>Time-Related Items (Part C4, Clause 10.2.2)</u>			
7	a) Implementation and maintenance of Health and Safety Plan (IN MONTHS)	No	10.00	
	The sum shall cover all costs involved in the implementation and maintenance of the Health and Safety Plan. This shall include but shall not be limited to the following:			
	Carried to Collection		R	
	Section No. 7			
	Occupational Health & Safety			
	Bill No. 1			
	Occupational Health & Safety			
	BILL OF ESTIMATE			
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			

**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

8	<p>1) The employment cost of all health and safety personnel including consultants, health and safety officers, inspectors, supervisors and issuers required in terms of the Contractor's Health and Safety Plan,</p> <p>2) Updating the Health and Safety Plan as needed,</p> <p>3) Carrying out of periodic audits and follow-up audits,</p> <p>4) Compiling ongoing risk assessments and risk assessment reports as required by the Works,</p> <p>5) Convening of regular safety meetings with the Safety Representatives,</p> <p>6) Accompanying and supporting the Employer or his Safety Agent during ad hoc audits,</p> <p>7) Compilation of monthly safety reports and statistics for the Employer or his Safety Agent,</p>	No	10.00		
9	<p>b) Implementation and maintenance of Training (IN MONTHS)</p> <p>The sum shall cover all costs involved in the implementation of the induction training of the Contractor's employees, Subcontractors and all visitors to the Works.</p>	No	10.00		
10	<p>c) Maintenance of Personal Protective Clothing and Equipment (IN MONTHS)</p> <p>The sum shall cover all costs involved in maintenance, repair or replacement of personal protective clothing required by the Contractor's employees or Subcontractors and all visitors to the Works.</p>	No	10.00		
11	<p>d) Maintenance of Fences, Signs and Barricades (IN MONTHS)</p> <p>The sum shall cover all costs involved in maintenance, repair or replacement for whatever reason of fences, signs and barricades used for the Works. The rate shall include for the provision of security guards for the safeguarding of the items provided should this be necessary.</p>	No	10.00		
Carried to Collection					R
<p>Section No. 7 Occupational Health & Safety Bill No. 1 Occupational Health & Safety BILL OF ESTIMATE QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD</p>					

Carried to Collection

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**CONSTRUCTION OF PROPOSED NEW
DOME PRIMARY SCHOOL IN PARYS**

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1	Preliminaries	34		
2	Building Works	114		
3	Electrical Installation	159		
4	Mechanical Installations	221		
5	External works	279		
6	Provisional Sums	285		
7	Occupational Health & Safety	290		
	Sub-total		R	
	Provide the amount of R 3, 500, 000.00 (Three Million Five Hundred Thousand Rands) for CPAP as indicated in the Preliminaries Bill to be used in terms of the Principal Building Agreement.	Item		3 500 000.00
	Sub-total		R	
	Add: 5% Contingencies		R	
	Sub-total		R	
	Add: CDP Contingency	Item		500 000.00
	Sub-total.		R	
	Add: Value Added Tax (VAT) @ 15%		R	
	Carried to Form of Tender		R	
	BILL OF ESTIMATE			
	QUANTUM BUILT AND ENVIRONMENT CONSULTANTS (PTY) LTD			