		Quantity	Rate	Amou
BII	<u>LL NO. 1</u>			
<u>PR</u>	RELIMINARIES			
<u>su</u>	JPPLEMENTARY PREAMBLES			
<u>Me</u>	eaning of terms "Tender" and "Tenderer"			
hei coi	y reference to the words "Tender" or "Tenderer" rein and/or in any other documentation shall be nstrued to have the same meaning as the words "Bid" "Bidder"			
<u>Pre</u>	eliminaries			
<u>NC</u>	DTES			
1.	Second edition of June 2005) in conjunction with the Contract Data is taken to be incorporated herein.			
2.	The Tenderer is deemed to have taken cognizance of the above mentioned documents for the full intent and meaning of each clause. These clauses are referred to by clause number and heading only.			
3.	Where standard clauses or options are not applicable to this contract such modifications, corrections or supplements as are necessary, are given under each relevant clause.			
4.	Where any items are not used for this specific contract such items are nevertheless listed but marked not applicable in the amount column.			
5.	The amount of the Preliminaries to be included in each monthly payment certificate shall be assessed as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the total of prices excluding any contingency sum, the amount for the Preliminaries and any amount in respect of contract price adjustment provided for in the contract.			
6	Carried to Summary		R	
PR Bill	ction No. 1 ELIMINARIES I No. 1 ELIMINARIES AND GENERAL QS			

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- 6. Where the initial contract period is extended, the monthly charge shall be calculated on the basis as set out in (v) but taking into account the revised period for completing the works.
- 7. The amount or the items of the Preliminaries are adjusted to take account of the theoretical financial effect which changes in time or value (or both) have on this section. Such adjustments are based on adjustments in the following categories as recorded in the Bill of Quantities:
  - an amount which is not varied, namely Fixed
  - an amount which is varied in proportion to the contract value, namely Value Related; and
  - an amount which is varied in proportion to the construction period as compared to the initial construction period excluding revisions to the construction period for which the contractor is not entitled to adjustment in terms of the contract, namely Time Related.
- 8. Where no provision is made in the Bill of Quantities to indicate which of the three categories in (vii) apply or where no selection is made, the adjustments shall be based on the following breakdown:
  - 10 percent is Fixed;
  - 55 percent is Value Related
  - 35 percent is Time Related
- 9. The adjustment of the Preliminaries shall apply notwithstanding the actual employment of resources in the execution of the works. The contract value used for the adjustment of the Preliminaries shall exclude any contingency sum, the amount for the Preliminaries and any amount in respect of contract price adjustment provided for in the contract. Adjustments in respect of any staged or sectional completion shall be prorated to the value of each section.
- 10. Items not priced in these preliminaries are deemed to be included elsewhere in this bill of quantities.

#### **Carried to Summary**

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	SECTION A: CORE CLAUSES			
	<u>GENERAL (A1)</u>			
1	Clause 1.0 Clause 11.2(4) is amended by replacing it with the following: The Contract Date is the date when the contractor receives one fully completed signed copy of this document, including the schedule of deviations (if any) as contained in the Form of Offer and Acceptance			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	THE CONTRACTOR'S MAIN RESPONSIBILITIES (A2)			
2	Clause 2.0 The contractor must provide and keep a copy of the NEC3 Engineering and Construction Contract - Option B: Priced contract with bill of quantities applicable to this contract and a copy of the Procurement Document on the site, to which the Project Manager and Supervisor have access at all times			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	<u>TIME (A3)</u>			
3	Clause 3.0			
	Fixed:			
	Value Related:			
	Time Related:	Item		
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	TESTING AND DEFECTS (A4)			
4	Clause 4.0			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	PAYMENT (A5)			
5	Clause 5.0 Clause 50.0 is amended by the addition of the following clause: Materials and goods stored off site are not included in the amount authorised for payment			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	COMPENSATION EVENTS (A6)			
6	Clause 6.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	<u>TITLE (A7)</u>			
7	Clause 7.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
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	RISKS AND INSURANCE (A8)			
8	Clause 8.0			
Ŭ	Fixed:			
	Value Related:			
	Time Related:	Item		
		Item		
	TERMINATION (A9)			
9	Clause 9.0			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	SECTION B: MAIN OPTION CLAUSES			
	PRICED CONTRACT WITH BILL OF QUANTITIES (B1)			
	<u>Clause 10.0</u>			
	<u>The quantities in provisional bills of quantities are a</u> <u>n indication of the works tobe executed and are subj</u> <u>ect to remeasurement</u>			
10	Clause 10.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	SECTION C: DISPUTE RESOLUTION			
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	OPTION W1 (C1)			
11	Clause 11.0			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	SECTION D: SECONDARY OPTION CLAUSES			
	X1 PRICE ADJUSTMENT FOR INFLATION (D1)			
12	Clause 12			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	X2 CHANGES IN THE LAW (D2)			
13	Clause 13.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	X3 MULTIPLE CURRENCIES (D3)			
14	Clause 14.0			
	Fixed:			
	Value Related:			
	Time Related:	Item		
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	X4 PARENT COMPANY GUARANTEE (D4)		
15	Clause 15.0		
	Fixed:		
	Value Related:		
	Time Related:	ltem	
	X5 SECTIONAL COMPLETION (D5)		
16	Clause 16.0		
	Fixed:		
	Value Related:		
	Time Related:	ltem	
	X6 BONUS FOR EARLY COMPLETION (D6)		
17	Clause 17.0		
	Fixed:		
	Value Related:		
	Time Related:	ltem	
	X7 DELAY DAMAGES (D7)		
18	Clause 18.0		
	Fixed:		
	Value Related:		
	Time Related:	ltem	
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	X12 PARTNERING (D8)			
19	Clause 19.0			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	X13 PERFORMANCE BOND (D9)			
20	Clause 20.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	<u>X14 ADVANCE PAYMENT TO THE CONTRACTOR (D</u> <u>10)</u>			
21	Clause 21.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	X15 LIMITATION OF THE CONTRACTOR'S LIABILITY FOR HIS DESIGNTO REASONABLE SKILL AND CAR E (D11)			
22	Clause 22.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
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	X16 RETENTION (D12)	
23	Clause 23.0	
	Fixed:	
	Value Related:	
	Time Related:	Item
	X17 LOW PERFORMANCE DAMAGES (D13)	
24	Clause 24.0	
	Fixed:	
	Value Related:	
	Time Related:	Item
	X18 LIMITATION OF LIABILITY (D14)	
25	Clause 25.0	
	Fixed:	
	Value Related:	
	Time Related:	Item
	X20 KEY PERFORMANCE INDICATORS (D15)	
26	Clause 26.0	
	Fixed:	
	Value Related:	
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	Z ADDITIONAL CONDITIONS OF CONTRACT (D16)			
27	Clause 27.0			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	SECTION E: CONTRACT DATA			
	CONTRACT DATA (E1)			
28	Clause 28 Tenderers are referred to Part C1.2 Contract Data for variables pertaining to this contract			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
	SECTION F: SPECIFIC PRELIMINARIES			
	PART C3.1 SCOPE OF WORKS PLANT AND MATERIALS (4.2)			
29	Materials, Samples and Shop drawings (4.2.2)			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
30	Instruction Manuals and Guarantees (4.2.3)			
	Fixed:			
	Value Related:			
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Training staff of the Employer (4.2.4)				
Fixed:				
Value Related:				
Time Related:	Item			
SITE ESTABLISHMENT (4.5)				
Facilities provided by the contractor - site office and storage stores (4.5.2)				
Fixed:				
Value Related:				
Time Related:	ltem			
Other Facilities and Services - Water, Electricity, Ablution and Telecommunication services/facilities (4.5.4)				
Fixed:				
Value Related:				
Time Related:	ltem			
Notice Boards (4.5.7)				
Fixed:				
Value Related:				
Time Related:	ltem			
Survey control and Setting out of the works (4.10)				
Fixed:				
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	Fixed:       Yalue Related:         Time Related:       SITE ESTABLISHMENT (4.5)         Facilities provided by the contractor - site office and storage stores (4.5.2)       Fixed:         Fixed:       Yalue Related:         Value Related:       Yalue Related:         Other Facilities and Services - Water, Electricity, Ablution and Telecommunication services/facilities (4.5.4)       Fixed:         Fixed:       Yalue Related:         Value Related:       Yalue Related:         Yalue Related:       Yalue Related:	Fixed:	Fixed:       Item         Value Related:       Item         SITE ESTABLISHMENT (4.5)       Item         Facilities provided by the contractor - site office and storage stores (4.5.2)       Item         Fixed:       Item         Value Related:       Item         Other Facilities and Services - Water, Electricity, Ablution and Telecommunication services/facilities (4.5.4)       Item         Fixed:       Item         Value Related:       Item         Notice Boards (4.5.7)       Item         Fixed:       Item         Survey control and Setting out of the works (4.10)       Item         Fixed:       Item         Value Related:       Item         Value Related:       Item         Section No. 1       PrecliminaRIES         PRELIMINARIES AND GENERAL       R	Fixed:       Item         Value Related:       Item         SITE ESTABLISHMENT (4.5)       Item         Facilities provided by the contractor - site office and storage stores (4.5.2)       Item         Fixed:       Item         Value Related:       Item         Other Facilities and Services - Water, Electricity, Ablution and Telecommunication services/facilities (4.5.4)       Item         Fixed:       Item         Value Related:       Item         Notice Boards (4.5.7)       Item         Fixed:       Item         Value Related:       Item         Survey control and Setting out of the works (4.10)       Item         Fixed:       Item         Value Related:       Item         Survey control and Setting out of the works (4.10)       Item         Fixed:       Item         Value Related:       Item         Survey control and Setting out of the works (4.10)       Item         Fixed:       Item         Value Related:       Item         Value Related:       Item         Section No. 1       Precultivity and and general         Preclutininaaries       Item         Preclutininaaries       Item

	MANAGEMENT OF THE WORKS (5.1)			
36	Planning and programming (5.1.3)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
37	Software application for programming (5.1.4)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
38	Testing, completion, commissioning and correction of defects (5.1.11)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
39	Recording of weather (5.1.12)			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
40	Management meetings (5.1.15)			
	Fixed:			
	Value Related:			
	Time Related:	ltem		
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41	Daily records (5.1.18)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	HEALTH AND SAFETY (5.2)			
42	Health and safety requirements (5.2.1)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
43	Protection of the Public (5.2.2)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
44	Barricades and lighting (5.2.3)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
45	Measures against disease and epidemics (5.2.5)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
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46	Compliance with HIV/Aids awareness (5.2.6)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
47	Compliance with OHS ACT and Construction Regulation 2014			
	Fixed:			
	Value Related:			
	Time Related:	Item		
48	Health ans safety file			
	Fixed:			
	Value Related:			
	Time Related:	Item		
49	OHS training			
	Fixed:			
	Value Related:			
	Time Related:	Item		
50	Enclosure of Works			
	Fixed:			
	Value Related:			
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51	Resting/Eating area			
	Fixed:			
	Value Related:			
	Time Related:	Item		
52	Ablution and latrine facilities			
	Fixed:			
	Value Related:			
	Time Related:	Item		
53	Security			
	Fixed:			
	Value Related:			
	Time Related:	Item		
54	COVID-19 compliance			
	Fixed:			
	Value Related:			
	Time Related:	Item		
55	Water			
	Fixed:			
	Value Related:			
	Time Related:	Item		
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56	First aid kit			
	Fixed:			
	Value Related:			
	Time Related:	Item		
57	Provision of PPE			
	Fixed:			
	Value Related:			
	Time Related:	Item		
58	Medical certificates of fitness			
	Fixed:			
	Value Related:			
	Time Related:	Item		
	ENVIRONMENTAL MANAGEMENT PROGRAMME			
59	It is required of the contractor to thoroughly study the Environmental Management Programme Specification (attached herewith under part C3 - Scope of Works) that must be read together with and is deemed to be incorporated under this Section of the bills of quantities Compliance to Environmental Management Programme (EMPR)/ Environmental Authorisation (EA) and Water Use License (WUL) (5.3.1) Fixed:	Item		
	Time Related:	Item		
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60	Rehabilitation Measures (including hydro seeding/ revegetation) (5.3.2)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
61	Waste management and disposal (including obtaining safe disposal slips from disposal facilities/ service providers); (5.3.3)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
62	Provision of chemical toilets (if no municipal connection) (5.3.4)			
	Fixed:			
	Value Related:			
	Time Related:	Item		
63	Removal of excess spoil from site (if any). (5.3.5)			
	Fixed:			
	Value Related:			
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	FOUNDATIONS (PROVISIONAL)			
	PREAMBLES			
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	SUPPLEMENTARY PREAMBLES			
	Nature of ground			
	The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" and/or "soft rock".			
	Excavation for working space in rock			
	Notwithstanding clause 11 page 8 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be			
	Carting away of excavated material			
	Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site			
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	Filling				
	Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material				
	EXCAVATION				
	Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for				
1	Trenches	m3	239		
2	Staircase bases	m3	8		
	SUNDRIES				
	Extra over trench and hole excavations in earth for excavation in				
3	Extra over excavations in earth for trenches and holes for excavations in soft rock	m3	124		
4	Extra over excavations in earth for trenches and holes for excavations in hard rock	m3	124		
	Extra over all excavations for carting away				
5	Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor	m3	139		
	Risk of collapse of excavations				
6	Risk of collapse of sides of excavations for trenches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	589		
	Keeping excavations free of water				
7	Allow for keeping excavations free of all water other than subterranean water		ltem		
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	FILLING, etc.				
8	Backfilling from the excavations to trenches and holes compacted to 90% modified AASHTO density	m3			
9	Earth filling from the excavations to under floors, steps, pavings, etc compacted to 90% modified AASHTO density	m3			
10	Imported earth filling supplied by the Contractor and brought onto site, under floors, steps, pavings, etc. compacted to 90% modified AASHTO density	m3	269		
11	50mm thick dry, clean, washed riversand layer evenly spread over filling (elsewhere measured), levelled, watered and rammed to receive waterproof membrane (elsewhere measured) under solid floors	m2	537		
	Compaction of surfaces				
12	Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	280		
13	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	537		
	Prescribed density tests on filling				
14	Tests to determine the degree of compaction, etc. of ground or filling	No	16		
	PROTECTION AGAINST TERMINTES				
15	To bottoms and sides of trenches, bases, etc	m2	869		
16	Poisoning surface of ground or filling under floors, steps, etc. including raking out 75mm deep V-shaped channels against the walls, etc. treating with poison solution, backfilling and ramming	m2	537		
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1		1	1		1	1
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES					
	15MPa/20mm concrete blinding					
17	Blinding	m3	14			
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES					
	<u>30MPa/20mm concrete</u>					
18	In footings to walls cast against excavated surfaces, stepped and levelled	m3	87			
	TEST CUBES					
19	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for <u>(Provisional)</u>	No	7			
	REINFORCEMENT					
	Steel bar reinforcement to structural concrete work					
20	Various diameter steel reinforcing bars	t	13.92			
	MASONRY					
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class 1 mortar					
21	One brick wall	m2	369			
22	Two brick wall	m2	3			
	Brick reinforcement					
23	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	4 339			
	FACE BRICKWORK					
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	External facings in approved Country Classic Satin face bricks (FBS) pointed with square recessed				
	horizontal and vertical joints				I
24	Extra over ordinary brickwork for facing and pointing in stretcher bond	m2	59		
25	Brick on edge coping	m	36		
	MOVEMENT JOINTS ETC				
26	Movement joint filler with debonding properties of 10mm softboard built in vertically between brickwork and concrete joints not exceeding 300mm high	m	536		
27	Movement joint of 10mm jointex built in vertically between brickwork	m2	99		
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	BILL No. 2			
	CONCRETE, FORMWORK AND REINFORCEMENT			
	PREAMBLES			
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	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 project manager. The testing shall be undertaken by an independent firm or institution nominated by the contractor and to the approval of the project manager. (Test cubes are measured separately)			
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	<u>Formwork</u>				
	Descriptions of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary y to ensure easy release during stripping and for reconditioning as necessary before re- use. The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.				
	Formwork to soffits of (solid) slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described				
	Formwork to sides of bases, pile caps, ground beams, etc, will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Foundations"				
	<u>CONCRETE</u>				
	REINFORCED CONCRETE				
	25MPa/20mm concrete				
1	Blinding	m3	40		
	30MPa/19mm concrete				
2	Thickened slab on waterproofing	m3	3		
3	Surface beds on waterproofing	m3	48		
4	Slabs, including beams and inverted beams	m3	142		
5	Stairs and landing	m3	9		
	TEST CUBES				
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1	Concrete test subse	1	I		1	1
6	Concrete test cubes Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for (Provisional)	No	20			
	CONCRETE SUNDRIES					
	<u>Finishing top surfaces of concrete smooth with a wood</u> <u>float</u>					
7	Surface beds, slabs, etc	m2	1 090			
	FORMWORK					
	Rough formwork to soffits and sides					
8	Soffits of slabs, beams and stairs propped up exceeding 1.5m high and not exceeding 3.5m high	m2	585			
9	Soffits of slabs and beams propped up not exceeding 6.0m high and not exceeding 7.5m high	m2	10			
10	Sides of slabs and beams propped up	m2	124			
11	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	345			
	MOVEMENT JOINTS ETC					
12	10mm saw cut joints	m	50			
13	10mm construction joints	m	63			
	REINFORCEMENT					
	Steel bar reinforcement to structural concrete work					
14	Various diameter steel reinforcing bars	t	15.25			
	Carried to Summary Section No. 2 BUILDING WORKS Bill No. 2 CONCRETEWORK, FORMWORK & REINFORCEMENTS (PR			R		+
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	MESH REINFORCEMENT				
15	Mesh reinforcement with mesh reference number 395 laid in walls, slab, etc. with 300mm wide side and end laps (measured net)	m2	537		
	Carried to Summa	ry		R	_
	BUILDING WORKS Bill No. 2 CONCRETEWORK, FORMWORK & REINFORCEMENTS (PI JMQS	R			

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ltem No		Quantity	Rate	Amount	
	BILL No. 3				
	MASONRY				
	PREAMBLES				
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	SUPPLEMENTARY PREAMBLES				
	BRICKWORK				
	Sizes in descriptions				
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
	Linings to concrete				
	Descriptions of linings to concrete, unless otherwise described, shall be deemed to include wire ties				
	Reinforced brick lintels				
	Lintels shall bear at least 160mm onto adjacent walling. Where such bearing cannot be obtained due to the proximity of adjacent openings the lintel shall be continuous				
	Carried to Summary		R		
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## 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

## SAMPLES

Samples of all masonry building units, shall consist of a minimum of 6 units

## STONEWORK

### Slate, marble, granite, etc

Slate, marble, granite, etc is to be best quality stone from an approved quarry, free from cracks and other defects and equal to samples to be submitted to and approved by the architect. Each stone is to hold its full size, square to the back and tobe set on its natural quarry bed

## Setting out

Care shall be exercised in setting out the work, the preparation of templates and the checking of the detail drawings. All measurements shall be taken on the site where necessary and the full size setting out of each course shall be done at the yardso as to ensure the proper fitting of each stone

Before putting any work in hand the contractor is to submit to the architect for his approval details of the manner in which he proposes to set out the slabs and joints in all wall facings, pavings, sills, treads, etc together with samples of grain or pattern matching

#### **Carried to Summary**

Section No. 2 BUILDING WORKS Bill No. 3 MASONRY (PROVISIONAL) JMQS

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## Face labours

Face labours are to match samples to be submitted to and approved by the architect Arrises are to be clean and sharp except to treads and thresholds where they are to be slightly rounded

## Bedding and jointing

Slate, marble, granite and other floor paving and wall linings are to be bedded solidly on the mortar thicknesses described and are to have tightly fitting butt joints unless otherwise stated Where stonework is to be fixed with adhesive, the adhesive is to be "TAL Goldstar/Bond" (mixed 20kg/5 litre) for external use or where white or light coloured marble is used, "TAL Goldstar" for internal use or other approved. The contractor will be liable for any defects to the slate, marble and granit e arising from the use of the adhesive

Where soffit linings are suspended the suspension system must be concealed and must be submitted to the architect for approval before work commences Where tolerance screws are required these are to be stainless steel expanding bolt type with matching stainless steel bracket and PVC clad dowel with nuts and washers etc

#### Damaged work

Any damaged stonework shall be discarded and replaced at the contractor's expense. No touching up will be permitted except in exceptional cases, with the architect's consent

#### **Descriptions**

Descriptions of stonework shall be deemed to include preparatory work, labours to backs, beds and joints, templates, mortices for bolts etc and for hoisting and setting in position, bedding, jointing and pointing, casing and protecting from injury and cleaning down at completion Descriptions of recessed pointing to stonework shall be deemed to be square recessed, hollow recessed, weathered pointing, etc

### **Carried to Summary**

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	TESTING OF MORTAR, ETC			
1	Allow for the testing of cement sample by an approved laboratory ( <u>Provisional</u> )		Item	
2	Allow for the testing of 25kg fine aggregate (sand) sample by an approved laboratory ( <u>Provisional</u> )		Item	
3	Allow for the testing of mortar test cubes by an approved laboratory ( <u>Provisional</u> )		Item	
	BRICKWORK			
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class 1 mortar			
4	Piers	m3	1	
5	Half brick wall	m2	309	
6	Half brick linings to outer skin of one brick wall forming, edge to 255mm concrete slab	m2	41	
7	Half brick wall in beamfilling	m2	38	
8	One brick wall	m2	2 018	
9	One and half brick wall	m2	6	
10	One brick wall in beam filling	m2	437	
	BRICKWORK SUNDRIES			
	Joint forming material in movement joints			
11	10mm jointex built in vertically between brick skins	m2	141	
	Slip joints between horizontal brick surfaces including two layers of three-ply malthoid on bearing surfaces			
12	Slip joint not exceeding 300mm wide	m2	18	
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	Prestressed fabricated lintels		
13	100 x 70mm Lintels in lengths not exceeding 3m	m	345
14	100 x 70mm Lintels in lengths exceeding 3m long and not exceeding 4.5m	m	92
15	100 x 70mm Lintels in lengths exceeding 4.5m and not exceeding 6m	m	84
	Brickwork reinforcement		
16	13mm Chicken wire mesh in patches, fixed to brickwork	m2	624
17	Brick reinforcement 75mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	2 758
18	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	16 998
	Galvanised hoop iron cramps, ties, etc		
19	30 x 1,6mm Wall tie 500mm long with both ends built into brickwork	No	589
	SUNDRIES		
20	230mm Wide turning piece to lintels etc	m	521
	FACE BRICKWORK		
	External facings in approved Country Classic Satin face bricks (FBS) pointed with square recessed horizontal and vertical joints		
21	Extra over brickwork for face brickwork	m2	1 128
22	Extra over brickwork for brick-on-edge header course lintels pointed on both faces and 220mm soffit	m	521
23	Extra over brickwork for brick-on-edge header course cill slightly sloping	m	255
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24	Extra over brickwork for brick-on-edge coping	m	147		
	NUTEC-CEMENT/FIBRE-CEMENT WINDOW SILLS				
25	150mm x 15mm thick wide fibre cement window sills firmly bedded in 4:1 cement mortar set flat and slightly projecting 10mm from wall edge	m	255		
	SAMPLE PANEL				
26	Construct a facebrick sample panel 2m long x 1,5m high of one brick wall in cement mortar faced and pointed on both sides in stretcher bond and with brick-on-edge coping to top and both sides including necessary excavations for and including 15Mpa/38mm mass concrete strip footing in a position as directed by the Representative/Agent and including demolishing and removal after completion of all brickwork	No	1		
	Carried to Summary			R	
	Section No. 2 BUILDING WORKS Bill No. 3 MASONRY (PROVISIONAL) JMQS				
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ltem No			Quantity	Rate	Amount
	BILL No. 4				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	WATERPROOFING				
	PREAMBLES				
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc, shall be laid under a ten year guarantee by an approved applicator. Waterproofing to roofs shall be laid to even falls to outlets, etc, with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
1	Dpc in brickwall	m2	187		
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
2	Under surface beds, ramp, etc	m2	537		
	Carried to Summary Section No. 2 BUILDING WORKS Bill No. 4 WATERPROOFING (PROVISIONAL) JMQS			R	
	BUILDING WORKS Bill No. 4 WATERPROOFING (PROVISIONAL)				R

	Waterproofing to Shower Floors and Walls				
	<u>"Thoroseal® FX100 elastomeric" waterproofing or equal approved undre coat and two final coats all in accordance with manufacturer's recommendations</u>				
3	On concrete shower floors	m2	11		
	<u>"Tal Superflex" waterproofing slurry or or equal approved</u>				
4	On shower walls	m2	40		
	WATERPROOFING TO ROOFS, BASEMENTS, ETC				
	One layer Derbigum SP4 waterproofing membrane, with and including 75mm side laps and 100mm end laps, sealed to primed surface to falls and crossfalls by 'torchfusion'. (Waterproofing to be installed by an Approved Derbigum Contractor under a ten year guarantee)				
5	On flat floors not exceeding 25 degrees from the horizontal, with and including 75mm side laps and 100mm end laps	m2	121		
	PROTECTIVE ROOFING PAINT				
	Two coats Roofcote bituminous aluminum paint				
6	On waterproofing to roofs	m2	121		
	JOINT SEALANTS ETC				
	<u>Coloured silicone sealing compound including backing</u> cord, bond breaker, primer, etc				
7	In isolation joints in floors including raking out expansion joint filler as necessary	m	536		
8	In vertical expansion joints between brickworks including raking out expansion joint filler as necessary	m	13		
9	In construction joints in floors	m	63		
10	In sawcut joints in floors	m	50		
	Carried to Summary			R	
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20mm crusher stone dressing evenly spread with larger stones around outlets       121         50mm thick on waterproofing to flat roofs       m2       121         Soften No. 2       Image: Soften No. 2       Image: Soften No. 2         BUILDING WORKS Bill No. 4       Image: Soften No. 2       Image: Soften No. 2         Building Norks Bill No. 4       Image: Soften No. 2       Image: Soften No. 2         Building Norks Bill No. 4       Image: Soften No. 2       Image: Soften No. 2         Bill No. 4       Image: Soften No. 5       Image: Soften No. 2         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         Bill No. 4       Image: Soften No. 5       Image: Soften No. 5         B	PROTECTIVE STONE DRESSING					
50mm thick on waterproofing to flat roofs m2 121	20mm crusher stone dressing even larger stones around outlets	enly spread with				
Section No. 2 BUILDING WORKS Bill No. 4 WATERPROOFING (PROVISIONAL)			m2	121		
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ltem No		Quantity	Rate	Amount	
	BILL No. 5				
	ROOF COVERINGS, ETC.				
	PREAMBLES				
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	Straight cutting				
	Descriptions of all roof coverings are deemed to include for all straight cutting				
	Note				
	The Contractor is to submit a certificate signed by the merchant, stating that the galvanised roof covering supplied complies with the required thickness specified				
	PROFILED METAL SHEETING AND ACCESSORIES				
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	Global Roofing Solutions 0.58mm thick 406mm cover Brownbuilt profile Chromadek® Z200 spelter ISQ550 Charcoal Grey finish topcoat and Pebble Grey backing coat roof sheeting, fixed to timber intermediate purlins at MAX 1200mm centres and eaves and ridge purlins at MAX 1200mm centres (final spacing to be calculated by an Engineer) using Duplex clips fixed with 10No.11 x 45mm long self- drilling wafer head PH2 screws, type 17 drill point fasteners (fastener lengths may vary depending on the insulation used or requirements), all following the manufacturer's specifications by a GRS approved contractor. • Brand: ArcelorMittal • Type of Building: Residential • Roof Pitch: 5.00° • Climatic Condition: Inland - Zone C1/C2 Low Corrosion Risk • Roof Profile: Brownbuilt • Material: Z200 spelter ISQ550 Chromadek®				
	<ul> <li>Material Gauge: 0.58mm</li> <li>Colour: Charcoal Grey.</li> </ul>				
1	Roof coverings with pitches not exceeding 25 degrees	m2	684		
2	To eaves closure	m2	82		
3	Extra over roof sheeting for bull nose bend on the eaves of the roof	m	64		
4	GSI and counter flashings to Architect's drawings	m	221		
	Lamdaboard high density closed cell Polyisocyanurate insulation colour white with Kraft facing, fixed concurrent with roof covering over purlins with "H" bar joiners screw fixed at 1200mm centres with 5mm gap between boards butt-joined over purlins				
5	80mm Insulation closely fitted and laid roofcovering, etc	m2	684		
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ltem No		Quantity	Rate	Amount
	BILL No. 6			
	CARPENTRY AND JOINERY			
	PREAMBLES			
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	SUPPLEMENTARY PREAMBLES			
	JoineryDescriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc			
	Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes			
	Fixing Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete			
	Decorative laminate finish Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish			
	ROOFS, ETC			
	Plate nailed timber roof truss construction			
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Plate nailed timber trusses shall be of approved design and manufacture and constructed with softwood structural timber by manufacture and constructed with softwood structural timber by a truss Fabricator holding a current Certificate of Competence awarded by the Institute of Timber Construction

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

The design, manufacture and transportation of the roof trusses, bracing, etc. shall be under the control of a registered Structural Engineer in accordance with SABS 0160 and SABS 0163, who shall, after erection, provide a certificate confirming that the design, manufacture, transportation, erection and bracing has been carried out in accordance with this specification

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

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

Erection shall be carried out in accordance with the procedures and recommedations of the manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research or as detailed by the designer

Prices for roof trusses and bracing shall include design and preparation of shop drawings

**Carried to Summary** 

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	The dimensions in the descriptions of the roof construction are nominal and actual measurements are to be obtained from the Representative/Agent and/or the site before design or fabrication of roof				
	trusses commences				
	Allow for the preparation and submission of the following documents in respect of all buildings				
1	Detailed shop drawings indicating truss sizes, truss positions, bracings, details, etc. to be submitted for approval prior the commencement of any fabrication		Item		
2	Design certificate indicating the licensed programme used, SABS specifications adhered to, general procedures and loadings adopted, sizes and grading of timber components, details, etc.		Item		
3	Erection guarantee certificate after the whole completed roof truss structure have been inspected, all defective work have been taken out and made good, etc. to the full satisfaction of the Principal Agent		Item		
	ROOF TRUSS CONSTRUCTION				
4	Roof construction, mono-pitch roof trust complete as a full set with and including trusses, beams, batterns and purlins, measured flat (See Architectural drawings) - Main House Roofs	m2	659		
	SUNDRIES				
	Sawn Softwood (Grade 5)				
5	38 x 114mm wall plates	m	147		
	WOOD PRESERVATIVE				
6	Two coats wood preservative applied hot on wrought exposed roof timbers	m2	493		
	FACIAS, BARGE BOARDS, ETC:				
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	Nutec or equally approved pressed fibre-cement with standard cover or jointing strips				
7	10 x 225mm Fascias boards including standard jointing strips	m	74		
8	15 x 260mm Barge boards, including standard jointing strips	m	47		
	<u>SKIRTINGS</u>				
9	18 x 125mm meranti skirting S2 plugged to wall	m	688		
	DOORS, DOOR FRAMES				
	<u>100 x 44mm thick wooden meranti door frame for</u> <u>115mm walls build/install into brickwork to</u> <u>manufacturer's specifications</u>				
10	For door size 762 x 2032mm	No	1		
11	For door size 813 x 2320mm	No	20		
	<u>140 x 44mm thick wooden meranti door frame for</u> 230mm walls build/install into brickwork to manufacturer's specifications				
12	For door size 813 x 2032mm	No	1		
13	For door size 813 x 2320mm	No	20		
	Hollow core horizontal groove door to manufacturer's specifications				
14	Door size 813 x 2348mm	No	28		
	Solid core door with masonite finish and concealed hardwood edges to manufacturer's specifications				
15	Door size 762 x 2032mm	No	1		
	Wooden meranti solid horizontal slatted door to manufacturers specifications. Fire rated single door.				
16	Door size 813 x 2032mm	No	1		
	Carried to Summary	,		R	
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17	Door size 813 x 2348mm	No	12		
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BILL No. 7			
CEILINGS, PARTITIONS AND ACCESS FLOORING			
PREAMBLES			
For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
SUPPLEMENTARY PREAMBLES			
Descriptions			
Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or 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 600mm centres, and where described as "bolted", the bolts are measured elsewhere			
Proprietary suspended ceilings			
Electric light fittings, diffusers, panels, etc generally are "lay in" units of the same dimensions as the suspension grid described and allowance shall be made accordingly for their support, inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing shall take cognisance thereof)			
Carried to Summary Section No. 2 BUILDING WORKS		R	
BOILDING WORKS BIII No. 7 CEILING, PARTIONINGS, ETC (PROVISIONAL) JMQS			

User note: The above note shall be included in the bills of quantities after confirmation of the basic design of the ceilings, lighting, air conditioning, etc "Rhino-Drywall" partition systems "Rhino-Drywall" partitions shall comprise 63,5mm top and bottom galvanised steel tracks with 63,5mm galvanised steel vertical studs at maximum 600mm centres, friction fitted or pop-riveted to the top and bottom tracks with similar additional verticalstuds as necessary at abutments, ends, etc and covered as described with wallboard screwed to studding with "Drywall" screws at maximum 220mm centres. Boards shall be butt jointed and finished with "Rhino" tape and "Readymix D" jointing compound allin accordance with the manufacturer's instructions, complete with flat section aluminium skirtings. Intersections and abutments are measured separately and descriptions shall be deemed to include any additional studs, corner beads, jointing compound Note: Wall paper and/or paint and varnish finishes are measured elsewhere User note: Alternatively, wallpaper may be included in the preamble, in which case last-mentioned is not required <b>INSULATION</b> "135mm thick flexible non-combustible lightweight Aerolite® insulation material between the roof trusses and over brandering/purlins in a completed roof and ceiling system. Install in accordance with the manufacturers detail and specification. Install Isover 100mm thick Aerolite non-combustible light weight Glasswool thermal ceiling insulation." insulation. • Climatic zone: Zone 3 • R-value: 2.50m <sup>2</sup> K/W				
• Thermal conductivity: 0.04 W/m²/K. Insulation	m2	523		
NAILED UP CEILINGS         Carried to Summary         Section No. 2         BUILDING WORKS         Bill No. 7         CEILING, PARTIONINGS, ETC (PROVISIONAL)         JMQS			R	

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2	GYPROC CEILING; 1 x RhinoBoard® 9mm (locally manufactured ISO 9001 & 14001 certification recycled paper content Greentag Level B) fixed to 38 X 38 BRANDERING 450mm centres fixed to tie beam/joist using one line of 2 Gyproc Grabber Screw 32mm. Maximum joist/tie beam spacing is 1200mm. Branders are joined using brander joiners. Fixed using Gyproc Sharp-point Screws 25mm at maximum 150mm centres. Gypframe® UltraSTEEL® Brandering suspended using Gyproc Suspension Bracket at 1200mm centres. Apply Gyproc RhinoTape® to all joints and internal corners. Install Gypframe® Corner Bead to all external corners. Cover Gyproc RhinoTape® with 1 layer of Gyproc RhinoLite® Cretestone® (locally manufactured). Horizontal ceilings, including 38 x 38mm SAP brandering at 400mm centres	m2	464		
	ISOBOARD CEILING; Ceilings to be Isoboard® high density 32-36kg/m <sup>3</sup> rigid extruded polystyrene 100% closed cell insulation ceiling formed of 30mm thick x 600mm wide tongue and grooved boards, with IsoPine finish, fixed to trusses under the timber purlins, and edge-fixed with concealed ceiling clips screwed to timber brandering. Boards to be secured to perimeter brandering with drywall screws and washers at 300mm centres. • Thickness: 30mm • Board finish: IsoPine.				
3	Horizontal ceilings, including 38 x 38mm SAP brandering at 400mm centres <u>Cornices</u>	m2	59		
4	POLYSTYTRENE CORNICE; NMC Decorative Mouldings Wallstyl® FD2 interior polystyrene skirting, size 15 x 110mm high fixed to wall with Adefix® F & W adhesive TIMBER CORNICE; 76mm x 19mm SA Pine cornice	m	526		
5	stop, fixed to wall with 38mm galvanised clout or steel nails at 300mm centres into wall, and to brandering at 400mm centres.	m	70		
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	SUNDRIES				
6	Extra over gypsum plasterboard ceiling for hinged pressed metal ceiling trap door size 600 x 600mm including all necessary ironmongery and 38 x 38mm SA Pine brace frame	No	8		
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ltem No		Quantity	Rate	Amount
	BILL No. 8			
	IRONMONGERY			
	PREAMBLES			
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	SUPPLEMENTARY PREAMBLES			
	Finishes to ironmongery			
	Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered; CH Chromium plated; SC Satin chromium plated: SE Silver enamelled; GE Grey enamelled; AS Anodised silver; AB Anodised bronze; AG Anodised gold; ABL Anodised black; PB Polished brass; PL Polished and lacquered; PT Epoxy coated; and SD Sanded.			
	General			
	All prime cost and provisional amounts are net and include for delivery to site of all articles concerned			
	THE FOLLOWING IRONMONGERY FIXED TO DOORS, ETC.			
	HINGES, BOLTS, ETC			
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	Approved				
1	100mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	4		
2	Two point locking panic bar - Single door - Door leaf 1000mm wide x 2270mm high (3102. PHX02. PHX04) NOTE:				
	Panic Hardware fitted to door using male/female type fixing screws	No	126		
	LOCKS				
3	Knob cylinder profile MD SC	No	32		
4	Double cylinder profile MD SC	No	21		
5	Mortice sash lock - Stainless steel	No	40		
6	Privacy E/P cylinder NP	No	12		
7	N888 without a cylinder	No	9		
	HANDLES				
8	Tea on rose blank handles	No	40		
9	Escutcheon CF cylinder	Pairs	40.0		
	SUNDRIES				
	<u>"Union" or similar approved</u>				
10	Aluminium door stop AS	No	48		
	"Door closure"				
11	DC cam-motion closure ENB/4 Sil	No	4		
	BATHROOM FITTINGS				
	"Logis Universal" or similar approved in chrome finish				
12	<u>"Logis Universal" or similar approved in chrome finish</u> Toilet chrome toilet paper holder	No	13		
12		No	13		
12		No	13		
12	Toilet chrome toilet paper holder Carried to Summar		13	R	
12	Toilet chrome toilet paper holder Carried to Summary Section No. 2 BUILDING WORKS		13	R	
12	Toilet chrome toilet paper holder Carried to Summary Section No. 2 BUILDING WORKS Bill No. 8 IRONMONGERY (PROVISIONAL)		13	R	
12	Toilet chrome toilet paper holder Carried to Summary Section No. 2 BUILDING WORKS Bill No. 8		13	R	

13	Double bath towel rail		No	13		
14	Towel hooks		No	12		
14	Towel hooks Toilet brush holder wall mounted		No	12		
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Bill No. 8       IRONMONGERY (PROVISIONAL)       Image: Comparison of the second of the secon	
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ltem No		Qı	uantity	Rate	Amount	
	BILL NO 9		. F			
	STRUCTURAL STEEL (PROVISIONAL)					
	SUPPLEMENTARY PREAMBLES					
	Tenderers are advised to study the document, specifications of materials and method to be used - "PW371" as published by the National Department of Public Works before pricing this Bill.					
	<u>Descriptions</u>					
	Descriptions of bolts shall be deemed to include nuts and washers					
	Descriptions of expansion anchors and bolts and chemical					
	anchors and bolts shall be deemed to include nuts, washers					
	and mortices in brickwork or concrete					
	Metalwork described as 'holed for bolt(s)' shall be deemed to exclude the bolts unless otherwise described					
	For more specifications refer to Structural and Civil Engineer's drawings					
	ROOF & SIDE CLADDING STRUCTURE					
	STEEL COLUMNS AND BEAMS					
	Grade 350WA structural steelwork including material, cutting and welding according to specifications in the following hot rolled sections:					
1	203x152x52 I-Section	t	0.88			
2	200x150x4 RHS	t	0.72			
3	100x100x4mm SHS steel columns	t	0.44			
						-
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4	650x250x12mm thick base plate	t	0.18		
5	100x100x5mm thick stiffener plate	t	0.05		
6	M12, Grade 8.8 bolts with nuts and washers used with Hilti Hit-V70	t	0.06		
7	8M16, Grade 8.8 holding down bolts, with nuts and washers	t	0.03		
	SUNDRIES				
	Grade 350WA structural steelwork including material, cutting and welding according to specifications in the following hot rolled sections:				
8	Non-shrink grout	dm3	16.000		
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ltem No		Quan	tity	Rate	Amount
	BILL No. 10				
	METALWORK				
	PREAMBLES				
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	SUPPLEMENTARY PREAMBLES				
	Descriptions Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described				
	STEEL HANDRAILS, BALUSTRADES, ETC				
	<u>1000mm high stainless steel by specialist.</u> Balustrades not to exceed 100mm c/c				
1	Balustrades to balconies as per Architect's drawings	m	32		
2	Balustrades to raking stairs and landings as per Architect's drawings	m	40		
	WELDED SCREENS, GATES, ETC				
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	<u>The following in framed and welded mild steel</u> <u>purpose made security grille gate and fixing in</u> position complete				
3	Pedestrian single gate complete as per Architect's drawings	No	2		
4	V-lite aluminium shutter Bi-Fold complete as per Architect's drawings, size 4800 x 2400mm high	No	4		
5	Single gate 855 x 2185mm high with frame of 50 x 25 x 1.6mm tubular section framed surround, mitred and welded at angles, gate formed of 25 x 25 x 1.6mm tubular section frame in two sections welded together, each section with two 25 x 25 x 1.6mm tubular section horizontal middle rails and all panels filled in with expanded mesh on inside of openings and with 10 x 10mm mild steel solid section beads on both sides of expanded metal, the frame bolted to wall with eight M10 x 80mm expansion bolts and fitted with four suitable hinges welded to gate and frame and gate supplied with lockable sliding bolt with keep welded to frame (padlock elsewhere)	No	3		
	ALUMINIUM WINDOWS, DOORS, SHOP FRONTS, ETC				
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	Aluminium frames with glazing as required by SANS part N complete with glazing and ironmongery as per Architect's drawings and fixed to brickwork or concrete as per manufacturer's specification, with and including Silicon inside and outside. Fire Rating to Fire Engineers Specification AAAMSA certified as to performance, glazing, surface finishing, hardware, fasteners, product certification and, when required, energy rating, anodising: SANS 999. Powder coating: SANS 1796, minimum thickness for all areas: 0,06 mm. SANS 10155 Accuracy in Buildings. Sealing: All corners mitred to form close joints, fixed with stainless self tapping screws to AAMSA standards. All aluminium joints to be sealed 100%. Whole unit to be sealed with silicon, after installation. Seal with matching silicone sealer between the aluminium and building structure, to be airtight. Contractors shall allow for a maximum 10x10mm fillet of clear silicone sealant to the external perimeter of all window units. Colour: Charcoal				
	Doors and Windows				
6	W1 - 1500 x 600mm high	No	8		
7	W2 - 2100 x 600mm high	No	8		
8	W3 - 1200 x 1800mm high	No	1		
9	W4 - 900 x 1800mm high	No	1		
10	W5 - 1200 x 600mm high	No	4		
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W7 - 400 x 1500mm high	No	1	
W8 - 3000 x 2380mm high	No	4	
W9 - 1800 x 600mm high	No	4	
W10 - 3600 x 1200mm high with aluminium sliding window shutters	No	8	
W11 - 900 x 900mm high	No	1	
W12 - 1000 x 1000mm high	No	1	
W13 - 600 x 600mm high	No	1	
D1 - Size 1200 x 2380mm high	No	4	
D4 - Size 900 x 2380mm high with 600 x 900mm high window	No	4	
D5 - Size 4800 x 2380mm high	No	4	
Aluminium windows with burglar bars, 15 x 15mm solid aluminium security bars, screws fixed to aluminium window frame @ 200mm c/c max. To opening section only. Colour Charcoal.			
W1 - 1500 x 600mm high	No	4	
W2 - 2100 x 600mm high	No	2	
W3 - 1200 x 1800mm high	No	1	
W4 - 900 x 1800mm high	No	1	
W5 - 1200 x 600mm high	No	4	
W6 - 900 x 1200mm high	No	4	
Carried to Summary Section No. 2 BUILDING WORKS Bill No. 10 METALWORK (PROVISIONAL) JMQS			
	W8 - 3000 x 2380mm high         W9 - 1800 x 600mm high         W10 - 3600 x 1200mm high with aluminium sliding window shutters         W11 - 900 x 900mm high         W12 - 1000 x 1000mm high         W13 - 600 x 600mm high         D1 - Size 1200 x 2380mm high         D4 - Size 900 x 2380mm high         D5 - Size 4800 x 2380mm high         Aluminium windows with burglar bars, 15 x 15mm solid aluminium security bars, screws fixed to aluminium window frame @ 200mm c/c max. To opening section only. Colour Charcoal.         W1 - 1500 x 600mm high         W2 - 2100 x 600mm high         W3 - 1200 x 1800mm high         W4 - 900 x 1800mm high         W5 - 1200 x 600mm high         W6 - 900 x 1200mm high     <	W7 - 400 x 1500mm high       No         W8 - 3000 x 2380mm high       No         W9 - 1800 x 600mm high       No         W10 - 3600 x 1200mm high with aluminium sliding window shutters       No         W11 - 900 x 900mm high       No         W12 - 1000 x 1000mm high       No         W13 - 600 x 600mm high       No         W13 - 600 x 2380mm high       No         D1 - Size 1200 x 2380mm high       No         D4 - Size 900 x 2380mm high with 600 x 900mm high window       No         D5 - Size 4800 x 2380mm high       No         Aluminium security bars, screws fixed to aluminium window frame @ 200mm c/c max. To opening section only. Colour Charcoal.       No         W1 - 1500 x 600mm high       No       No         W2 - 2100 x 1800mm high       No         W3 - 1200 x 1800mm high       No         W4 - 900 x 1800mm high       No         W5 - 1200 x 600mm high       No         W6 - 900 x 1200mm high       No         W6 - 900 x 1200mm high       No         W6 - 900 x 1200mm high       No         M1 - 10       METALWORK (PROVISIONAL)	W7 - 400 x 1500mm high       No       1         W8 - 3000 x 2380mm high       No       4         W9 - 1800 x 600mm high       No       4         W10 - 3600 x 1200mm high with aluminium sliding window shutters       No       8         W11 - 900 x 900mm high       No       1         W12 - 1000 x 1000mm high       No       1         W13 - 600 x 600mm high       No       1         U1 - Size 1200 x 2380mm high       No       4         D4 - Size 900 x 2380mm high with 600 x 900mm high window       No       4         D5 - Size 4800 x 2380mm high with 600 x 900mm high window       No       4         Aluminium windows with burglar bars, 15 x 15mm solid aluminium security bars, screws fixed to aluminium window frame @ 200mm c/c max. To opening section only. Colour Charcoal.       4         W1 - 1500 x 600mm high       No       1         W1 - 1500 x 1800mm high       No       1         W4 - 900 x 1800mm high       No       1         W4 - 900 x 1800mm high       No       4         W6 - 900 x 1200mm high       No       4         W6 - 900 x 1

	<u>32 x 20mm slatted aluminium gate with 20mm spacing between slats</u>				
28	D7 & D8 - Size 880 x 1800mm high	No	10		
29	DC1 - Size 485 x 2900mm high	No	4		
30	DC2 - Size 693 x 2900mm high	No	4		
31	PORCH - Size 2000 x 2900mm high	No	4		
	GARAGE DOORS				
32	4800 x 2380mm charcoal aluminium panel slatted double sectional garage door to manufacturer's specifications with and including garage door motor	No	4		
	CORNER PROTECTORS				
33	30 x 30 x 4mm angle steel weather bar including ancors at 300mm centres fixed to edge of floor	m	86		
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ltem No		Quantity	Rate	Amount
	BILL No. 11			
	PLASTERING			
	PREAMBLES			
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	SUPPLEMENTARY PREAMBLES			
	GRANOLITHIC			
	Method			
	The method to be used shall be either the monolithic or bonded method			
	Preparation			
	For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic shall then be applied immediately afterwards. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slabshall then be wetted and kept damp for at least six hours before applying the finish			
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# <u>Mix</u>

Granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SABS 1083 and be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregateshall be increased to the maximum size compatible with the thickness of the granolithic

#### Panels

Granolithic shall be laid in panels not exceeding 14m2 for granolithic finishes, not exceeding 9,5m2 for bonded finishes and not exceeding 6m2 for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width. Joints between panels shall be positioned, where possible, over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard andfinished with small V-joints

#### Laying

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

Bonded granolithic shall be applied to the slab after applying a 1:1 sand and cement slurry brushed over the surface and allowed to partially set before applying the granolithic, thoroughly compacted and lightly wood floated to the required levels

After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened, any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated

#### Curing, seasoning and protection

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

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	<u>Colour</u>				
	Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour				
	SPECIALIST PLASTER WALL COVERINGS				
	<u>General</u>				
	All specialist plaster wall coverings shall be executed in strict accordance with the manufacturer's instructions				
	<u>SCREEDS</u>				
	Screeds on concrete				
1	25-75mm thick on floors and landings	m2	1 000		
2	25-75mm thick on stairs	m2	38		
	<u>GRANOLITHIC</u>				
	Untinted granolithic on concrete				
3	30mm Thick on floors and landings	m2	10		
4	50mm thick on floors and landings	m2	5		
5	75mm high coved sirting	m	10		
	INTERNAL PLASTER				
	<u>One coat 1:4 cement plaster on brickwork finished</u> with steel trowel, 12-15mm thick				
6	On walls	m2	3 115		
7	On narrow widths	m2	92		
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	One coat 1:5 cement plaster on brickwork finished with steel trowel, 12-15mm thick. CEMENT PLASTERED CEILING: All exposed concrete ceilings to be cleaned properly, slushed with a 1:2 river sand/cement mixture. Slushing to be cured properly before applying 1:5 cement plaster finish with a fine woodfloat. smooth concrete surfaces must be chipped before slush is applied.				
8	On soffits of concrete slabs	m2	611		
	<u>Cement plaster rendering coat with gypsum skim</u> plasterfinishing coat, on brickwork				
9	On walls	m2	3 115		
10	On soffits of concrete slab	m2	502		
11	On narrow widths	m2	92		
	Plaster the entire ceiling with 3 to 6mm lightweight hemi-hydrate gypsum plaster the same day the board has been erected.				
12	On gypsum board ceilings	m2	537		
	EXTERNAL PLASTER				
	<u>One coat 1:4 cement plaster on brickwork finished</u> with steel trowel, 12-15mm thick				
13	On soffits of slabs	m2	109		
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ltem No		Quantity	Rate	Amount	
	<u>BILL No. 12</u>				
	TILING				
	PREAMBLES				
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	SUPPLEMENTARY PREAMBLES				
	Descriptions Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	All prime cost and provisional amounts are net and include for delivery to site of all articles concerned				
	WALL TILING				
	<u>Ceramic wall tiles (PC sum R250.00/M2 for supply</u> <u>and delivery, excluding labour, waste and VAT) fixed</u> <u>with adhesive to plaster (plaster elsewhere</u> <u>measured) and flush pointed with tinted waterproof</u> <u>jointing compound</u>				
1	On walls, isolated panels, splashbacks, etc	m2 43	в		
2	On narrow widths	m2	8		
			_		
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3	Circular cutting	m	9		
	FLOOR TILING				
	Internal floor tiles (PC sum R250.00/m <sup>2</sup> for supply and delivery, store, waste, excluding labour and VAT) fixed adhesive to bedding (bedding elsewhere) and flush po with tinted jointing compound				
4	To floors and landings with joints continuous in both directions	m2	707		
5	To stairs	m2	38		
6	Skirting 100mm high tile skirting	m	703		
	External floor tiles (PC sum R250.00/m <sup>2</sup> for supply and delivery, store, waste, excluding labour and VAT) fixed adhesive to bedding (bedding elsewhere) and flush po with tinted jointing compound				
7	To floors and landings with joints continuous in both directions	m2	288		
8	to steps	m2	73		
9	Skirting 100mm high tile skirting	m	330		
	SUNDRIES				
10	50 x 50 x 2mm thick natural anodised angle set aluminium to skirting	m	330		
11	Stainless steel tile-in corner protector 30 x 30 x 10mm brushed finish	m	5		
12	Aluminium angle edges with suitable flexible infill, brass	m	16		
13	External aluminium straight edge as by KIRK Marketing (Code: 686) or similar approved	m	29		
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14	M-trim aluminium tile stairnosing to suit tile (Code: ATIN100) or similar approved	m	103		
15	ATIN100) or similar approved F138 PVC Expansion Joints (12mm tile)	m	89		
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	BILL No. 13				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	PREAMBLES				
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	RAINWATER DISPOSAL				
	Aluminium gutter to approved profile and colour				
1	Eaves gutter (approximately size 100 x 100mm) with standard profile, fixed to timber roof trusses or fascias, etc	m	68		
2	Extra over for stop ends	No	14		
3	100mm diameter rainwater downpipe fixed to wall	m	90		
4	Extra over 100mm diameter rainwater downpipe for outlet	No	14		
5	Extra over 100mm diameter rainwater downpipe for eaves offset	No	14		
6	Extra over 100mm diameter rainwater downpipe for shoe	No	14		
	SANITARY FITTINGS				
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	anitaryware" or Equal Approved			
and cov	Wall mount Pan - Rimless with soft close seat /er with and including wall mounted concealed /stem with white flush plate.	No	13	
8 X-Base Basin	Vanity - Graphite Matt, 100cm D-Code Furniture	No	13	
D-Code	Built in Bathtub supplied with support frame	No	8	
Hansgr waste s	ohe S21 S210-F720 Built-in sink with manual et.	No	4	
	ohe S71 S719-U450 ss Steel Undermount single bowl sink 450	No	4	
	ohe Vernis Shape Overhead Shower 230 x , 1 Jet EcoSmart with ball joint adjustable spray - finish	No	8	
<u>"Frank</u>	e" or Equal Approved			
mini wa 240mm	0,8mm Grade 403 17/10 stainless steel ET103 sh trough (Code: 2560007), size 540 x 370 x deep with sloped front, wash ridges and 40mm butlet, fixing lugs (elsewhere measured)SS.	No	4	
double 348mm	0,8mm Grade 403 17/10 stainless steel ET102 wash trough (Code: 2560005), size 1030 x 430 x deep with sloped front, wash ridges and 40mm outlet, fixing lugs (elsewhere measured	No	4	
<u>Taps, V</u>	Vaste, Traps, etc			
includin	ingle lever basin mixer 110 fine with and g Hansgrohe chrome waste set push-open for nd bidget mixers, cup-shaped trap standard	No	13	
concea Chrome	ohe Logis Chrome Single lever bath mixer for led installation with and including Hansgrohe e Crometta Shower holder set 100 1 jet art with shower hose 125cm, Hansgrohe Exafill			
finish s	et bath filler and Hansgrohe Waste set push- r bathtubs	No	8	
Castian	Carried to Summary			R
Bill No.	IG WORKS			

17	Hansgrohe Vernis Shape 90 deg, 240mm length shower arm - exposed installation to 26 diameter shaft with and including with and including Hansgrohe Logis Chrome single lever shower mixer for concealed installation and basic set for single lever shower mixer for concealed installation.	No	8		
18	Hansgrohe Decor Single lever kitchen mixer 260, 7 I/min, 1 Jet, Chrome finish	No	4		
19	Hansgrohe D14-10 manual waste and overflow set for single bowl.	No	4		
20	Hose bib tap (FBBHN2C3-7FT01). Heavy pattern low resistance type. With 3/4hose union, wingnut and lining for 3/4 hose pipe. 3/4 BSP male iron connection end.	No	8		
	SUNDRIES				
21	50 x 50 x 2mm thick natural anodised angle set aluminium to skirting	m	898		
22	Stainless steel tile-in corner protector 30 x 30 x 10mm brushed finish	m	5		
23	Aluminium angle edges with suitable flexible infill, brass	m	16		
24	External aluminium straight edge as by KIRK Marketing (Code: 686) or similar approved	m	29		
25	M-trim aluminium tile stairnosing to suit tile (Code: ATIN100) or similar approved	m	103		
26	F138 PVC Expansion Joints (12mm tile)	m	89		
	Carried to Summary			R	
	Section No. 2 BUILDING WORKS Bill No. 13 PLUMBING AND DRAINAGE (PROVISIONAL) JMQS				

Section No. 2				
Bill No. 13				
PLUMBING AND DRAINAGE (PROVISIONAL)				
SUMMARY				
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	79			_
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BUILDING WORKS Bill No. 13 PLUMBING AND DRAINAGE (PROVISIONAL)				
JMQS				

ltem No		Quantity	Rate	Amount	
	<u>BILL No. 14</u>				
	GLAZING				
	PREAMBLES				
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	<u>4mm Silvered float glass copper backed mirrors</u> with polished edges fixed with dome-capped chromium plated mirror screws				
1	Mirror 900 x 1800mm high No	13			
					_
	Carried Forward to Summary of Section No. 2		R		
	Section No. 2 BUILDING WORKS Bill No. 14 GLAZING (PROVISIONAL) JMQS				

ltem No		Quantity	Rate	Amount
	BILL No. 15			
	PAINTWORK			
	PREAMBLES			
	For preambles see " Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	SUPPLEMENTARY PREAMBLES			
	DESCRIPTIONS			
	Descriptions of paintwork shall be deemed to include for all cutting in			
	PREPARATORY WORK TO NEW WORK			
	PAINT SPECIFICATIONS			
	All painting shall be done in accordance with "Plascon- Evans" specifications			
	PAINT TO NEW WORK ETC.			
	Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
	Carried to Summary Section No. 2 BUILDING WORKS Bill No. 15 PAINTWORK (PROVISIONAL) JMQS		R	

3 207	
611	
537	
67	
132	
F	

6	Prepare and apply one coat of Plascon Metal Primer (UC 170) to achieve a continuous film (allow 36 hours to dry) and finish with two full coats of Plascon Water based Velvaglo (VLW/TVW) to achieve complete obliteration (allowing 4 hours drying between coats)NB: if white is used, three coats might be necessary to achieve obliteration.Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)WOOD SURFACES WITHPrepare and apply with 1 coat primer, 1 coat universal undercoat and finish with coats: 2 coats superior quality eggshell enamel or similar approved. Colour to Architects Specification or White	m2	15		
7	On doors	m2	169		
8	On door frames	m2	32		
9	On skirtings, rails, etc not exceeding 300 mm girth	m	330		
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	Section No. 2 BUILDING WORKS Bill No. 15 PAINTWORK (PROVISIONAL) JMQS				

Section No. 2				
Bill No. 15				
PAINTWORK (PROVISIONAL)				
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No	

	SUMMARY - BUILDING WORKS	Page No		Amount R c
	FOUNDATIONS (PROVISIONAL)	24		
2	CONCRETEWORK, FORMWORK & REINFORCEMENTS (PROVISIONAL)	29		
5	MASONRY (PROVISIONAL)	36		
	WATERPROOFING (PROVISIONAL)	40		
;	ROOF COVERING (PROVISIONAL)	43		
;	CARPENTRY & JOINERY (PROVISIONAL)	49		
,	CEILING, PARTIONINGS, ETC (PROVISIONAL)	54		
;	IRONMONGERY (PROVISIONAL)	58		
)	STRUCTURAL STEEL	61		
)	METALWORK (PROVISIONAL)	67		
	PLASTERING (PROVISIONAL)	72		
•	TILING (PROVISIONAL)	76		
5	PLUMBING AND DRAINAGE (PROVISIONAL)	80		
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<u>BILL NO. 1</u>		P	
GENERAL SITE WORKS, ETC (PROVISIONAL)			
PREAMBLES			
For preambles see "Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
SUPPLEMENTARY PREAMBLES			
Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 3			
<ul> <li>Earthworks are to be carried out in accordance with</li> <li>SABS 1200D subjected to the following amendments: <ol> <li>the degree of accuracy shall be Degree II</li> <li>the finished level tolerance in sub clause (B3) of</li> <li>SABS 1200D to be amended to read ±25mm</li> </ol> </li> </ul>			
Corried to Summer of		Р	
Carried to Summary Section No. 3 EXTERNAL WORKS		R	
Bill No. 1 BULK EARTHWORKS (PROISIONAL) JMQS			

	<ul> <li>Welded Mesh Medium Security Fence must comply to the following:</li> <li>As per PW371-A Edition 2.0</li> <li>ISO 9001 accreditation</li> <li>SANS 10244-2</li> <li>Min 10 years anti corrosion guarantee</li> <li>Shop drawings for both gates and panels to be submitted to the PA prior to fixing for approval</li> <li>Certificate of compliance for material and installation to be issued by the manufacture and/or engineer</li> </ul>				
	SITE CLEARANCE				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc. Topsoil to be stockpiled off site and a portion retained for backfilling behind kerbs and for grassed areas	m2	1 285		
	<u>Taking out and removing, grubbing up roots and filling in holes</u>				
2	Tree or stump exceeding 500mm and not exceeding 1000mm girth	No	5		
3	Tree or stump exceeding 1000mm and not exceeding 1500mm girth	No	5		
	BULK EARTHWORKS AND PLATFORMS				
	Compaction of surfaces (rip and scarify)				
4	Compaction of ground surface under roads and parking areas including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	1 285		
	Carried to Summary			R	
	Section No. 3 EXTERNAL WORKS Bill No. 1 BULK EARTHWORKS (PROISIONAL) JMQS				

Open face excavation in all materials to form         Datforms/terraces in earth over sloping site         Open face excavation         Extra over excavation for:         Soft rock         Hard rock         Extra over all excavations for carting away         Extra over all excavations for carting away surplus         naterial from excavations and/or from stockpiles on site         o a dumping site to be located by the Contractor	m3 m3 m3	2 956 1 478 1 478		
Extra over excavation for: Soft rock Hard rock Extra over all excavations for carting away Extra over all excavations for carting away surplus naterial from excavations and/or from stockpiles on site	m3	1 478		
Soft rock Hard rock Extra over all excavations for carting away Extra over all excavations for carting away surplus naterial from excavations and/or from stockpiles on site				
Hard rock Extra over all excavations for carting away Extra over all excavations for carting away surplus naterial from excavations and/or from stockpiles on site				
Extra over all excavations for carting away Extra over all excavations for carting away surplus naterial from excavations and/or from stockpiles on site	m3	1 478		
Extra over all excavations for carting away surplus naterial from excavations and/or from stockpiles on site				
naterial from excavations and/or from stockpiles on site				
15	m3	2 956		
Selected filling of G6 material supplied by the contractor compacted in layers of 150mm to 95% MOD AASHTO density				
Over site to form platforms	m3	3 308		
Selected filling of G5 material (CBR>15) supplied by he contractor compacted to 98% MOD AASHTO lensity				
Over site to form platforms	m3	386		
Compaction of surfaces (rip and scarify)				
Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% MOD AASHTO lensity	m2	1 285		
Prescribed density tests on filling				
Iodified AASHTO Density test	No	22		
Carried to Summary			R	
Section No. 3 EXTERNAL WORKS Sill No. 1 BULK EARTHWORKS (PROISIONAL) MQS				
	DD AASHTO density         over site to form platforms         elected filling of G5 material (CBR>15) supplied by he contractor compacted to 98% MOD AASHTO ensity         over site to form platforms         compaction of surfaces (rip and scarify)         compaction of ground surface under floors etc including carifying for a depth of 150mm, breaking down versize material, adding suitable material where ecessary and compacting to 95% MOD AASHTO ensity         rescribed density tests on filling         Modified AASHTO Density test         Carried to Summary         ection No. 3         XTERNAL WORKS         III No. 1         ULK EARTHWORKS (PROISIONAL)	IOD AASHTO density       m3         ever site to form platforms       m3         elected filling of G5 material (CBR>15) supplied by the contractor compacted to 98% MOD AASHTO ensity       m3         over site to form platforms       m3         compaction of surfaces (rip and scarify)       m3         compaction of ground surface under floors etc including carifying for a depth of 150mm, breaking down versize material, adding suitable material where ecessary and compacting to 95% MOD AASHTO ensity       m2         trescribed density tests on filling       m2         Modified AASHTO Density test       No         Carried to Summary         ection No. 3       XTERNAL WORKS ill No. 1         UK EARTHWORKS (PROISIONAL)       MODIAASHTO	IOD AASHTO density       m3       3 308         elected filling of G5 material (CBR>15) supplied by the contractor compacted to 98% MOD AASHTO ensity       m3       386         compaction of surfaces (rip and scarify)       m3       386         compaction of ground surface under floors etc including carifying for a depth of 150mm, breaking down versize material, adding suitable material where ecessary and compacting to 95% MOD AASHTO ensity       m2       1 285         rescribed density tests on filling       m2       1 285         Iddified AASHTO Density test       No       22         Carried to Summary       22         ection No. 3 XTERNAL WORKS III INO. 1       UK EARTHWORKS (PROISIONAL)	IOD AASHTO density       m3       3 308         wer site to form platforms       m3       3 308         elected filling of G5 material (CBR>15) supplied by the contractor compacted to 98% MOD AASHTO ensity       m3       386         wer site to form platforms       m3       386         compaction of surfaces (rip and scarify)       m3       386         compaction of ground surface under floors etc including carifying for a depth of 150mm, breaking down versize material, adding suitable material where eccessary and compacting to 95% MOD AASHTO ensity       m2       1 285         rescribed density tests on filling       m2       1 285         rescribed density tests on filling       m2       22         todified AASHTO Density test       No       22         carried to Summary       R         ection No. 3 XTERNAL WORKS III No. 1       Kention Summary       R

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Bill No. 1				
BULK EARTHWORKS (PROISIONAL)				
SUMMARY				
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	89			·
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EXTERNAL WORKS Bill No. 1				
BULK EARTHWORKS (PROISIONAL) JMQS				

ltem No		Quantity	Rate	Amount	
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	GENERAL SITE WORKS, ETC (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	SUPPLEMENTARY PREAMBLES				
	Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 3 The Contractor is referred to for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described				
	Carried to Summary Section No. 3 EXTERNAL WORKS Bill No. 2 BOUNDARY WALL AND FENCING WORKS (PROVISIONAL) JMQS		R		

<ul> <li>Welded Mesh Medium Security Fence must comply to the following:</li> <li>As per PW371-A Edition 2.0</li> <li>ISO 9001 accreditation</li> <li>SANS 10244-2</li> <li>Min 10 years anti corrosion guarantee</li> <li>Shop drawings for both gates and panels to be submitted to the PA prior to fixing for approval</li> <li>Certificate of compliance for material and installation to be issued by the manufacture and/or engineer</li> </ul>					
BOUNDARY WALL					
Excavation					
Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for					
Trenches	m3	223			
<u>Sundries</u>					
Extra over trench and hole excavations in earth for excavation in					
Extra over excavations in earth for trenches and holes for excavations in soft rock	m3	112			
Extra over excavations in earth for trenches and holes for excavations in hard rock	m3	112			
Extra over all excavations for carting away					
Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor	m3	151			
Risk of collapse of excavations					
Risk of collapse of sides of excavations for trenches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	494			
					_
Carried to Summary			R		
Section No. 3 EXTERNAL WORKS Bill No. 2 BOUNDARY WALL AND FENCING WORKS (PROVISIONAL) JMQS					
	the following:  A s per PW371-A Edition 2.0  Solve a state in earth cortexitation  BOUNDARY WALL  Excavation  Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for  Trenches  Sundries  Extra over trench and hole excavations in earth for excavations in soft rock  Extra over excavations in earth for trenches and holes for excavations in hard rock  Extra over excavations for carting away surplus material from excavations for carting away surplus material from excavations for carting away surplus material from excavations and/or from stockpiles on site to be located by the Contractor  Risk of collapse of excavations for trenches and holes from natural, elevated or reduced ground level to a dumping site to be located by the Contractor  Risk of collapse of excavations for trenches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep  State over and excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor  Risk of collapse of excavations for trenches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep  State over and excavations for carting away surplus material from excavations in soft renches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep	the following:  As per PW371-A Edition 2.0  SANS 10244-2  Min 10 years anti corrosion guarantee Shop drawings for both gates and panels to be submitted to the PA prior to fixing for approval Certificate of compliance for material and installation to be issued by the manufacture and/or engineer  BOUNDARY WALL Excavation Excavate in earth not exceeding 2m deep below matural, elevated or reduced ground level for Trenches m3 Sundries Extra over trench and hole excavations in earth for excavations in soft rock m3 Extra over excavations in earth for trenches and holes for excavations in hard rock m3 Extra over all excavations for carting away Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor m3 Risk of collapse of sides of excavations for trenches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep Carried to Summary Section No. 3 EXTERNAL WORKS BIL No. 2 BOUNDARY WALL AND FENCING WORKS (PROVISIONAL)	the following: As per PW371-A Edition 2.0 ISO 9001 accreditation SANS 10244-2 Min 10 years anti corrosion guarantee Shop drawings for both gates and panels to be submitted to the PA prior to fixing for approval Certificate of compliance for material and installation to be issued by the manufacture and/or engineer BOUNDARY WALL Excavation Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for Trenches m3 223 Sundries Extra over trench and hole excavations in earth for excavation in Extra over trench and hole excavations in earth for excavations in soft rock m3 112 Extra over excavations in earth for trenches and holes for excavations in soft rock m3 112 Extra over all excavations for carting away Extra over all excavations for carting away Extra over all excavations of rock m3 151 Risk of collapse of excavations not exceeding 1,5m deep m40 for m3 243 Carried to Summary Section No. 3 EXTERNAL WORKS BILI NO. 2 BOUNDARY WALL AND FENCING WORKS (PROVISIONAL)	the following:       As per PW371-A Edition 2.0         . ISO 9001 accreditation         . SANS 10244-2         . Min 10 years anti corrosion guarantee         . Shy of drawings for both gates and panels to be submitted to the PA prior to fixing for approval         . Certificate of compliance for material and installation to be issued by the manufacture and/or engineer         BOUNDARY WALL         Excavation         Excavation         Excavation earth not exceeding 2m deep below natural, elevated or reduced ground level for         Trenches       m3         Sundriss         Extra over trench and hole excavations in earth for excavations in earth for trenches and holes for excavations in off rock m3       112         Extra over excavations in earth for trenches and holes for excavations in hard rock       m3       112         Extra over all excavations for carting away surplus material from excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor       m3       151         Risk of collapse of sides of excavations for trenches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep       m2       494         Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor       m3       151         Risk of collapse of sides of excavations for tr	the following:       As per PW371-A Edition 2.0         ISO 9001 accreditation       SANS 10244-2         Min 10 years anti corrosion guarantee       Shop drawings for both gates and panels to be submitted to the PA prior to fixing for approval certificate of compliance for material and installation to be issued by the manufacture and/or engineer         BOUNDARY WALL       Excavation         Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for       Trenches         Trenches       m3       223         Sundries       Extra over trench and hole excavations in earth for excavations in soft rock       m3         Extra over excavations in earth for trenches and holes for excavations in soft rock       m3       112         Extra over excavations in earth for trenches and holes for excavations in hard rock       m3       112         Extra over excavations in carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor       m3       1151         Risk of collapse of sides of excavations for ternches and holes to a dumping site to be located or reduced ground level to not exceeding 1,5m deep       m2       494         Note Xxeeding 1,5m deep       m2       494       material from Xxeeding 1,5m deep       material from Xxeeding 1,5m deep       material for Xxeeding 1,5m de

	Keeping excavations free of water				
6	Allow for keeping excavations free of all water other than subterranean water		Item		
	Filling, etc.				
7	Backfilling from the excavations to trenches and holes compacted to 90% modified AASHTO density	m3	75		
8	Imported earth filling supplied by the Contractor and brought onto site, under floors, steps, pavings, etc. compacted to 95% modified AASHTO density	m3	72		
	Compaction of surfaces				
9	Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	146		
	Prescribed density tests on filling				
10	Tests to determine the degree of compaction, etc. of ground or filling	No	10		
	Protection against termites				
11	To bottoms and sides of trenches, bases, etc	m2	640		
	Reinforced concrete				
	<u>30MPa/20mm concrete</u>				
12	In footings to walls cast against excavated surfaces, stepped and levelled	m3	40		
	Test cubes				
13	Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for <u>(Provisional)</u>	No	4		
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	Section No. 3 EXTERNAL WORKS Bill No. 2 BOUNDARY WALL AND FENCING WORKS (PROVISIONAL) JMQS				

	Reinforcement				
	Steel bar reinforcement to structural concrete work				
14	Various diameter steel reinforcing bars	t	6.16		
	Mesh reinforcement				
15	Mesh reinforcement with mesh reference number 617 laid in walls, slab, etc. with 300mm wide side and end laps (measured net)	m2	130		
	Masonry				
16	Piers	m3	52		
17	One brick wall	m2	555		
18	330mm cavity brick walls comprising two half brick skins with 115mm wide cavity, complete with and including concrete infill, reinforcement, mesh, brickforce and wall ties as per Architect's and Engineer's drawings	m2	92		
	Brick reinforcement				
19	Brick reinforcement 75mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	2 164		
20	Brick reinforcement 150mm wide built into brick walls with sufficient laps at end joints, angles and intersections (measured net)	m	6 527		
	Face bricks				
	External facings in approved Country Classic Satin face bricks (FBS) pointed with square recessed horizontal and vertical joints				
21	Extra over ordinary brickwork for facing and pointing in stretcher bond	m2	1 014		
22	Brick on edge coping	m	168		
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	Section No. 3 EXTERNAL WORKS Bill No. 2 BOUNDARY WALL AND FENCING WORKS (PROVISIONAL) JMQS				

	Movement joints, etc				
23	Movement joint of 10mm impregnated fibre board built in vertically between brickwork	m2	136		
	Subsoil drainage, etc				
24	Subsoil drainage complete with and including excavations, cart away, filling, concrete stones, bidim, 110mm diameter uPVC perforated pipe, 50mm diameter PVC pipe weep holes, along the fill side of retaining wall as per Engineer's drawings	m	80		
	<u>GATES</u>				
	<u>38 x x25mm slatted MS sliding gate with 30mm spacing between slats, 100 x x50 x 2mm MS square tubing, and gate motor</u>				
25	3000 x 2400mm high vehicular gate with motor	No	1		
	Courses to Summer.			R	
	Carried to Summary Section No. 3			ĸ	
	EXTERNAL WORKS Bill No. 2 BOUNDARY WALL AND FENCING WORKS (BROVISIONAL)				
	BOUNDARY WALL AND FENCING WORKS (PROVISIONAL) JMQS				

Bill No. 2       BOUNDARY WALL AND FENCING WORKS (PROVISIONAL)       Image: Comparison of the second	
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Page No     Page No     Amount       Total Brought Forward from Page No.     91	
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Total Brought Forward from Page No.   91	
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BOUNDARY WALL AND FENCING WORKS (PROVISIONAL) JMQS	

ltem No			Quantity	Rate	Amount
	<u>BILL NO. 3</u>				
	PAVING AND WALKWAYS (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	Fully detailed shop drawings of all structural steel, etc., indicating sizes, bracing, loading, etc., shall be submitted to the Representative/Agent for approval prior to fabrication				
	PAVING				
	Bulk excavation in earth not exceeding 2m deep				
1	To reduce levels under paving	m3	338		
	Extra over all excavations for carting away				
2	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	338		
	Rip and compact in situ materials to 95% MOD AASHTO density				
3	Under paving etc.	m3	119		
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	EXTERNAL WORKS Bill No. 3 PAVING, WALKWAYS AND CARPORTS (PROVISIONAL) JMQS				

Earth filling supplied by the contractor compacted				
to 95% Mod. AASHTO density (Selected layer natural gravel, G7)				
Under paving etc.	m3	119		
Earth filling supplied by the contractor compacted to 97% Mod. AASHTO density (Subbase C4 material)				
Under paving etc.	m3	119		
Sand bedding under paving				
20mm thick dry, clean, washed riversand layer evenly spread over filling (elsewhere measured), levelled, watered and rammed to receive waterproof membrane (elsewhere measured) under solid floors	m2	792		
Compaction of surfaces				
Compaction of ground surface under floors etc including scarifying for a depth of 200mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2	792		
Prescribed density tests on filling				
"Modified AASHTO Density" test	No	11		
Approved soil sterilant type weedkiller applied strictly according to label specifications				
Under paving etc	m2	792		
One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
Under paving	m2	792		
Precast concrete block walkways				
Paving is to be laid in accordance with SABS 1200 MJ, SABS 1058 and the Concrete Masonry Association's specifications				
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Section No. 3 EXTERNAL WORKS Bill No. 3 PAVING, WALKWAYS AND CARPORTS (PROVISIONAL) JMQS				

	Paving is to be laid to herringbone pattern on and including 20mm (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere)				
	Clean sand is to be swept into joints between roadstones				
	60mm Coloured "Concor Bondbrick" interlocking paving blocks (25Mpa)				
11	Paving to walkways, etc to falls	m2	792		
12	Fair circular cutting	m	7		
13	Kerbs fig. 3 with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint including excavations, backfilling etc	m	221		
	SABS 731-1987 yellow or white roadmark paint on paving at a rate of 1 litre/m2				
14	Line 100mm wide	m	83		
15	Numeral or letter 1250mm high (GM7)	No	12		
16	Traffic arrow 1250 x 500mm wide extreme (G M4.1)	No	8		
	CARPOTS WITH ROOF SHEETING TO SLIGHT FALLS				
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	Carpots comprising the following: concrete foundations for columns to be 20Mpa concrete, 500 x 500 x 600mm deep including all excavations, backfilling, compaction, carting away, etc; columns 76 x 76 x 3mm hot rolled tubing with 150 x 150 x 3mm base plates and 200 x 70 x 6mm top flanges: columns 2600mm minimum height, beams; 76 x 76 x3mm hot rolled tubing with closed ends; beams bolted to columns with two 10 x 100mm bolts and nuts at each column; purlins; 150 x 75 x 20 x3mm hot rolled lipped channels bolted to cleats on beams with 0.5mm thick chromadek finished IBRprofile roof sheeting; all steelwork cleaned with degreaser and painted with one each of red oxide and universal primer with two coats enamel paint				
17	Range of carpots (one row) comprising four bays, each bay 2,5 x 5,0m on plan, with carpot structure stepped over sloping site if required, including cutting of existing paving blocks around columns	No	2		
	Carried to Summary	y		R	
	Section No. 3 EXTERNAL WORKS Bill No. 3 PAVING, WALKWAYS AND CARPORTS (PROVISIONAL) JMQS				

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	Quantity	Rate	Amoun
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TANKS AND PUMPS (PROVISIONAL)			
PREAMBLES			
For preambles see "Specification of materials and methods to be used - PW 371" as published by the National Department of Public Works			
Fully detailed shop drawings of all structural steel, etc., indicating sizes, bracing, loading, etc., shall be submitted to the Representative/Agent for approval prior to fabrication			
Filling (General)			
Back filling described as:			
- <b>"filling in pipe trenches, etc."</b> , all backfilling shall be done with approved backfilling compacted to 93%Mod. AASHTO density, unless otherwise described			
uPVC pipes and fittings			
Soil, waste and vent pipes and fittings shall be solvent weld jointed			
uPVC pressure pipes and fittings			
Pipes for water supply shall be of the class stated			
Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings			
Pipes of 50mm diameter and greater shall have sockets and spigots with push in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints			
Carried to Summary		R	
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#### Fixing of pipes

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

#### **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

#### Exposed concrete surfaces

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

#### **Excavations**

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

"Soft rock" and "hard rock" shall be as defined in "Earthworks"

#### Laying, backfilling, bedding, etc. of pipes

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

#### **Carried to Summary**

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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: SANS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding Holes for pipes Holes for pipes, cutting and fitting around pipes, the making good thereof, etc. in brick and/or concrete sidewalls of catch pits, manholes, valve chambers, etc. shall be deemed to be included in descriptions of pipework Tendered rates must make provision for this as no additional claims in this regard will afterwards be entertained Mixing of concrete No hand mixing of concrete will be allowed on site Structural steel Descriptions of bolts shall be deemed to include nuts and washers Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete All structural steel to be painted with one coat red oxide metal primer before delivery to site **Carried to Summary** Section No. 3 **EXTERNAL WORKS** Bill No. 4 TANKS AND PUMPS (PROVISIONAL) JMQS

	BOREHOLE & TREATMENT PLANT					
1	Drilling and equipping of borehole with and including water purification/treatment plant		Item		600 000.	00
	TANKS, STANDS AND PUMPS					
	Tank Plinth					
	Excavation					
	Excavate in earth not exceeding 2m deep below natural, elevated or reduced ground level for					
2	Trenches	m3	6			
	<u>Sundries</u>					
	Extra over trench and hole excavations in earth for excavation in					
3	Extra over excavations in earth for trenches and holes for excavations in soft rock	m3	1			
4	Extra over excavations in earth for trenches and holes for excavations in hard rock	m3	1			
	Extra over all excavations for carting away					
5	Extra over all excavations for carting away surplus material from excavations and/or from stockpiles on site to a dumping site to be located by the Contractor	m3	6			
	Risk of collapse of excavations					
6	Risk of collapse of sides of excavations for trenches and holes from natural, elevated or reduced ground level to not exceeding 1,5m deep	m2	7			
	Keeping excavations free of water					
7	Allow for keeping excavations free of all water other than subterranean water		ltem			
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Filling, etc.				
Backfilling from the excavations to trenches and holes compacted to 90% modified AASHTO density	m3	6		
Compaction of surfaces				
Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	12		
Prescribed density tests on filling				
Tests to determine the degree of compaction, etc. of ground or filling	No	1		
Protection against termites				
To bottoms and sides of trenches, bases, etc	m2	19		
Reinforced concrete				
30MPa/20mm concrete				
In footings to walls cast against excavated surfaces, stepped and levelled	m3	12		
<u>Test cubes</u>				
Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for <u>(Provisional)</u>	No	1		
Reinforcement				
Steel bar reinforcement to structural concrete work				
8mm - 16mm Diameter bars	t	2.40		
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Section No. 3 EXTERNAL WORKS Bill No. 4 TANKS AND PUMPS (PROVISIONAL) JMQS				
	Backfilling from the excavations to trenches and holes compacted to 90% modified AASHTO density Compaction of surfaces Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density Prescribed density tests on filling Tests to determine the degree of compaction, etc. of ground or filling Protection against termites To bottoms and sides of trenches, bases, etc Reinforced concrete 30MPa/20mm concrete In footings to walls cast against excavated surfaces, stepped and levelled Test cubes Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for (Provisional) Reinforcement Steel bar reinforcement to structural concrete work 8mm - 16mm Diameter bars Carried to Summary Section No. 3 EXTERNAL WORKS Bill No. 4 TANKS AND PUMPS (PROVISIONAL)	Backfilling from the excavations to trenches and holes compacted to 90% modified AASHTO density       m3         Compaction of surfaces       Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density       m2         Prescribed density tests on filling       m2         Prescribed density tests on filling       No         Protection against termites       no         To bottoms and sides of trenches, bases, etc       m2         Reinforced concrete       30MPa/20mm concrete         In footings to walls cast against excavated surfaces, stepped and levelled       m3         Test cubes       m3         Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for (Provisional)       No         Reinforcement       Steel bar reinforcement to structural concrete work       8mm - 16mm Diameter bars       t         Section No. 3       EXTERNAL WORKS       Bill No. 4       TANKS AND PUMPS (PROVISIONAL)       Tanks AND PUMPS (PROVISIONAL)	Backfilling from the excavations to trenches and holes compacted to 90% modified AASHTO density       m3       6         Compaction of surfaces       Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density       m2       12         Prescribed density tests on filling       m2       12         Prescribed density tests on filling       m2       12         Prescribed density tests on filling       m3       6         Tests to determine the degree of compaction, etc. of ground or filling       No       1         Protection against termites       m3       12         To bottoms and sides of trenches, bases, etc       m2       19         Reinforced concrete       30MPa/20mm concrete       m3       12         In footings to walls cast against excavated surfaces, stepped and levelled       m3       12         Test cubes       Prepare set of three 150 x 150 x 150 mm concrete strength test cubes, label and send to an approved laboratory for testing, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for (Provisional)       No       1         Reinforcement       Steel bar reinforcement to structural concrete work       8mm - 16mm Diameter bars       t       2.40         Carried to Summary       Section No. 3 <td< td=""><td>Backfilling from the excevations to trenches and holes compacted to 90% modified AASHTO density       m3       6         Compaction of surfaces       Compaction of surfaces       1         Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density       m2       12         Prescribed density tests on filling       m2       12         Prescribed density tests on filling       m3       6         Tests to determine the degree of compaction, etc. of ground or filling       No       1         Protection against termites       1       19         Reinforced concrete       30MPa/20mm concrete       19         In footings to walls cast against excavated surfaces, stepped and levelled       m3       12         Test cubes       Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory freeting, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for (Provisional)       No       1         Reinforcement       Steel bar reinforcement to structural concrete work       8mm - 16mm Diameter bars       t       2.40         Section No. 3       EXTERNAL WORKS Bill No. 4       TANKS AND PUMPS (PROVISIONAL)       R</td></td<>	Backfilling from the excevations to trenches and holes compacted to 90% modified AASHTO density       m3       6         Compaction of surfaces       Compaction of surfaces       1         Compaction of ground surface under trenches, holes etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density       m2       12         Prescribed density tests on filling       m2       12         Prescribed density tests on filling       m3       6         Tests to determine the degree of compaction, etc. of ground or filling       No       1         Protection against termites       1       19         Reinforced concrete       30MPa/20mm concrete       19         In footings to walls cast against excavated surfaces, stepped and levelled       m3       12         Test cubes       Prepare set of three 150 x 150 x 150mm concrete strength test cubes, label and send to an approved laboratory freeting, pay all charges and submit report to the Representative/Agent. Only successful tests will be paid for (Provisional)       No       1         Reinforcement       Steel bar reinforcement to structural concrete work       8mm - 16mm Diameter bars       t       2.40         Section No. 3       EXTERNAL WORKS Bill No. 4       TANKS AND PUMPS (PROVISIONAL)       R

Fencing	m	16		
Single gate 1,5m wide	No	1		
Pumps				
Two CR3-10 pumps with 2.2kW motors connected in barallel (one pump on standby) mounted on a common base with pump able to deliver a flow of 0.5l/s at three fire hose reels (total 1.5l/s) at a maximum pressure of 300kPa, installed complete with pressure gauge, control banel, electrical installation, 50mm flanged connections, etc Elevated tanks and stands	No	1		
Supply and installation of 10 000 "Jojo or similar				
approved" water tank complete including all excavations, concrete bases, plinths and slabs, 9m elevated steel olatform, pipework, fittings, valves, connections, sterilization of tank, etc, all as per Engineer and Architect's drawings	No	4		
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Section No. 3 EXTERNAL WORKS Bill No. 4 FANKS AND PUMPS (PROVISIONAL) IMQS				

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TANKS AND PUMPS (PROVISIONAL)		
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2	BOUNDARY WALL AND FENCING WORKS (PROVISIONAL)	96		
3	PAVING, WALKWAYS AND CARPORTS (PROVISIONAL)	101		
4	TANKS AND PUMPS (PROVISIONAL)	108		
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ltem No		Quantity	Rate	Amount
	BILL No. 1			
	ELECTRICAL INSTALLATION (PROVISIONAL)			
	PREAMBLES			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	Electrical low voltage installations & wiring shall comply with 10142			
	SUPPLEMENTARY PREAMBLES			
	Tenderers are advised to study the document, specifications of materials and method to be used - "PW371" as published by the National Department of Public Works before pricing this Bill.			
	Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 4			
	The Contractor is referred to supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described			
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	Section No. 4 ELECTRICAL ENGINEERING WORKS Bill No. 1 ELECTRICAL WORKS (PROVISIONAL) JMQS			

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#### Specification and drawings

Tenderers are referred to the Electrical Specification and drawings annexed to these bills of quantities for full descriptions of the project specification, materials to be used, etc

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:

Site establishment and de-establishment - including but not limited to latrines, water, generators, fuel, all safety aspects, site office, etc.

Providing site information to the Engineer upon request, marking up of drawing during construction and compiling of As-built drawings

Electrical Certificate of Compliance (COC) for the entire installation

Coding and Labelling of all plant and equipment, including cables and distribution boards

#### **CABLING**

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

#### **Carried to Summary**

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	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				
	2.5mm <sup>2</sup> general purpose wire, as indicated on the schematic diagrams for light circuits (Red, Black & Insulated Earth)				
1	- Supply	m	2 500		
2	- Install	m	2 500		
	<u>4 mm<sup>2</sup> general purpose wire, as indicated on the schematic diagrams for power outlets , plugs, brick lights, and mechanical units(Red, Black &amp; Insulated Earth)</u>				
3	- Supply	m	7 000		
4	- Install	m	7 000		
	<u>6mm<sup>2</sup> general purpose wire, as indicated on the schematic diagrams for the stoves (Red, Black &amp; Insulated Earth)</u>				
5	- Supply	m	400		
6	- Install	m	400		
	<u>4 mm<sup>2</sup> 1-phase 3-core Cu PVC SWA single phase</u> <u>cable compatible with SANS 1507-3 for exterior</u> <u>lights parking lights and to refuse area, including</u> junction boxes, cable termination and connections				
7	- Supply	m	150		
8	- Install	m	150		
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	NS 1507-3 from Main DB to Hybrid Inverter in h house unit, including cable termination and				
	nections				
- 5	Supply	m	10		
- 1	nstall	m	10		
SAN	nm <sup>2</sup> 1-phase 3-core SWA cable compatible with NS 1507-3 from Main Kiosk to Guardhouse DB.G, uding cable termination and connections				
- 5	Supply	m	20		
- 1	nstall	m	20		
SAN hou	nm <sup>2</sup> 1-phase 3-core SWA cable compatible with NS 1507-3 from Main Kiosk to Main DB in each se unit , including cable termination and nections				
- 5	Supply	m	170		
- 1	nstall	m	170		
SAN	nm <sup>2</sup> 3-phase 4-core SWA cable compatible with NS 1507-3 from Eskom Connection to Main sk, including cable termination and connections				
- 5	Supply	m	20		
- 1	nstall	m	20		
Con	nm <sup>2</sup> bare copper earth wire from Eskom mection to Main Kiosk including cable nination and connections				
- 5	Supply	m	20		
- 1	nstall	m	20		
TRE	ENCHING, SLEEVES				
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	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.				
	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.				
19	- Supply	No	4		
20	- Install	No	4		
	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 1m wide x 1m wide x 800mm deep				
21	- Supply	No	5		
22	- Install	No	5		
	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				
23	- Supply	No	1		
24	- Install	No	1		
25	Excavation for Power Cable and Data Sleeves (500mm wide x 700mm deep) in earth for cable trenches, backfilling of trenches with 150mm of soft sifted bedding material	m3	60		
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	Section No. 4 ELECTRICAL ENGINEERING WORKS Bill No. 1 ELECTRICAL WORKS (PROVISIONAL) JMQS				

26 27	32mmØ HDPE 550kPA sleeves between data DB manholes 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 - Supply - Install 50mmØ HDPE sleeves for DB entries chased into wall and buried underground, including manufacturer approved couplings, sealing rings,	m m	200 200		
	<u>end plugs and non-hardening sealant for each unit</u> <u>DB from manhole</u>				
28	- Supply	m	300		
29	- Install	m	300		
	ELECTRICAL KIOSKS				
	All kiosks shall be provided as per the specification document				
	Shop drawings are required for approval by the engineer prior to manufacture of the kiosk. If requested, The Contractor shall arrange for an inspection of the kiosk by the electrical engineer on the manufacturer's premises before delivery.				
	All kiosks shall be mounted on a concrete plinth as per the specification document				
	Main Kiosk in accordance with the specification document and schematic diagram				
30	- Supply	No	1		
31	- Install	No	1		
	CONDUIT				
	All conductor tubes and fittings shall comply with the requirements of the SANS 1162.				
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	<u>The type of conduit and accessories shall be of the non-metallic type where chased into the wall but metallic type Bosal for within the roof space</u>				
	For lighting circuits and socket outlets, the conduit used shall have an external diameter of 20mm				
	For data points, the conduit used shall have an external diameter of 25mm				
	M20 PVC conduit complete with hangers, anchors, nuts and bolts, bends, tees, elbows, junction boxes, clamps, fittings and end caps, chased 50mm wide x 40mm deep and make good - to be chased into wall and installed in floor				
32	- Supply	m	3 000		
33	- Install	m	3 000		
	M20 PVC conduit round boxes with lid and screws (1-way, 2-way, 3-way, 4-way, back and side entry as required)				
34	- Supply	No	200		
35	- Install	No	200		
	<u>M25 PVC conduit complete with hangers, anchors,</u> nuts and bolts, bends, tees, elbows, junction boxes, clamps, fittings and end caps for wiring in the the roof space				
36	- Supply	m	2 000		
37	- Install	m	2 000		
	<u>M25 PVC conduit round boxes with lid and screws</u> (1-way, 2-way, 3-way, 4-way, back and side entry as required)				
38	- Supply	No	20		
39	- Install	No	20		
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	<u>1.6mm galvanised Draw Wire in all conduit and sleeves, including data sleeves and data conduit</u>				
40	- Supply	m	5 500		
41	- Install	m	5 500		
	DATA INSTALLATION				
	<u>32mm sleeves for data cables are covered in and</u> Section 6 of this bill.				
	<u>Conduit is required to be run with a draw wire to each telephone/data point terminating in a round conduit box.</u>				
	300mmx300mm Flush mounted Data/Telephone distribution board with metal tray, architrave frame and hinged doors and shall be flush mounted - 20mm thick soft wooded panel (fine grade pine to SANS 1359)				
42	- Supply	No	5		
43	- Install	No	5		
44	Allow for provisional amount of R181 818,180for application and connection fee for new internet fibre connection with approved service provider		Item		181 818.18
45	Add for profit			%	
46	Add for general attendance			%	
	LIGHTING & SWITCHES				
	LIGHT FITTINGS				
	All cover plates must be secured with two sunken- chromed vandal proof screws.				
	<u>Where not specfied below, lamps to have a lifespan</u> of at least 10,000h				
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Recessed/surface mounted 1,2-meter two (2) lar fluorescent luminaire complete with Prismatic diffuser, 2 x T8 LED tubular fluorescent, cool wh lamp, electronic control gear and telescopic lam holders as specified in the SANS 1119.	nite		
-Supply	No	12	
-Install	No	12	
Wall/Ceiling mounted round bulkhead luminaire complete with 20-Watt LED lamps. Similar or eq and approved to "Beka Series 30".			
- Supply	No	24	
- Install	No	24	
Wall mounted rectangular bulkhead luminaire complete with eyelid, opal lens and 20-Watt LED lamp. Similar or equal and approved to "Beka S 40".			
- Supply	No	4	
- Install	No	4	
50mm x 180mm x 55mm 8W LED brick light, IP rating of 55 and above, similar or approved to "FUMAGALLI NINA190 BRICK LIGHT BLACK"			
- Supply	No	32	
- Install	No	32	
Wall/Ceiling mounted round bulkhead luminaire complete with 20W. Similar or equal and approv to "Beka Series 300".			
-Supply	No	21	
- Install	No	21	
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complet	ounted rectangular bulkhead luminaire te with 24W complete with opal acrylic . Similar or equal and approved to "Rege	<u>nt</u>		
-Supply		No	4	
-Install		No	4	
aluminu	ounted LM 6 die cast aluminum and extruction, 2 x 17W LED. Similar or equal and ed to "Regent CUBICA DOUBLE"	<u>led</u>		
- Supp	ly	No	8	
- Insta	II	No	8	
12W LE	mounted round downlight complete with D. Similar pr approved to "Regent Luxon Pro Backlight 160"			
-Supply		No	38	
-Install		No	38	
Polycar	00mm Ø LED Suspended light with bonate diffuser, aluminum housing and coated finish. Similar or approved to t Sky"			
-Supply		No	4	
-Install		No	4	
	Design Pendant Light LED Globe Circle M Dated Island Lights Bulb Base: E27, E26	<u>etal</u>		
-Supply		No	12	
-Install		No	12	
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	Black Or White Fitting: H132mm x W56mm x D127mm Reading Wall Light with ON/OFF Switch on the base complete with 1 x GU10, Max 10 Watt. similar or approved to "GU10 Spazio"			
67	-Supply	No	7	
68	-Install	No	7	
	<u>Wall mounted rectangular bulkhead luminaire</u> <u>complete with eyelid, opal lens and 20 Watt LED</u> <u>lamp. Similar or equal and approved to "Beka</u> <u>Series 40</u>			
69	- Supply	No	17	
70	- Install	No	17	
	20W LED Floodlight, IP65			
71	- Supply	No	2	
72	- Install	No	2	
	Fire resistant braai area light 7W-10W LED light fitting, Marine grade high-pressure die-cast aluminium, IP 66. Suitable for fire exposure. Similar or approved to "Beka LEDNOVA-MINI"			
73	- Supply	No	4	
74	- Install	No	4	
	Surface/Recessed mounted Rectangular 1200mm x 300mm LED panel luminaire, similar or equal and approved to "Regent Luxon Rectangular 1200 x 600/ 50 Watt LED Panel".			
75	- Supply	No	9	
76	- Install	No	9	
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	LED, 201 Stainless Steel Bathroom Mirror Light or <u>Picture Light with PC Diffuser, IP20, Color: Black –</u> <u>9W LED (Included) Color Temp: 4000K Lumen: 540.</u> <u>Similar or approved to "Brightstar WB272 BLACK"</u>				
,	- Supply	No	8		
3	- Install	No	8		
	7,2m Linear LED strip light fitting flush or recessed in the concrete as indicated in the drawing. Similar or approved to "Regent micro linear 33"				
)	- Supply	No	3		
	- Install	No	3		
	LIGHT SWITCHES				
	<u>Crabtree Classic light switch 100x50mm complete</u> with coverplate and 100x50mm galvanised wall box (flush mount)				
	1-lever - 1 way - Supply	No	46		
2	- Install	No	46		
	<u>Crabtree Classic light switch 100x50mm complete</u> with coverplate and 100x50mm galvanised wall box (flush mount)				
	<u>1-lever, 2-way</u>				
3	-Supply	No	12		
+	-Install	No	12		
	<u>Crabtree Classic light switch 100x50mm complete</u> with coverplate and 100x50mm galvanised wall box (flush mount)				
	2-lever, 1-way				
5	-Supply	No	17		
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86	-Install	No	17		
	<u>Crabtree Classic light switch 100x50mm complete</u> with coverplate and 100x50mm galvanised wall box (flush mount)				
	<u>2-lever, 2-way</u>				
87	-Supply	No	8		
88	-Install	No	8		
	Photoelectic Day/Night Sensors with Enclosure				
89	-Supply	No	3		
90	-Install	No	3		
	SMALL POWER & POWER SKIRTING				
	Provide Crabtree Classic socket outlet and isolators, <u>100x100mm complete with coverplate and</u> <u>100x100mm galvanised wall box (flush mount). All</u> <u>socket outlets are required to have one three pin</u> <u>conventional plug and one RSA Euro/Diamond plug</u>				
	<u>Cover plates for socket outlets shall be of rust free</u> <u>metal, at least 1,2 mm thick. Paint finish shall be</u> <u>oven-baked enamel. The colour is as specified by</u> <u>the Architect or as reflected on the drawing</u>				
	Single socket outlet 100mm x 100mm with diamond socket & new RSA Euro plug Flush mounted				
91	- Supply	No	32		
92	- Install	No	32		
	<u>Double socket outlet 100mm x 100mm flush</u> <u>mounted</u>				
93	- Supply	No	44		
94	- Install	No	44		
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	Single socket outlet 100mm x 100mm with diamond socket, new RSA Euro and 2 USB charging points plug Flush mounted				
95	- Supply	No	34		
96	- Install	No	34		
	<u>Single socket outlet 100mm x 100mm with diamond</u> socket & new RSA Euro plug Flush mounted in a water tight box				
97	- Supply	No	5		
98	- Install	No	5		
	<u>100x100x50mm wall boxes SABS approved</u> galvanised pressed steel for building flush into brickwork or cast into concrete work - for socket outlets				
99	- Supply	No	115		
100	- Install	No	115		
	<u>100x50x50mm wall boxes SABS approved</u> galvanised pressed steel for building flush into brickwork or cast into concrete work - for light <u>switches</u>				
101	- Supply	No	79		
102	- Install	No	79		
	Unswitched 5A Socket outlets (for lights)				
103	- Supply	No	181		
104	- Install	No	181		
	30A 2 Pole Isolator- for aircon and extraction fans				
105	- Supply	No	20		
106	- Install	No	20		
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mount (Guard house)       107     - Supply       108     - Install       50A 2 Pole Isolator - for stove flush mounted       109     - Supply       110     - Install	No No No	2 2	
50A 2 Pole Isolator - for stove flush mounted         109       - Supply	No	2	
109 - Supply			
10 - Install		4	
	No	4	
DATA & SATELITE TV OUTLET			
Supply and Install Data outlet on wall box at 400mm AFFL or as indicated on drawings			
11 - Supply	m	23	
12 - Install	m	23	
Supply and Install Satilite TV outlet on wall box at 1200mm AFFL or as indicated on drawings			
13 - Supply	No	16	
4 - Install	No	16	
POWER SKIRTING			
Supply and Install N8/P801 Steel 2 Compartment Power Skirting, Easter Oak, with End Caps, Slices and Accessories			
5 - Supply	m	15	
6 - Install	m	15	
Supply and Install Power Skirting Socket Outlet and Covers, Normal white			
7 - Supply	No	3	
18 - Install	No	3	
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	Supply and Install Power Skirting Socket Outlet and Covers, Euro on power skirting				
119	- Supply	No	3		
120	- Install	No	3		
	Supply and Install Power Skirting Socket Outlet and Covers, Dedicated Red				
121	- Supply	No	3		
122	- Install	No	3		
	Supply and Install Power Skirting RJ45 Data Outlet with Cover				
123	- Supply	No	3		
124	- Install	No	3		
	DISTRIBUTION BOARDS				
	Supply and install Distribution Boards in accordance with SANS10142				
	Distribution baords to comply to the requirements in the specification documents and on the schematics				
	Shop drawings are required to be approved prior to manufacture				
	DB.001 According to the specification and Schematics				
125	- Supply	No	1		
126	- Install	No	1		
	DB.002 According to the specification and Schematics				
127	- Supply	No	1		
128	- Install	No	1		
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	DB.003 According to the specification and Schematics				
129	-Supply	No	1		
130	- Install	No	1		
	DB.004 According to the specification and Schematics				
131	Supply	No	1		
132	Install	No	1		
	DB.G According to the specification and Schematics				
133	- Supply	No	1		
134	- Install	No	1		
135	3-Phase meter installed inside the Kiosk	No	1		
	LIGHTNING PROTECTION AND EARTHING				
	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.				
	8m x 50mm <sup>2</sup> solid round aluminuim down conductor bonded to the roof sheeting, gutters, etc. and terminating in a flush mount test point enclosure				
136	- Supply	No	10		
137	- Install	No	10		
	<u>Test point enclosure with bi metallic connector,</u> <u>flush mounted to outside of structure</u>				
138	- Supply	No	10		
139	- Install	No	10		
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	<u>3m x 50mm<sup>2</sup> stranded insulated copper conductor</u> from lightning protection test point to earth spike, using appropriate connectors				
140	- Supply	No	10		
141	- Install	No	10		
	<u>1.5m copper clad steel SABS approved earth rods</u> with clamp driven 1.35m away from the building				
142	- Supply	No	10		
143	- Install	No	10		
144	All additional components required to bond and to complete the lightning protection installation to achieve the required resistance values		Item		
145	Lightning Resistivity Testing post installation of earth electrodes and certification of lightning protection system by external specialist		Item		
146	Type B earth electrode - 50mm <sup>2</sup> stranded bare copper conductor trenched and installed 0.5m below ground level, connected to each earth spike with an appropriate connectors		Item		11 363.63
147	Add for profit			%	
148	Add for general attendance			%	
149	Bonding using 4mm <sup>2</sup> copper straps to all equipment such as water heaters etc. as per SANS10142-1	m	1		
	POWER SUPPLY				
150	Application and payment of necessary fees to the Electrical supply authority including transformer, metering kiosk and necessary cabling infrastructure required for a 32kVA supply		Item		340 909.09
151	Add for profit			%	
152	Add for general attendance			%	
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	SOLAR SOLUTION				
	<u>The solar system must be installed by a qualified</u> <u>electrician in possession of a solar Green card. The</u> <u>final installation must be certified by a professional</u> <u>engineer.</u>				
	SOLAR PANELS				
	8kW Hybrid solar inverter. NRS approved. SUNSYNK, SOLIS or other approved brand with all necessary interface modules and connections for masters & slaves , electrical cables and data communication unit,router with Ethernet connection, connectable in parallel and modularly extendable. The Inverter must include the following concepts such as (Ac and DC coupling, High efficiency, intelligent battery management for maximum battery life, charge level calculation, extreme overload capability, and battery temperature sensing and battery current measurements) - For each Unit				
153	- Supply	No	4		
154	- Install	No	4		
	3,6kW Hybrid solar inverter. NRS approved. SUNSYNK, SOLIS or other approved brand with all necessary interface modules and connections for masters & slaves , electrical cables and data communication unit,router with Ethernet connection, connectable in parallel and modularly extendable. The Inverter must include the following concepts such as (Ac and DC coupling, High efficiency, intelligent battery management for maximum battery life, charge level calculation, extreme overload capability, and battery temperature sensing and battery current measurements) - For Guard House				
155	- Supply	No	1		
156	- Install	No	1		
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	420W Tier 1 Canadian Solar/JA Solar Panels. The Solar Modules will have output cables of 4mm <sup>2</sup> and have leads of of 1m in length for both anode and cathode. Similar or approved brands are acceptable at the engineers discretion				
157	- Supply	No	68		
158	- Install	No	68		
	Supply and Install Aluminuim Mounting Structure suitable to the dimension of selected PV modules and PV numbers, the mounting provides a fixed inclination of the modules, plates and screws. The mounting structures must be installed structurally to be suitable to withstand all static loads (weight of modules, wind loads etc) that might occur according to the Site conditions. The mounting structure components are bonded together to guaranty potential equalization including all associated accessories for the type of roof that will be installed rated per Solar Panel				
159	- Supply	No	68		
160	- Install	No	68		
	<u>4mm<sup>2</sup> single core 1000V Cu solar cable - red and black complete with cable jointing accessories</u>				
161	- Supply	m	150		
162	- Install	m	150		
	4mm <sup>2</sup> Insulated Cu\ earth cable				
163	- Supply	No	150		
164	- Install	m	150		
	SOLAR BATTERIES				
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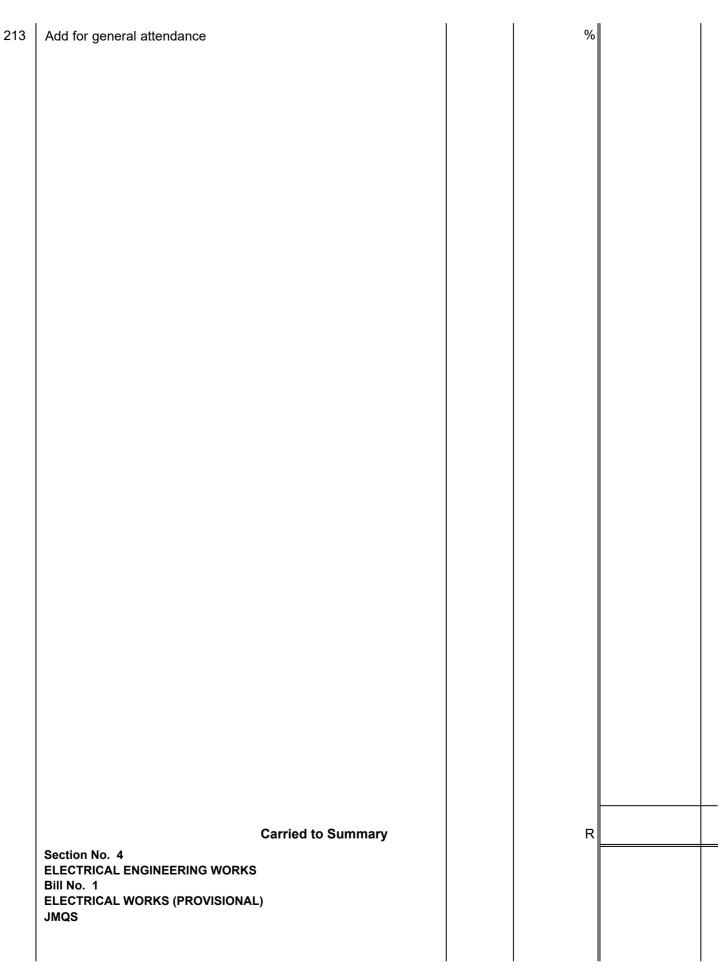
	<u>10kW Lithium Ion "Freedom Won" Batteries or</u> <u>similar or approved brand are acceptable at the</u> <u>engineers descretion. The batteries must provide</u> <u>high-quality and achieving superior performance,</u> <u>the manufacturing date must be new and suitable</u> <u>for every type of applications especially for solar</u> <u>renewable energy, designed Service Life 10 years</u> <u>with low internal resistance, designed to be deeply</u> <u>discharged. The Battery should provide benefits of</u> <u>being maintenance free, case flame retardant &amp; non- hazardous. The price Includes supply, install</u> <u>&amp;connect Battery temp. sensor (BTS).The contractor</u> <u>must submit manufacturer warranty for batteries for</u> <u>a period 10 years For each Unit</u>				
165	- Supply	No	8		
166	- Install	No	8		
	5kW Lithium Ion "Freedom Won" Batteries or similar or approved brand are acceptable at the engineers descretion. The batteries must provide high-quality and achieving superior performance, the manufacturing date must be new and suitable for every type of applications especially for solar renewable energy, designed Service Life 10 years with low internal resistance, designed to be deeply discharged. The Battery should provide benefits of being maintenance free, case flame retardant & non- hazardous. The price Includes supply, install &connect Battery temp. sensor (BTS).The contractor must submit manufacturer warranty for batteries for a period 10 years For Guard house				
167	- Supply	No	1		
168	- Install	No	1		
	DC Inline Fuse & MC4 connectors per string (positive & negative)				
169	- Supply	No	18		
170	- Install	No	18		
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	Combiner boxes with Class I Surge Arrestors and DC Switch Disconnectors complete with 2 x DC disconnects 1000V and 2 x fuse disconnectors with 15A fuses				
171	- Supply	No	5		
172	- Install	No	5		
	15A DC isolators				
173	- Supply	m	9		
174	- Install	No	9		
	80A AC isolators				
175	- Supply	No	10		
176	- Install	No	10		
	60A break/make by-pass change over switch to switch back-up load to grid supply in the event of INVERTER failure				
177	- Supply	No	5		
178	- Install	No	5		
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	Earthing System for Battery Bank				
	Supply, install, connect and operate complete				
	independent earthing system for Battery Banks				
	system, must be separated of the main earthing				
	system to obtain 2 ohm max resistance. the item includes (2 copper electrodes 15mm2 driven into				
	ground, manholes with iron cover, earth joints,				
	clamps, ducts , conduits and 50 mm2 flexible				
	earthing copper wires and cables from the Negative				
	bus bar in the battery fuse box to the electrode to				
	complete the system as specifications and engineer				
	instruction's and approval. The earthing should be done for each battery bank installed in each house				
	unit				
179	- Supply	No	5		
100		NI-	_		
180	- Install	No	5		
	Forthing System for DV System				
	Earthing System for PV System Supply,install,connect and operate complete				
	independent earthing system for PV solar system,				
	must be separated of the main earthing system to				
	obtain 2 ohm max resistance. the item includes (2				
	copper electrodes 15mm <sup>2</sup> driven into ground,				
	manholes with iron cover, earth joints, clamps,				
	ducts , conduits and 25 mm <sup>2</sup> flexible earthing copper wires and cables from the PV system				
	components to the electrode to complete the				
	system as specifications and engineer instruction's				
	and approval.				
181	- Supply	No	10		
101	- Supply				
182	- Install	No	10		
	Supply and Install P2000 Trunking complete with				
	accessories				
183	- Supply	m	100		
105	- Supply		100		
184	- Install	m	100		
101	noun		100		
185	Supply and Install ECO RUBBER waterproofing for PV				
	system and associated equipment		Item		
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	Supply and Install Onesto DIN slim indication lights in each house unit DB board				
186	- Supply	No	8		
187	- Install	No	8		
	Supply and Install signage indicating dual electrical supply for DB in each house unit				
188	- Supply	No	4		
189	- Install	No	4		
	200A double pole isolator (fused) for battery disconnetion				
190	- Supply	No	4		
191	- Install	No	4		
	100A double pole isolator (fused) for battery disconnetion				
192	- Supply	No	1		
193	- Install	No	4		
194	Certification of Solar Solution for each house unit and guard house	No	5		
	ELECTRIC FENCE				
195	Provision of a supply and installation of Electrical fence around the boundary wall, including energiser, cabling, earthing, signage, protecting devices and certification		ltem		150 000.00
196	Add for profit			%	
197	Add for general attendance			%	
	CCTV SYSTEM				
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	12 Channel NVR	Ì			
198	- Supply	No	1		
199	- Install	No	1		
	Infra Red 4MB avigilon bullet camera				
200	- Supply	No	9		
201	- Install	No	9		
	1TB Hard drive				
202	- Supply	No	1		
203	- Install	No	1		
	<u>42´´ Plasma Screeen</u>				
204	- Supply	No	1		
205	- Install	No	1		
	Cat 6 cable				
206	- Supply	m	200		
207	- Install	m	200		
208	Installing and Commissioning		Item		
209	Provide manuals and technical literature for the system and its components		Item		
210	Any additional items required for the successful completion of the above			SUM	
	ALARM SYSTEM				
211	Provision of a supply and installation of alarm system.		Item		90 909.09
212	Add for profit			%	
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		Ĩ		
HVAC (PROVISIONAL)				
PREAMBLES				
For preambles see "Specification of materials and methods to be used - PW 371"				
Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
SUPPLEMENTARY PREAMBLES				
Tenderers to issue workshop drawings and builders work drawings				
<ul> <li>Tenderers to make allowance for:</li> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul>				
HVAC				
10,0kW Under Ceiling Cassette Split Unit	No	4		
9.52mmmm Diameter Refrigerant Piping	m	45		
15.88mm Diameter Refrigerant Piping	m	45		
Individual Control - Controller	No	4		
22mm Condensate Pipe	m	30		
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Section No. 5 MECHANICAL ENGINEERING WORKS Bill No. 1 HVAC JMQS			ĸ	
	For preambles see "Specification of materials and methods to be used - PW 371" Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to. Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to. SUPPLEMENTARY PREAMBLES Tenderers to issue workshop drawings and builders work drawings Tenderers to make allowance for:	For preambles see "Specification of materials and methods to be used - PW 371"         Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.         Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.         SUPPLEMENTARY PREAMBLES         Tenderers to issue workshop drawings and builders work drawings         Tenderers to make allowance for: <ul> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul> HVAC         10,0kW Under Ceiling Cassette Split Unit       No         9.52mmm Diameter Refrigerant Piping       m         Individual Control - Controller       No         22mm Condensate Pipe       m         MetcHANICAL ENGINEERING WORKS       Bill No. 1	For preambles see "Specification of materials and methods to be used - PW 371"         Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.         Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.         SUPPLEMENTARY PREAMBLES         Tenderers to issue workshop drawings and builders work drawings         Tenderers to make allowance for: <ul> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul> HVAC           10,0kW Under Ceiling Cassette Split Unit         No           9.52mmm Diameter Refrigerant Piping         m           15.88mm Diameter Refrigerant Piping         m           10.dividual Control - Controller         No           4         22mm Condensate Pipe         m           Xection No. 5         MECHANICAL ENGINEERING WORKS           Bill No. 1         HVAC	For preambles see "Specification of materials and methods to be used - PW 371"         Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.         Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.         SUPPLEMENTARY PREAMBLES         Tenderers to issue workshop drawings and builders work drawings         Tenderers to make allowance for: <ul> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul> HVAC         10,0kW Under Ceiling Cassette Split Unit       No         9.52mmmn Diameter Refrigerant Piping       m         15.88mm Diameter Refrigerant Piping       m         Individual Control - Controller       No         22mm Condensate Pipe       m         30       Carried to Summary         R       Section No. 5         MECHANICAL ENGINEERING WORKS Bill No. 1

6	Wall Mounted Extractor Fan				
	Supply, delivery, installation of 27l/s Wall Mounted Extractor Fan complete with sleeve, and electrical wiring N	o 4			
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	WET SERVICES (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	SUPPLEMENTARY PREAMBLES				
	Tenderers to issue workshop drawings and builders work drawings				
	<ul> <li>Tenderers to make allowance for:</li> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul>				
	WET SERVICES				
1	Cold & Hot water pipes Cold Water reticulation 35mm polypropylene pipe for reticulation network	m	180		
2	35mm 90 deg elbow	No	15		
3	35mm x 35mm x 35mm Tee	No	4		
4	22mm polypropylene pipe for reticulation network	m	400		
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5	22mm 90 deg elbow	No	34		
6	22mm x 22 mm x 22 mm Tee	No	32		
7	22mm x 22 mm x 15 mm Tee	No	68		
8	15mm polypropylene pipe for reticulation network	m	45		
9	15mm 90 deg elbow	No	12		
10	15mm x 15mm x 15mm Tee	No			
11	35mm - 22mm Reducer	No	8		
12	22mm - 15mm Reducer	No	16		
13	35mm Lockable Isolating Valves	No	8		
14	22mm Lockable Isolating Valves	No	34		
15	15mm Lockable Isolating Valves	No	48		
	Hot Water reticulation including insulation and cladding				
16	Pipe Brackets, Supports and Hanger (for both supply and return hot water)		ltem		
17	Pipework insulation for a 22mm diameter pipe (25mm thick glass fibre or mineral wool), complete with cladding as specified	m	172		
18	Pipework insulation for a 15mm diameter pipe (25mm thick glass fibre or mineral wool), complete with cladding as specified	m	25		
	Domestic Water Booster Pump				
19	Domestic Water Pump (50l/s @ 300kPa), complete with non-return valve	No	4		
20	Testing Precommissioning Tests, Pressure Tests, including all statutory tests		Item		
	Carried to Summary			R	
	Section No. 5 MECHANICAL ENGINEERING WORKS Bill No. 2 WET SERVICES JMQS				

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Bill No. 2				
WET SERVICES				
SUMMARY				
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MECHANICAL ENGINEERING WORKS Bill No. 2				
WET SERVICES JMQS				

ltem No			Quantity	Rate	Amount
	BILL NO. 3				
	DRAINAGE				
	uPVC Pipes and fittings with butt welded joints, electro weld sockets and bracketing, all as necessary, as per uPVC - Pipes and fittings for Sanitary Drainage Installations and in accordance with the details, specifications and recommendations for uPVC Applications.				
1	110mm uPVC Pipe	m	150		
2	110mm - 75mm Reducer	No	4		
3	110mm - 50mm Reducer	No	28		
4	110 mm 90° Elbow	No	6		
5	110 mm Equal Tee	No	3		
6	110mm x 75mm x 110mm Tee	No	4		
7	110mm x 50mm x 110mm Tee Access Pipe with Round Screwed Cover	No	8		
8	110 mm Equal Tee Acess Pipe With Round Screwed Cover	No	12		
9	110 mm (90°) Access pipe with round screwed cover	No	8		
10	75mm Upvc Pipe	m	44		
11	50 mm uPVC Pipe	m	105		
12	50 mm 45° Elbow	No			
13	50 mm 90° Elbow With Round Screw Cover	No	18		
14	50mm Equal Tee	No			
15	50 mm Equal Tee Acces Pipe With Round Screw Cover	No	44		
	Carried to Summary			R	
	Section No. 5 MECHANICAL ENGINEERING WORKS Bill No. 3 DRAINAGE JMQS				
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16	110mm Lockable Isolating Valves	No	12	
17	75mm Lockable Isolating Valves	No	4	
18	50mm Lockable isolating Valves	No	12	
19	Supply, delivery, installation and commissioning of gully trap complete excluding building work (Gully Base by Main contractor)	No	8	
20	Supply, delivery, installation and commissioning of 110mm Vent Valve	m	12	
21	Supply, delivery, installation and commissioning of 50mm P-trap on airconditioning drainage pipes	m	4	
	DRAINAGE (PROVISIONAL)			
	PREAMBLES			
	For preambles see "Specification of materials and methods to be used - PW 371"			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	SUPPLEMENTARY PREAMBLES			
	Tenderers to issue workshop drawings and builders work drawings			
	<ul> <li>Tenderers to make allowance for:</li> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul>			
	Carried to Summary Section No. 5			R
	MECHANICAL ENGINEERING WORKS Bill No. 3 DRAINAGE JMQS			

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DRAINAGE			
SUMMARY			
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MECHANICAL ENGINEERING WORKS Bill No. 3			
DRAINAGE JMQS			

em Io			Quantity	Rate	Amount
	<u>BILL NO. 4</u>				
	FIRE WATER SYSTEM (PROVISIONAL)				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	SUPPLEMENTARY PREAMBLES				
	Tenderers to issue workshop drawings and builders work drawings				
	<ul> <li>Tenderers to make allowance for:</li> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul>				
	FIRE WATER SYSTEM				
	Fire Water Pipes Fire Water Reticulation				
1	75mm class 16 pvc for reticulation network	m	35		
2	75mm 90 deg elbow	No	1		
3	75mm - 32mm Reducer	No	2		
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4	75mm x 75mm x 75mm Tee	No	2		
5	32mm class 16 pvc for reticulation network	m	15		
6	32mm 90 deg elbow	No	3		
7	32mm - 25mm Reducer	No	2		
8	25 mm carbon steel pipe for reticulation network	m	4		
9	25mm 90 deg elbow, SANS 509	No	4		
10	75mm Lockable Isolating Valves	No	1		
11	32mm Lockable Isolating Valves	No	3		
12	25mm Lockable Isolating Valves	No	2		
13	Fire hose reel complete with 45m rubber hose, chromium plated stopcock, shut-off nozzle and wall bracket bolted to wall with and including expansion bolts	No	2		
14	4,5kg DCP dry powder portable fire extinguisher	No	8		
15	Fire Equipment Signage		Item		
16	Testing Supply, delivery, installation, commissioning and testing of fire appliances	No	1		
	Carried to Summary Section No. 5 MECHANICAL ENGINEERING WORKS Bill No. 4 FIRE WATER AND EQUIPMENT JMQS			R	

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FIRE WATER AND EQUIPMENT			
SUMMARY			
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MECHANICAL ENGINEERING WORKS Bill No. 4			
FIRE WATER AND EQUIPMENT JMQS			

ltem No		C	uantity	Rate	Amount
	BILL NO. 5				
	LP GAS RETICULATION & EQUIPMENT				
	PREAMBLES				
	For preambles see "Specification of materials and methods to be used - PW 371"				
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.				
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.				
	SUPPLEMENTARY PREAMBLES				
	Tenderers to issue workshop drawings and builders work drawings				
	<ul> <li>Tenderers to make allowance for:</li> <li>drawings in electronic format</li> <li>Operation and maintenance manuals</li> <li>One year written guarantee and maintenance for 12 months.</li> <li>Training of client's staff</li> <li>Painting and marking</li> </ul>				
	LP GAS RETICULATION & EQUIPMENT				
	Supply, delivery, installation, commissioning and testing of gas				
1	Gas Gyser 20I Gas Geyser, 430mm x 730mm x180mm in size which can heats 10I/min (600I/hr)of cold water. Gas consuption of 3,1kg/hr and a net weight of 3,2kg	No	4		
2	530mm x 830mm Flame Retardant Insulation Board	No	4		
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	Section No. 5 MECHANICAL ENGINEERING WORKS Bill No. 5 LP GAS RETICULATION AND EQUIPMENT JMQS				

3	Gas Stove Free Standing Gas Cooker 900 x 600 x 900mm high, with five wok burners and oven complete with extractor hood	No	4		
4	Gas Cylinders 19 kg Gas cylinder	No	8		
5	Switch Over Regulator	No	4		
6	Safety Valves	No	8		
7	LP Gas Reticulation as per SABS 460 Class 2 Pipe 22mm Copper Pipe for reticulation network	m	24		
8	22mm 90 deg elbow	No	20		
9	22mm x 22mm x 22mm Tee	No	4		
10	Testing & Commissioning Precommissioning Tests, Pressure Tests, including all statutory tests		ltem		
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	Carried to Summary Section No. 5	,		R	<u> </u>
	MECHANICAL ENGINEERING WORKS Bill No. 5 LP GAS RETICULATION AND EQUIPMENT JMQS				

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LP GAS RETICULATION AND EQUIPMENT			
<u>SUMMARY</u>			
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LP GAS RETICULATION AND EQUIPMENT			

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ltem No		Quantity	Rate	Amount
	<u>BILL NO. 1</u>			
	PROVISIONAL SUMS			
	PREAMBLES			
	For preambles see " Specification of materials and methods to be used - PW 371"			
	Relevant parts of the SANS10400 Series of Standards and application of the National Building Regulations form part of the specification and shall be strictly adhered to.			
	Relevant parts of the SANS2001 Series of Standards form part of the specification and shall be strictly adhered to.			
	SUPPLEMENTARY PREAMBLES			
	Cash discount			
	No cash discount. All provisional sums are "NET"			
	Fuel, power and water for commissioning plant			
	The cost of water, power and fuel for the commissioning of plant shall be borne by the Selected or Nominated Sub-contractor appointed for the relevant selected or nominated sub-contract works in terms of the conditions under which they have/are contracted for the specialist work involved			
	Community Liaison Officer (CLO)			
	The CLO's duties will include EPWP reporting on a monthly basis			
	The Contractor must issue copies of CLO's payslips tpo the PA and IDT on a monthly basis			
	Carried to Summary		R	
	Section No. 6 PROVISIONAL SUM Bill No. 1 PROVISIONAL SUMS JMQS			
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nd, if specifically so described, rvices to each relevant Specialist, the Clauses set out in the			
ominated and/or selected sub- Il be deemed to cover all the ırred in providing free of charge to			
adjustment of "Attendance" and			
plant, etc., including the			
Officer			
	Item		150 000.00
ve if required		%	
		%	
Carried to Summary		R	
	het and do not include builder's cor may allow next to "Profit" might consider necessary In the Contractor to render all do, if specifically so described, rvices to each relevant Specialist, the Clauses set out in the Clauses set out in the section of the ominated and/or selected sub- libe deemed to cover all the tred in providing free of charge to Selected Sub-contractors, the as set out in the clauses in the section in all trades and cleaning down of rubbish on completion low next to "Attendance" items for costs he might consider necessary adjustment of "Attendance" and respectively over the supply and installation of lant, etc., including the f, where applicable <b>Officer</b> f R150,000.00 (One hundred and r community liaison officer we if required	ctor may allow next to "Profit" might consider necessary In the Contractor to render all d, if specifically so described, rvices to each relevant Specialist, the Clauses set out in the " which follows each of the ominated and/or selected sub- ll be deemed to cover all the irred in providing free of charge to Selected Sub-contractors, the as set out in the clauses in the " section in all trades and cleaning down of rubbish on completion llow next to "Attendance" items for sosts he might consider necessary ses in the "Preliminaries" section adjustment of "Attendance" and respectively over the supply and installation of blant, etc., including the f, where applicable <b>Officer</b> Item ve if required	ctor may allow next to "Profit" might consider necessary In the Contractor to render all id, if specifically so described, rvices to each relevant Specialist, the Clauses set out in the "which follows each of the ominated and/or selected sub- libe deemed to cover all the urred in providing free of charge to Selected Sub-contractors, the as set out in the clauses in the "section in all trades and cleaning down of rubbish on completion llow next to "Attendance" items for sosts he might consider necessary ses in the "Preliminaries" section adjustment of "Attendance" and respectively over the supply and installation of plant, etc., including the f, where applicable Officer is R150,000.00 (One hundred and r community liaison officer ve if required %

	Loose Furniture & Appliances			
4	Provide the amount of R1 800,000.00 (One million eight hundred thousand rand) for loose furniture and appliances	Item		1 800 000.00
5	Allow for profit on above if required		%	
6	Allow for attendance		%	
	<u>Appliances</u>			
7	Provide the amount of R370,000.00 (Three hundred and seventy thousand rand) for appliances	Item		370 000.00
8	Allow for profit on above if required		%	
9	Allow for attendance		%	
	Curtains & Blinds			
10	Provide the amount of R230,000.00 (Two hundred and thirty thousand rand) for blinds and curtains	Item		230 000.00
11	Allow for profit on above if required		%	
12	Allow for attendance		%	
	Built-In Cupboards and Worktops			
13	Provide the amount of R1 200,000.00 (One million two hundred thousand rand) for joinery and fittings	Item		1 200 000.00
14	Allow for profit on above if required		%	
15	Allow for attendance		%	
	Sanitary plumbing			
16	Provide the amount of R30,000.00 (Thirty thousand rand) for sanitary plumbing	Item		30 000.00
17	Allow for profit on above if required		%	
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18	Allow for attendance		%	
	Sanitary fittings			
19	Provide the amount of R50,000.00 (Fifty thousand rand) for sanitary fittings	ltem		50 000.00
20	Allow for profit on above if required		%	
21	Allow for attendance		%	
	Sewer, water and fire reticulation works			
22	Provide the amount of R200,000.00 (Two hundred thousand rand) for sewer reticulation works	Item		200 000.00
23	Allow for profit on above if required		%	
24	Allow for attendance		%	
	Root barriers			
25	Provide the amount of R50,000.00 (Fifty thousand rand) for root barriers	Item		50 000.00
26	Allow for profit on above if required		%	
27	Allow for attendance		%	
	Drainage layer			
28	Provide the amount of R50,000.00 (Fifty thousand rand) for drainage layer	Item		50 000.00
29	Allow for profit on above if required		%	
30	Allow for attendance		%	
	Landscaping			
31	Provide the amount of R70,000.00 (Seventy thousand rand) for landscaping layer	Item		70 000.00
32	Allow for profit on above if required		%	
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	PROVISIONAL SUM Bill No. 1			
	PROVISIONAL SUMS JMQS			

33	Allow for attendance		%	
	Contingency sum			
34	Allow the amount of R1 200,000 (One million two hundred thousand rand) for Contingencies for building work, to be used as directed by the Principal Agent and deducted in whole or in part if not required	ltem		1 200 000.00
	Carried to Summary		R	
	Section No. 6 PROVISIONAL SUM Bill No. 1 PROVISIONAL SUMS JMQS			

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PROVISIONAL SUMS		
SUMMARY		
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4	ELECTRICAL ENGINEERING WORKS	137		
5	MECHANICAL ENGINEERING WORKS	153		
6	PROVISIONAL SUM	159		
	Sub-Total		R	
	ADD: Value-Added Tax @ 15%		R	
	Sub-Total		R	
	Total Carried to Tender Form		R	
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