

		Unit	Quantity	Rate	Amount
<u>PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC.</u>					
<u>"PARROT" or equally approved:</u>					
43	Magnetic whiteboard, approximate size 1200 x 1000mm code: BD0948, as per architectural drawing AR-T-404-06 (N15)	No	14		
	A&B 4 D 10				
44	Grey felt bulletin board, approximate size 1200 x 1000mm code: BD0448T, as per architectural drawing AR-T-404-06 (N16)	No	2		
	A&B 2				
45	Non-magnetic combination whiteboard/grey felt pin board, approximate size 1200 x 900mm code: BD3041L, as per architectural drawing AR-T-404-06 (N17)	No	17		
	A&B 17				
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Bill No. 10 Ironmongery					

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SECTION NO. 2
BILL NO. 10
IRONMONGERY
COLLECTION

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Bill No. 10
Ironmongery

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Unit Quantity Rate Amount

SECTION NO. 2

BILL NO. 11

STRUCTURAL STEELWORK

(CPAP WORK GROUP NO. 134 UNLESS OTHERWISE STATED)

<u>Key:</u>	<u>Location Description:</u>
Un/A	Unallocated
Item	Item Location
A&B	A&B: Main & Cleaners
C	C: Power & Water Mgt
D	D1&D2: Residences
E	E: Refuse Room

The bidder is referred to the relevant clauses in the ASAQS General Preambles for Trades (2017 Edition), to the Architectural and Structural/Civil Engineering specifications documents, to the drawings (which are to be read in conjunction with the architectural specification), and to all general and project-specific specifications as contained in the complete Bid Documents. Bidders are thus urged to study these documents as rates will be deemed to be inclusive of all requirements as included in same. Further, should any discrepancy be noted between these Bills of Quantities and the Specifications, the Specifications shall take precedence.

Further to the above, Bidders are to note that the latest edition of SANS 10400, current at the time of the tender will form part of the specifications to this contract and as such, pricing shall be deemed to include for complete conformance in all respects to the requirements of SANS 10400.

SUPPLEMENTARY PREAMBLES

Working at Heights:

Bidders are to note that the work to be undertaken will require all necessary scaffolding, due to the heights of the structures to be constructed/altered. Bidders are to therefore price accordingly as rates will be deemed to include for same and no further claims in regard to all necessary scaffolding in the completion of the scope of works will be entertained.

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Structural Steelwork

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Unit Quantity Rate Amount

Labour Intensive (LI)

Bidders are to note well that specific items within these Bills of Quantities have been designated as LABOUR INTENSIVE by the addition of the words "Labour Intensive" at the end of the description for the said item. Where items have been designated as being LABOUR INTENSIVE as described, pricing shall be deemed to include for the carrying out to completion of said item on site by means and methods that rely predominantly on manual labour. As such, no claims shall be entertained regarding any additional time or monetary costs incurred by the use of LABOUR INTENSIVE methods. Further, the Contractor is to note that contravention of the above i.e. use of mechanised, or other systems to carry out LABOUR INTENSIVE work as hereinafter designated, will be viewed and dealt with in an extremely serious light by the Client, as it remains a national imperative to develop, employ and provide skills.

Drawings:

Tenderers are to note that where descriptions include references to drawings which form part of the tender documentation, notwithstanding anything contained in the description, tenderers are to price these items in accordance with the drawings. Further, the onus is on the tenderer to ensure that all relevant drawings referenced in the Bills of Quantities are included in the tender documents. No further time or monetary claims resulting from failure to comply with any of the above will be entertained.

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers

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

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

Structural Steelwork:

All work to be in accordance with SANS 1200H

All welds to be minimum 6mm continuous fillet welds.

All steelwork to be grade S355JR (unless otherwise stated).

All purlins to be commercial grade purlins.

All bolts to be grade 8.8 bolts.

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		Unit	Quantity	Rate	Amount
All commercial quality HD bolts and steelwork to have a minimum grade stress of 250MPa. All steelwork to be hot dipped galvanised to ISO 1461 or EN 10240, unless otherwise stated. Galvanising certificate for all steelwork is to be issued to the Engineer upon completion of galvanising. Two sets of fabrication drawings are to be provided to the Engineer for approval prior to commencement of fabrication. Certificates confirming the grade stress of all steelwork and bolts specified is to be submitted to the Engineer on completion. <u>Hot dipped galvanising:</u> The mass of hot dip galvanised steelwork has been calculated on the mass before galvanising for which allowance must be made in the pricing. Unless otherwise stated, all steelwork described as galvanised shall be deemed to include for 'hot-dip' galvanising in accordance with the latest SANS standards. Where possible all welds to galvanised steelwork shall be completed before galvanising. <u>HOT DIPPED GALVANISED STEEL COLUMNS AND BEAMS</u> <u>Hot-dipped galvanised square hollow section posts</u>					
1	120mm x 120mm x 4mm Square hollow section post A&B 1.65	Tonnes	1.65		
<u>Hot dipped galvanised welded beams in single lengths with flat bearer and connection plates, bolted to concrete</u>					
2	203 x 140 x 20kg/m T-Beam in lengths not exceeding 13m A&B 1.41	Tonnes	1.41		
<u>HOT DIPPED GALVANISED FIXING DETAILS (PROVISIONAL)</u>					
3	Manufacture, supply and erect on site all structural steel fixing components according to Engineer's specifications A&B 1	Tonnes	1.00		
<u>Hot-dipped galvanised baseplates, Endplates, etc</u>					
4	320 x 320 x 12mm Thick base plate with 4 x 18mm diameter holes A&B 4	No	4		
Carried to Collection				R	
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		Unit	Quantity	Rate	Amount
5	320 x 320 x 12mm Thick top plate with 4 x 18mm diameter holes A&B 4 <u>HOT DIPPED GALVANISED BOLTS, FASTENERS, ETC</u> <u>Hot dipped galvanised bolts and fasteners</u>	No	4		
6	M16 HD Bolts 260mm long A&B 32	No	32		
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SECTION NO. 2

BILL NO. 11

STRUCTURAL STEELWORK

COLLECTION

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Structural Steelwork

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Unit Quantity Rate Amount

SECTION NO. 2

BILL NO. 12

METALWORK

(CPAP WORK GROUP NO. 136 UNLESS OTHERWISE STATED)

<u>Key:</u>	<u>Location Description:</u>
Un/A	Unallocated
Item	Item Location
A&B	A&B: Main & Cleaners
C	C: Power & Water Mgt
D	D1&D2: Residences
E	E: Refuse Room

The bidder is referred to the relevant clauses in the ASAQs General Preambles for Trades (2017 Edition), to the Architectural and Structural/Civil Engineering specifications documents, to the drawings (which are to be read in conjunction with the architectural specification), and to all general and project-specific specifications as contained in the complete Bid Documents. Bidders are thus urged to study these documents as rates will be deemed to be inclusive of all requirements as included in same. Further, should any discrepancy be noted between these Bills of Quantities and the Specifications, the Specifications shall take precedence.

Further to the above, Bidders are to note that the latest edition of SANS 10400, current at the time of the tender will form part of the specifications to this contract and as such, pricing shall be deemed to include for complete conformance in all respects to the requirements of SANS 10400.

SUPPLEMENTARY PREAMBLES

Working at Heights:

Bidders are to note that the work to be undertaken will require all necessary scaffolding, due to the heights of the structures to be constructed/alterd. Bidders are to therefore price accordingly as rates will be deemed to include for same and no further claims in regard to all necessary scaffolding in the completion of the scope of works will be entertained.

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Metalwork

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	Unit	Quantity	Rate	Amount
<u>Labour Intensive (LI)</u>				
Bidders are to note well that specific items within these Bills of Quantities have been designated as LABOUR INTENSIVE by the addition of the words "Labour Intensive" at the end of the description for the said item. Where items have been designated as being LABOUR INTENSIVE as described, pricing shall be deemed to include for the carrying out to completion of said item on site by means and methods that rely predominantly on manual labour. As such, no claims shall be entertained regarding any additional time or monetary costs incurred by the use of LABOUR INTENSIVE methods. Further, the Contractor is to note that contravention of the above i.e. use of mechanised, or other systems to carry out LABOUR INTENSIVE work as hereinafter designated, will be viewed and dealt with in an extremely serious light by the Client, as it remains a national imperative to develop, employ and provide skills.				
<u>Descriptions of bolts, anchors, etc.</u>				
Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete Items described as 'holed for bolt(s)' shall be deemed to exclude the bolts unless otherwise described Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres				
<u>Rates shall include for the following:</u>				
Suitably protecting all exposed aluminium and glass surfaces with an approved protection tape and plastic sheeting. Such protection is to be removed at completion of the contract and the exposed surfaces cleaned down and left perfect. Under no circumstances will any damage whatsoever to the finished product be accepted. Building in and fixing into preformed openings. Window opening sizes to be verified on site before windows can be manufactured. Complete ironmongery to all aluminium doors and windows Complete glazing as described with and including matching aluminium glazing beads and gaskets and glazed in accordance with the manufacturer's written instructions. All opening and fixed lights, coupling mullions and transoms, fittings, ironmongery, etc. As required.				
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Bill No. 12				
Metalwork				

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	Unit	Quantity	Rate	Amount
<u>Powdercoated aluminium windows, doors, etc.:</u> Bidders are to note that prices for aluminium doors and windows are to include for all necessary ironmongery for the complete installation as required. No further claims in this regard will be entertained. Bidders are advised to refer to the architects window and door schedules, as these will take precedence and rates will be deemed to be based in the schedules should there be any discrepancy Items shall be manufactured by an approved specialist who shall provide a sample upon request, for approval by the Principal Agent, at no additional cost to the contract. Powdercoating to doors, windows, gates, etc. shall comply with minimum class 2, manufactured and installed in accordance with good building practice and in terms of the latest code of practice with revisions as recommended by the SANS and AAAMSA. All powdercoating shall be to SANS 1796:2013 (Class 2) – "Interpon D2525 T" or equally approved, colour Matt Bronze 543 (Code QX201P), and shall be supplied with a 25 year project warranty. Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless otherwise described, be used for screwing items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium. Items fixed to adjoining metalwork with rivets, self-tapping screws, set screws, machine screws, etc. shall include for all necessary drilling. <u>Welded joints and intersections:</u> Prices of continuous hollow section and solid section shall include for welded joints in the length and prices of intersections shall include for all cutting, mitering, scribing, shaping, welding, bends, knees, ramps, etc. Prices of balustrades, burglar guards and the like shall include for framed and welded joints and intersections. <u>Hot dipped galvanising:</u> The mass of hot dip galvanised steelwork has been calculated on the mass before galvanising and no allowance has been made for the additional mass of galvanising for which allowance must be made in pricing. Unless otherwise stated, all steelwork described as galvanised shall be deemed to include for 'hot-dip' galvanising in accordance with the latest SANS standards.				
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Metalwork				

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Unit Quantity Rate Amount

Anodising:

All anodising shall be executed in strict accordance with SANS 999. Grade AA25 (Average coating thickness 25 micron) shall be used. Colour to be agreed with Architect.

Screws and bolts:

Screws and bolts shall be of corresponding metal and colour and heads of screws shall be countersunk. Self-tapping screws shall, unless otherwise described, be used for screwing items to adjoining metalwork. Stainless steel screws shall be used for fixing aluminium. Items fixed to adjoining metalwork with rivets, self-tapping screws, set screws, machine screws, etc., shall include for all necessary drilling.

Where bolting is specified, projecting shank ends of bolts shall be cut flush and left smooth.

Drawings:

Bidders are to note that where descriptions include reference to drawings, notwithstanding anything contained in the descriptions, tenderers are to price these items in accordance with the drawings. Further, the onus is on the tenderer to ensure that all relevant drawings referenced in the Bills of Quantities are included in the tender documents. No additional time and/or monetary claims resulting from non-adherence to the above will be entertained.

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	Unit	Quantity	Rate	Amount
<u>Certification</u>				
<u>All aluminium work to be compliant with fabricator's AAAMSA Performance Test Certificate, SAGGA Glass & Glazing Certificate, AAAMSA Surface Finishing Certificate, SAFIERA Energy Rating Certification, are all required. Fabricator/Installer to be registered in appropriate AAAMSA category for window/ door type. Rates to include all certifications and no further claims will be considered.</u>				
<u>SPECIALIST TYPE HOT-DIP GALVANISED CELL DOORS, GATES, WINDOWS, ETC.</u>				
Note: The following specialist type cell doors, gates, windows etc. contain references to Architectural drawings appended elsewhere in this Bid document. The Bidder is to study these drawings carefully as all items required for the complete and approved supply and installation of the aforementioned items as per the drawings such as but not limited to hinges, flanges, additional welds, angle irons, sheet metal, lugs, bolts, mortar filling, mild steel rods, poprivetting, etc., will be deemed to be included in the tendered rate for same. No further claims in this regard will be entertained.				
<u>Specialist type hot-dip galvanised cell windows and screens</u>				
<u>Windows:</u>				
1 Purpose made cell window, size approximately 850mm wide x 950mm high (WT15-POL 2012/W1/2/3). (LI) A&B 2	No	2		
<u>Screens:</u>				
2 Purpose made internally fixed screen size 793 x 893mm high overall (POL 2012/W1/2/3) A&B 2	No	2		
3 Purpose made externally fixed screen size 920 x 1000mm high overall (POL 2012/W1/2/3). A&B 2	No	2		
<u>Gates:</u>				
4 Specialist type hot-dip galvanised cell gate size approximately 1 208 x 2 020mm high, all work according to Departmental Specification PW 371 in Architectural door schedules and Five Star Drawings POL 2012/D1a/D2/D3/D4/D5 appended elsewhere in this tender document. A&B 2	No	2		
Carried to Collection			R	
Bill No. 12 Metalwork				211 R-r.

	Unit	Quantity	Rate	Amount
5 Specialist type hot-dip galvanised cell gate and grille combination size approximately 1 208 x 2 020mm high, all work according to Departmental Specification PW 371 in Architectural door schedules and Five Star Drawings POL 2012/D1a/D2/D3/D4/D5 appended elsewhere in this tender document.	No	2		
A&B 2 <u>POWDER COATED ALUMINIUM WINDOWS, DOORS, ETC. (CPAP WORK GROUP NO.140)</u> Note: The following aluminium windows, doors, shopfronts, etc. contain references to Architectural drawings appended elsewhere in this Bid document. The bidder is to study these drawings carefully as all items required for the complete and approved supply and installation of the aforementioned items as per the drawings, will be deemed to be included in the bid rate for same. No further claims in this regard will be entertained. <u>Class 2 powder coated aluminium windows to SANS 10322:2014 mutual safe glazed with 38mm G2 rated bullet resistant glazing, O.e.a. Pay window PW II including 135mm deep transfer tray including speech post to sides, per manufacturers specification to suite operation indicated</u>				
6 Purpose made window, size approximately 600mm wide x 950mm high, all work according to Architects drawing AR-T-402-01 (WT01). (LI)	No	1		
A&B 1 <u>Class 2 powder coated aluminium window to SANS 10322:2014 Crealco Swift 34 or equally approved fixed aluminium casement window glazing throughout to be 6.38mm thick normal strength PVB laminated clear safety glass, per layout. Fixing lugs suitable for fixing to plastered brickwork reveals. AAAMSA exposure category: A2, per manufacturers specification to suite operation indicated</u>				
7 Purpose made window, size approximately 800mm wide x 1 065mm high, all work according to Architects drawing AR-T-402-02 (WT02). (LI)	No	1		
A&B 1				
8 Purpose made window, size approximately 900mm wide x 1 260mm high, all work according to Architects drawing AR-T-402-03 (WT03). (LI)	No	1		
A&B 1				
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		Unit	Quantity	Rate	Amount
9	Purpose made window, size approximately 900mm wide x 1 110mm high, all work according to Architects drawing AR-T-402-04 (WT04). (LI)	No	1		
	A&B 1				
10	Purpose made window, size approximately 1 960mm wide x 1 110mm high, all work according to Architects drawing AR-T-402-05 (WT05). (LI)	No	1		
	A&B 1				
	<u>Class 2 powder coated aluminium window to SANS 10322:2014 Crealco Swift 34 or equally approved fixed aluminium casement window glazing throughout to be 6.38mm thick normal strength PVB laminated clear safety glass, per layout. Fixing lugs suitable for fixing to plastered brickwork reveals. AAAMSA exposure category: A2, per manufacturers specification to suite operation indicated.</u>				
11	Purpose made window, size approximately 2 400mm wide x 600mm high, all work according to Architects drawing AR-T-402-06-A (WT06). (LI)	No	2		
	A&B 2				
12	Purpose made window, size approximately 1 200mm wide x 1 000mm high, all work according to Architects drawing AR-T-402-07-A (WT07). (LI)	No	7		
	A&B 7				
13	Purpose made window, size approximately 1 200mm wide x 800mm high, all work according to Architects drawing AR-T-402-08-A (WT08). (LI)	No	6		
	A&B 6				
14	Purpose made window, size approximately 800mm wide x 800mm high, all work according to Architects drawing AR-T-402-09-A (WT09). (LI)	No	2		
	A&B 2				
15	Purpose made window, size approximately 800mm wide x 1 350mm high, all work according to Architects drawing AR-T-402-10-A (WT10). (LI)	No	3		
	A&B 3				
16	Purpose made window, size approximately 600mm wide x 600mm high, all work according to Architects drawing AR-T-402-11-A (WT11). (LI)	No	3		
	A&B 3				
17	Purpose made window, size approximately 1 500mm wide x 600mm high, all work according to Architects drawing AR-T-402-12-A (WT12). (LI)	No	2		
	A&B 2				
Carried to Collection				R	
Bill No. 12					
Metalwork					

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		Unit	Quantity	Rate	Amount
18	Purpose made window, size approximately 900mm wide x 450mm high, all work according to Architects drawing AR-T-402-30-A (WT30). (LI)	No	2		
	A&B 2				
19	Purpose made window, size approximately 1 050mm wide x 600mm high, all work according to Architects drawing AR-T-402-31-A (WT31). (LI)	No	4		
	A&B 4				
	<u>Class 2 powder coated aluminium window to SANS 10322:2014 Crealco Swift 34 or equally approved fixed aluminium casement window glazing throughout to be 6.38mm thick normal strength PVB laminated "Arctic Snow" safety glass, per layout. Fixing lugs suitable for fixing to plastered brickwork reveals. AAAMSA exposure category: A2, 300 stays, 13mm stack, capacity 18Kg. Crealco code STF-TH300S-304 or equally approved Class 2 powder coated to SANS 10322:2014 per manufacturers specification to suite operation indicated.</u>				
20	Purpose made window, size approximately 600mm wide x 600mm high, all work according to Architects drawing AR-T-402-20 (WT20). (LI)	No	2		
	A&B 2				
21	Purpose made window, size approximately 700mm wide x 700mm high, all work according to Architects drawing AR-T-402-13 (WT13). (LI)	No	10		
	A&B 10				
22	Purpose made window, size approximately 700mm wide x 1 100mm high, all work according to Architects drawing AR-T-402-14 (WT14). (LI)	No	7		
	A&B 7				
23	Purpose made window, size approximately 700mm wide x 2 550mm high, all work according to Architects drawing AR-T-402-17 (WT17). (LI)	No	1		
	A&B 1				
24	Purpose made window, size approximately 1 500mm wide x 600mm high, all work according to Architects drawing AR-T-402-18 (WT18). (LI)	No	2		
	A&B 2				
25	Purpose made window, size approximately 1 500mm wide x 450mm high, all work according to Architects drawing AR-T-402-19 (WT19). (LI)	No	2		
	A&B 2				

Carried to Collection

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Bill No. 12
Metalwork

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	Unit	Quantity	Rate	Amount
<u>Class 2 powder coated aluminium sliding window to SANS 10322:2014 Crealco Sliding 1000 or equally approved sliding aluminium window glazing throughout to be 6.38mm thick normal strength PVB laminated clear safety glass. With AAAMSA exposure category: A2 material as per manufacturers specification to suite operation indicated.</u>				
26	No	10		
Purpose made window, size approximately 1 200mm wide x 1 000mm high, all work according to Architects drawing AR-T-402-21-A (WT21). (LI)				
D 10				
27	No	10		
Purpose made window, size approximately 1 200mm wide x 600mm high, all work according to Architects drawing AR-T-402-22-A (WT22). (LI)				
D 10				
28	No	20		
Purpose made window, size approximately 1 200mm wide x 1 500mm high, all work according to Architects drawing AR-T-402-23-A (WT23). (LI)				
D 20				
<u>HOT DIPPED GALVANISED MILD STEEL BURGLAR GUARDS</u>				
Note: The following burglar guards, screens, etc. contain references to Architectural drawings appended elsewhere in this Bid Document. The bidder is to study these drawings carefully as all items required for the complete and approved supply and installation of the aforementioned items as per the drawings such as but not limited to flanges, additional welds, angle irons, sheet metal, motor filling, mild steel rods, popriveting, fixing lugs, M8 anchor bolts, etc., will be deemed to be included in the tendered rate for same. No further claims in this regard will be entertained.				
<u>Hot dipped galvanised mild steel metalwork burglar proofing consisting of frame 40x6 flat bar with same horizontal bars at max 90mm cc. Frame secured to window reveal with M8 anchor bolts at max 450mm cc on verticals reveals. With and including paint finish 2 coats enamel on prepared substrate, galvclean, and 1 coat primer, and 1 coat undercoat.</u>				
29	No	2		
Purpose made burglar, size approximately 2 400mm wide x 600mm high, as per Architects drawing AR-T-402-06-A (WT06). (LI)				
A&B 2				
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		Unit	Quantity	Rate	Amount
30	Purpose made burglar, size approximately 1200mm wide x 1000mm high, as per Architects drawing AR-T-402-07-A/AR-T-402-21-A (WT07,WT21). (LI)	No	17		
	A&B 7 D 10				
31	Purpose made burglar, size approximately 1200mm wide x 800mm high, as per Architects drawing AR-T-402-08-A (WT08). (LI)	No	6		
	A&B 6				
32	Purpose made burglar, size approximately 800mm wide x 800mm high, as per Architects drawing AR-T-402-09-A (WT09). (LI)	No	2		
	A&B 2				
33	Purpose made burglar, size approximately 800mm wide x 1350mm high, as per Architects drawing AR-T-402-10-A (WT10). (LI)	No	3		
	A&B 3				
34	Purpose made burglar, size approximately 600mm wide x 600mm high, as per Architects drawing AR-T-402-11-A/AR-T-402-20 (WT11,WT20). (LI)	No	5		
	A&B 5				
35	Purpose made burglar, size approximately 700mm wide x 700mm high, as per Architects drawing AR-T-402-13 (WT13). (LI)	No	10		
	A&B 10				
36	Purpose made burglar, size approximately 700mm wide x 1100mm high, as per Architects drawing AR-T-402-14 (WT14). (LI)	No	7		
	A&B 7				
37	Purpose made burglar, size approximately 700mm wide x 2550mm high, as per Architects drawing AR-T-402-17 (WT17). (LI)	No	1		
	A&B 1				
38	Purpose made burglar, size approximately 1500mm wide x 600mm high, as per Architects drawing AR-T-402-12-A (WT12). (LI)	No	2		
	A&B 2				
39	Purpose made burglar, size approximately 1500mm wide x 600mm high, as per Architects drawing AR-T-402-18 (WT18). (LI)	No	2		
	A&B 2				
40	Purpose made burglar, size approximately 1500mm wide x 450mm high, as per Architects drawing AR-T-402-19 (WT19). (LI)	No	2		
	A&B 2				

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Bill No. 12
Metalwork

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		Unit	Quantity	Rate	Amount
41	Purpose made burglar, size approximately 900mm wide x 450mm high, as per Architects drawing AR-T-402-30-A (WT30). (LI)	No	2		
	A&B 2				
42	Purpose made burglar, size approximately 1050mm wide x 450mm high, as per Architects drawing AR-T-402-31-A (WT31). (LI)	No	4		
	A&B 4				
43	Purpose made burglar, size approximately 1200mm wide x 600mm high, as per Architects drawing AR-T-402-22-A (WT22). (LI)	No	10		
	D 10				
44	Purpose made burglar, size approximately 1200mm wide x 1500mm high, as per Architects drawing AR-T-402-23-A (WT23). (LI)	No	20		
	D 20				
45	Purpose made burglar, size approximately 3310mm wide x 2350mm high, as per Architects drawing AR-T-402-26 (WT26). (LI)	No	2		
	A&B 2				
46	Purpose made burglar, size approximately 5870mm wide x 2350mm high, as per Architects drawing AR-T-402-25 (WT25). (LI)	No	2		
	A&B 2				
	<u>HOT DIPPED GALVANISED STEEL CAT LADDERS</u>				
	<u>"Grating World (Pty) Ltd" or equally approved cat ladders</u>				
47	Overall size 1472mm x 5225mm galvanised mild steel access ladder in 50x50x5 angle framing with treads at 350mm cc vertically in same section. Fall prevention cage to fit height 3.2m high fixed as per manufacturer's instructions and Architectural specification, welded to ladder rails, in 50x5 flat bar at 350mm cc with 2 vertical rails. Lockable, hinged leaf to secure lower end and platform at upper end above roof sheeting, as per manufacturer's instructions, Architects drawing 2301-AR-T-554 and Architectural specification	No	1		
	A&B 1				
Carried to Collection					R
Bill No. 12					
Metalwork					

		Unit	Quantity	Rate	Amount
<u>HOT DIPPED GALVANISED PRESSED STEEL COMBINATION DOORS AND FRAMES</u>					
<u>Hot dipped galvanised combination solid steel doors and steel grille gate</u>					
48	Type "T1" solid steel door with viewing panel manufactured from steel tubing, bars and steel sheeting shaped into sizes, with and including door and grille gate frames, hinges, locks and lock boxes, handles all complete as per detail drawings POL2012/D1a/D2/D3/D4/D5 (D21a, D22a) (LI)	No	2		
	A&B 2				
49	Type "T3/1" steel grille gate manufactured from steel tubing, bars and steel sheeting shaped into sizes, with and including door and grille gate frames, hinges, locks and lock boxes, handles all complete as per detail drawings POL2012/D1a/D2/D3/D4/D5 (D21b, D22b) (LI)	No	2		
	A&B 2				
<u>OVERHEAD SECURITY GRILLES</u>					
<u>Notes:</u>					
All structural steel to be hot dipped galvanised, all in accordance with SANS 10400.					
Aforegoing preambles related to structural steelwork shall apply where applicable					
<u>The following in frame and supports to overhead security grilles (grilles elsewhere measured):</u>					
50	50 x 50 x 6 x 4.469kg/m steel angles	Tonnes	0.04		
	A&B 0.04				
51	50 x 50 x 4 x 5.869kg/m square tube	Tonnes	0.16		
	A&B 0.16				
52	50 x 50 x 6mm Square hollow section frame	Tonnes	0.14		
	A&B 0.14				
53	25mm diameter x 3mm round tube	Tonnes	0.14		
	A&B 0.14				
54	40 x 6 x 1.884kg/m flat bar	Tonnes	2.53		
	A&B 1.01 D 1.52				
Carried to Collection					R
Bill No. 12					
Metalwork					

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LM RJ R-r.

		Unit	Quantity	Rate	Amount
<u>HOT DIPPED GALVANISED MILD STEEL DOOR FRAME</u>					
<u>Standard 1.6mm thick galvanised pressed steel frame with double rebate, base tie for screeded floor. 1.5 pairs per leaf 100x75x3mm ball bearing brass butt hinges incl 100x3mm thick steel screw fixing plate welded to inner face of frame, adjustable CP striking plate, rubber buffers and fixing lugs. For a 230mm brick wall. Per SANS 1129.</u>					
55	Frame for double door size approximately 1 350mm wide x 2 032mm high, built into one brick wall with and including 300mm lugs. (DT-B, DT-K) (LI)	No	3		
	A&B 3				
56	Frame for door size approximately 813mm wide x 2032mm high, built into one brick wall with and including 300mm lugs. (DT-C, DT-D, DT-J, DT-E, DT-G, DT-H) (LI)	No	48		
	A&B 28 D 20				
57	Frame for door size approximately 950mm wide x 2 032mm high, built into one brick wall with and including 300mm lugs. (DT-F) (LI)	No	2		
	A&B 2				
58	Frame for door size approximately 650mm wide x 2032mm high, built into one brick wall with and including 300mm lugs. (DT-L) (LI)	No	2		
	A&B 2				
59	Frame for double door size approximately 1 600mm wide x 2032mm high, built into one brick wall with and including 300mm lugs. (DT-M) (LI)	No	2		
	C 2				
60	Frame for door size approximately 600mm wide x 906mm high, built into one brick wall with and including 300mm lugs. (DT-P) (LI)	No	1		
	A&B 1				
Carried to Collection					R
Bill No. 12 Metalwork					219 hm 27 R.m.

		Unit	Quantity	Rate	Amount
<u>POWDER COATED ALUMINIUM SLIDING FOLDING DOOR AND SHOPFRONTS</u>					
<u>Powder coated aluminium sliding folding door and door frames as per Architectural door schedules (DWG No: ART-T-400-14) appended elsewhere in this Bid document, complete with subframes, ironmongery, 6.38mm laminated safety toughened glazing fixed to panels, all in accordance with SANS 10400 & 10322:2014, sealing mullions, rails, etc. and fixing to brickwork or concrete.</u>					
61	Purpose made unit size approximately 3 300mm wide x 2 365mm high (DT-N) (LI) A&B 2	No	2		
<u>STEEL RECORDROOM AND STRONGROOM DOORS, VENTILATORS, ETC</u>					
<u>"CAT 2 RH" or equally approved Strong room doors etc. suitable for 230mm walls fixed to brickwork or concrete</u>					
62	"CAT 2 RH" or equally approved strong room door and frame 1 000mm x 2 030mm high overall (DT-I) (LI) A&B 1	No	1		
63	Single ended record room ventilator (LI) A&B 1	No	1		
<u>GALVANISED STEEL GATES, SCREENS, ETC</u>					
<u>Mesh security panel over ceiling</u>					
64	Expanded galvanised mild steel mesh panels, secured under timber trusses over brandering with 50 x 50 x4mm square tube frame and with 25mm x 3mm tube bars at 125mm centres all work according to Architects drawing 2301-AR-T551 B (LI) A&B 12	m ²	12		
<u>Mesh security panel over ablution duct</u>					
65	"Wirewall 358 weldmesh" or equally approved infill panel, secured to inner face of 50 x 50 x 5mm galvanised mild steel angle frame with and including fixing lugs to brickwall all work according to Architects drawing 2301-AR-T551 B (LI) A&B 4	m ²	4		
Carried to Collection				R	
Bill No. 12 Metalwork					

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Lm RT R.m.

		Unit	Quantity	Rate	Amount
	<u>"Wirewall 358" or equally approved mesh fencing enclosure and gates</u>				
66	Security mesh fencing panels 2100mm overall height vertically with galvanised components and mesh fixed with single and double comb clamps with anti vanda all as per manufacturers instruction and all work according to Architects drawing 2301-AR-T564 (LI)	m	12		
	D 12				
67	100 x 100 x 4mm Square tube post, 2.1m high post with and including 200 x 150 x 8mm base plate four times holed welded to one end and UV stabilised polypropylene cap to the other end, fixing cleats, tie rods, sheer nuts, washers fixed to concrete, all work according to Architects drawing 2301-AR-T564 (LI)	No	10		
	D 10				
68	Double gate of 75mm x 50mm outer frame, and 50mm x 50mm square tubing gate leaf frame, for 2100mm x 2100mm high gate vertically to suit security fencing, the vertical section covered with galvanised "Wirewall 358 mesh" or equally approved fixed with single and double comb clamps with anti vanda fixings or equally approved, including bullet hinges, with 12 diameter "T" slide lock device with lock box protection, 12mm diameter round bar peg stay with 50 x 6mm flat bat frame supports, 16mm diameter round bar 400mm long with 2No. Spacers 50mm long, welded to main frame, all work according to Architects drawing 2301-AR-T564.	No	2		
	D 2				
69	1640mm x 3415mm Overall size mesh panel and gate combination, with single gate of 75mm x 50mm outer frame, and 50mm x 50mm square tubing gate leaf frame, for 900mm x 2260mm high gate vertically to suit security fencing, the vertical section covered with galvanised "Wirewall 358 mesh" fixed with single and double comb clamps with anti vanda fixings or equally approved, including bullet hinges, with Cisa Electric strike rim lock, 12mm diameter round bar peg stay with 50 x 6mm flat bat frame supports, 16mm diameter round bar 400mm long with 2No. Spacers 50mm long handle, with and including "Assa Abloy" DC700 or equally approved cam motion closer EN3-6 SIL, welded to main frame, all work according to Architects drawing 2301-AR-T562. (G04)	No	2		
	A&B 2				
	Carried to Collection			R	
	Bill No. 12				
	Metalwork				

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		Unit	Quantity	Rate	Amount
70	Single gate of 75mm x 50mm outer frame, and 50mm x 50mm square tubing gate leaf frame, for 1000mm x 2040mm high gate vertically to suit brickwork on both sides, the vertical section covered with galvanised "Wirewall 358 mesh" fixed with single and double comb clamps with anti vanda fixings or equally approved, including bullet hinges, with BBL Keytek 280KG magnetic locking device, 12mm diameter round bar peg stay with 50 x 6mm flat bat frame supports, 16mm diameter round bar 400mm long with 2No. Spacers 50mm long handle, with and including "Assa Abloy" DC700 or equally approved cam motion closer EN3-6 SIL, welded to main frame, all work according to Architects drawing 2301-AR-T562. (G05)	No	3		
	A&B 3				
71	Single gate of 75mm x 50mm outer frame, and 50mm x 50mm square tubing gate leaf frame, for 650mm x 2040mm high gate vertically to suit brickwork on both sides, the vertical section covered with galvanised "Wirewall 358 mesh" fixed with single and double comb clamps with anti vanda fixings or equally approved, including bullet hinges, with 12 diameter "T" slide lock device with lock box protection, 12mm diameter round bar peg stay with 50 x 6mm flat bat frame supports, 16mm diameter round bar 400mm long with 2No. Spacers 50mm long handle, welded to main frame, all work according to Architects drawing 2301-AR-T562. (G06)	No	3		
	A&B 3				
72	1500mm x 2350mm Overall size mesh panel and gate combination, with single gate of 75mm x 50mm outer frame, and 50mm x 50mm square tubing gate leaf frame, for 900mm x 2260mm high gate vertically to suit security fencing, the vertical section covered with galvanised "Wirewall 358 mesh" fixed with single and double comb clamps with anti vanda fixings or equally approved, including bullet hinges, with 12 diameter "T" slide lock device with lock box protection, 12mm diameter round bar peg stay with 50 x 6mm flat bat frame supports, 16mm diameter round bar 400mm long with 2No. Spacers 50mm long handle, welded to main frame, all work according to Architects drawing 2301-AR-T562. (G07)	No	2		
	E 2				

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		Unit	Quantity	Rate	Amount
73	1560mm x 2450mm Overall size mesh panel and gate combination, with single gate of 75mm x 50mm outer frame, and 50mm x 50mm square tubing gate leaf frame, for 900mm x 2360mm high gate vertically to suit security fencing, the vertical section covered with galvanised "Wirewall 358 mesh" fixed with single and double comb clamps with anti vanda fixings or equally approved, including bullet hinges, with BBL Keytek 280KG magnetic locking device, 12mm diameter round bar peg stay with 50 x 6mm flat bat frame supports, 16mm diameter round bar 400mm long with 2No. Spacers 50mm long handle, welded to main frame, all work according to Architects drawing 2301-AR-T562. (G08)	No	1		
	A&B 1				
	<u>GALVANISED STEEL MINOR WORK</u>				
	<u>Fixing accessories to roof timbers etc</u>				
74	Design and supply galvanised mild steel support structure for awnings, with and including fixings complete all work according to Architects drawing 2301-AR-T555 A	m²	74		
	A&B 8 D 66				
	<u>ALUMINIUM SHOPFRONTS (CPAP WORK GROUP NO. 149)</u>				
	<u>Class 2 powder coated aluminium window to SANS 10322:2014 Crealco Clip 44 shopfront system or equally approved with and including 120B frame sections, W120 Mullions, code W44092 section at max 1 700 mm centres. Bottom rail in Code R4. 85mm. Head rail in R7. Including inserts: Crealco Sliding 1000 or equally approved sliding aluminium window, per layout. Fixing lugs suitable for fixing to plastered brickwork reveals and steel beam over. Glazing throughout to be 6.38mm thick normal strength PVB laminated clear safety glass, per layout. AAAMSA exposure category: A2, with and including 4mm "Alucabond" or equally approved lower spandrel panel all as per manufacturers specification to suite operation indicated. With and including painted hot dipped qms metalwork burglar proofing.</u>				
75	Purpose made shopfront system, size approximately 5 870mm wide x 2 350mm high, all work according to Architects drawing AR-T-402-25 (WT25). (LI)	No	2		
	A&B 2				
Carried to Collection				R	
Bill No. 12 Metalwork					

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		Unit	Quantity	Rate	Amount
76	Purpose made shopfront system, size approximately 3 310mm wide x 2 350mm high, all work according to Architects drawing AR-T-402-26A (WT26). (LI) A&B 2 <u>Class 2 powder coated aluminium window to SANS 10322:2014 Crealco Clip 44 shopfront system or equally approved with and including 120B frame sections, W120 Mullions, code W44092 section at max 1 700 mm centres. Bottom rail in Code R4, 85mm. Head rail in R7, and fixing lugs suitable for fixing to plastered brickwork reveals or steel beam over. Glazing throughout to be 6.38mm thick normal strength PVB laminated opal safety glass, per layout. AAAMSA exposure category: A2, with and including 4mm "Alucabond" or equally approved lower spandrel panel all as per manufacturers specification to suite operation indicated. With and including all fixings</u>	No	2		
77	Purpose made shopfront system, size approximately 6 000mm wide x 2 400mm high, all work according to Architects drawing AR-T-402-27 (WT27). (LI) A&B 1 <u>Class 2 powder coated aluminium shopfront window to SANS 10322:2014 Crealco Clip 44 26B outer frame fixed pane shopfront window or equally approved, 152 x 30 aluminium shopfront W150 Mullions, code W53151 section at max 1 700 mm centres. Bottom rail in code R4, 85mm. Head rail in R7. Including inserts: Crealco Sliding 1000 or equally approved sliding aluminium window, per layout. Door leafs with and including Clip 44 hinges, 85mm frame, full glazed aluminium side hung door, with 100mm sinkless stainless steel hinges. Union DC700 door closer, Thumb-turn euro profile cyclinder lock and narrow style lockblock, escutcheouns, "Assa Abloy SS Kinglet Square "22 x 200mm square pull handle or other approved, with top and bottom concealed flush bolts, rubber door stops. Glazing throughout to be 6.38mm clear laminated clear safety glass, per layout. AAAMSA exposure category: A2, all as per manufacturers specification to suite operation indicated.</u>	No	1		
78	Purpose made shopfront system, size approximately 2 120mm wide x 2 720mm high, all work according to Architects drawing AR-T-400-1 (DT-A). (LI) A&B 2	No	2		
Carried to Collection				R	
Bill No. 12 Metalwork					

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		Unit	Quantity	Rate	Amount
<u>ALUMINIUM INSECT SCREENS</u>					
<u>Powder coated of colour to match window frame insect screens as per "Trellidor Clearguard" or equally approved Dusk mosquito system, consisting of 89x23mm box section outer frame, and stainless steel woven mesh screen in 42 x 33mm casement framing, complete with ironmongery etc and fixing to brickwork or concrete</u>					
79	Purpose made screen, 1 200mm x 1 000mm high, all work according to Architects drawing AR-T-402-21-A (WT21)	No	10		
	D 10				
80	Purpose made screen, 1 200mm x 600mm high, all work according to Architects drawing AR-T-402-22-A (WT22)	No	10		
	D 10				
81	Purpose made screen, 1 200mm x 1 500mm high, all work according to Architects drawing AR-T-402-23-A (WT23)	No	20		
	D 20				
Carried to Collection				R	
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Metalwork					

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BILL NO. 12

METALWORK

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Metalwork

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LM RT R-r.

Unit Quantity Rate Amount

SECTION NO. 2

BILL NO. 13

PLASTERING

(CPAP WORK GROUP NO. 142 UNLESS OTHERWISE STATED)

<u>Key:</u>	<u>Location Description:</u>
Un/A	Unallocated
Item	Item Location
A&B	A&B: Main & Cleaners
C	C: Power & Water Mgt
D	D1&D2: Residences
E	E: Refuse Room

The bidder is referred to the relevant clauses in the ASAQS General Preambles for Trades (2017 Edition), to the Architectural and Structural/Civil Engineering specifications documents, to the drawings (which are to be read in conjunction with the architectural specification), and to all general and project-specific specifications as contained in the complete Bid Documents. Bidders are thus urged to study these documents as rates will be deemed to be inclusive of all requirements as included in same. Further, should any discrepancy be noted between these Bills of Quantities and the Specifications, the Specifications shall take precedence.

Further to the above, Bidders are to note that the latest edition of SANS 10400, current at the time of the tender will form part of the specifications to this contract and as such, pricing shall be deemed to include for complete conformance in all respects to the requirements of SANS 10400.

SUPPLEMENTARY PREAMBLES

Working at Heights:

Bidders are to note that the work to be undertaken will require all necessary scaffolding, due to the heights of the structures to be constructed/alterd. Bidders are to therefore price accordingly as rates will be deemed to include for same and no further claims in regard to all necessary scaffolding in the completion of the scope of works will be entertained.

Carried to Collection

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Plastering

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Unit Quantity Rate Amount

Labour Intensive (LI)

Bidders are to note well that specific items within these Bills of Quantities have been designated as LABOUR INTENSIVE by the addition of the words "Labour Intensive" at the end of the description for the said item. Where items have been designated as being LABOUR INTENSIVE as described, pricing shall be deemed to include for the carrying out to completion of said item on site by means and methods that rely predominantly on manual labour. As such, no claims shall be entertained regarding any additional time or monetary costs incurred by the use of LABOUR INTENSIVE methods. Further, the Contractor is to note that contravention of the above i.e. use of mechanised, or other systems to carry out LABOUR INTENSIVE work as hereinafter designated, will be viewed and dealt with in an extremely serious light by the Client, as it remains a national imperative to develop, employ and provide skills.

Drawings:

Tenderers are to note that where descriptions include references to drawings which form part of the tender documentation, notwithstanding anything contained in the description, tenderers are to price these items in accordance with the drawings. Further, the onus is on the tenderer to ensure that all relevant drawings referenced in the Bills of Quantities are included in the tender documents. No further time or monetary claims resulting from failure to comply with any of the above will be entertained.

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 applied immediately thereafter. 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 slab shall then be wetted and kept damp for at least six hours before applying the granolithic.

Mix

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

Carried to Collection

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Plastering

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					Unit	Quantity	Rate	Amount
<u>Panels</u>								
Where possible joints between panels shall be positioned 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 and finished with V-joints								
<u>Laying</u>								
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. The granolithic shall be 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								
<u>Curing, seasoning and protection</u>								
Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying.								
<u>Colour</u>								
Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour.								
<u>SCREEDS</u>								
<u>Screeds wood floated on concrete</u>								
1	25mm Thick on floors and landings. (LI)				m ²	968		
	A&B	622	C	51	D	261		
	E	34						
2	25mm Thick on narrow widths. (LI)				m ²	16		
	A&B	6	C	1	D	8		
	E	1						
<u>GRANOLITHIC</u>								
<u>Untinted granolithic screed, on concrete</u>								
3	25mm Thick on floors and landings				m ²	131		
	A&B	22	D	109				
Carried to Collection							R	
Bill No. 13								
Plastering								

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					Unit	Quantity	Rate	Amount
<u>SPECIALIST FLOOR COVERINGS</u>								
<u>Prepare and apply "Flowprime" primer, and one coat PVC Flowcrete - "SF41" epoxy screed to a nominal thickness of 0.5mm and seal with a seal coat, all as per manufacturers instructions:</u>								
4	Floors and landings				m ²	138		
	A&B 75	C 38	E 25					
5	Skirting not exceeding 300mm high				m	112		
	A&B 57	C 35	E 20					
<u>INTERNAL PLASTER</u>								
<u>Cement plaster wood floated, on brickwork</u>								
6	On walls. (LI)				m ²	2 558		
	A&B 1585	C 105	D 813					
	E 55							
7	On narrow widths. (LI)				m ²	87		
	A&B 45	D 42						
<u>EXTERNAL PLASTER</u>								
<u>Cement plaster wood floated, on brickwork</u>								
8	On walls. (LI)				m ²	368		
	A&B 184	D 184						
9	On narrow widths. (LI)				m ²	57		
	A&B 15	D 42						

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PLASTERING

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Plastering

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LM 127 R.M.

Unit Quantity Rate Amount

SECTION NO. 2

BILL NO. 14

TILING

(CPAP WORK GROUP NO. 144 UNLESS OTHERWISE STATED)

<u>Key:</u>	<u>Location Description:</u>
Un/A	Unallocated
Item	Item Location
A&B	A&B: Main & Cleaners
C	C: Power & Water Mgt
D	D1&D2: Residences
E	E: Refuse Room

The bidder is referred to the relevant clauses in the ASAQS General Preambles for Trades (2017 Edition), to the Architectural and Structural/Civil Engineering specifications documents, to the drawings (which are to be read in conjunction with the architectural specification), and to all general and project-specific specifications as contained in the complete Bid Documents. Bidders are thus urged to study these documents as rates will be deemed to be inclusive of all requirements as included in same. Further, should any discrepancy be noted between these Bills of Quantities and the Specifications, the Specifications shall take precedence.

Further to the above, Bidders are to note that the latest edition of SANS 10400, current at the time of the tender will form part of the specifications to this contract and as such, pricing shall be deemed to include for complete conformance in all respects to the requirements of SANS 10400.

SUPPLEMENTARY PREAMBLES

Working at Heights:

Bidders are to note that the work to be undertaken will require all necessary scaffolding, due to the heights of the structures to be constructed/alterd. Bidders are to therefore price accordingly as rates will be deemed to include for same and no further claims in regard to all necessary scaffolding in the completion of the scope of works will be entertained.

Carried to Collection

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Bill No. 14

Tiling

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Lm 127 R.M.

Unit	Quantity	Rate	Amount
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Labour Intensive (LI)

Bidders are to note well that specific items within these Bills of Quantities have been designated as LABOUR INTENSIVE by the addition of the words "Labour Intensive" at the end of the description for the said item. Where items have been designated as being LABOUR INTENSIVE as described, pricing shall be deemed to include for the carrying out to completion of said item on site by means and methods that rely predominantly on manual labour. As such, no claims shall be entertained regarding any additional time or monetary costs incurred by the use of LABOUR INTENSIVE methods. Further, the Contractor is to note that contravention of the above i.e. use of mechanised, or other systems to carry out LABOUR INTENSIVE work as hereinafter designated, will be viewed and dealt with in an extremely serious light by the Client, as it remains a national imperative to develop, employ and provide skills.

Drawings:

Tenderers are to note that where descriptions include references to drawings which form part of the tender documentation, notwithstanding anything contained in the description, tenderers are to price these items in accordance with the drawings. Further, the onus is on the tenderer to ensure that all relevant drawings referenced in the Bills of Quantities are included in the tender documents. No further time or monetary claims resulting from failure to comply with any of the above will be entertained.

Fixing

Unless described as 'fixed with adhesive to plaster (plaster elsewhere)' or fixed with adhesive to screed (screed elsewhere measured) 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 cement screed

Tiling described as 'fixed with adhesive on power floated concrete' shall be deemed to include for approved tiling key-coat

Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts as recommended by the manufacturer of the tiles

Carried to Collection

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Bill No. 14

Tiling

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			Unit	Quantity	Rate	Amount
WALL TILING						
"Union" or equally approved						
600 x 300mm matt white ceramic tiles Code: UT4062, fixed with TAL GOLDSTAR 6 Rapid-Setting adhesive to plaster (plaster elsewhere) and flush pointed with and including approved tinted waterproof grout all as per architectural specifications						
1	On Walls		m ²	462		
	A&B 248	D 214	m ²	22		
2	On Narrow widths					
	A&B 11	D 11				
"Union" or equally approved 200 x 200mm matt white ceramic tiles Code: UTB35193, fixed with TAL GOLDSTAR 6 Rapid-Setting adhesive to plaster (plaster elsewhere) and flush pointed with and including approved tinted waterproof grout all as per architectural specifications						
3	On Splashbacks		m ²	21		
	A&B 8	D 13				
FLOOR TILING						
R9 600 x 600mm Full bodied matt finish porcelain tiles (Q6A), fixed with TAL GOLDSTAR 6 Rapid-Setting adhesive to screeded floors (screed elsewhere) and flush pointed with and including approved tinted waterproof grout all as per architectural specifications						
4	On floors		m ²	483		
	A&B 239	D 244	m	430		
5	Skirting					
	A&B 211	D 219				
R11 600 x 600mm Non-slip porcelain tiles (Q7), fixed with TAL GOLDSTAR 6 Rapid-Setting adhesive to screeded floors (screed elsewhere) and flush pointed with and including approved tinted waterproof grout all as per architectural specifications						
6	On floors		m ²	74		
	A&B 28	D 46	m	98		
7	Skirting					
	A&B 41	D 57				

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		Unit	Quantity	Rate	Amount
SUNDRIES					
<u>Aluminium corner protectors, stair nosings, expansion joint strips, etc.</u>					
<u>Aluminium dividing strips</u>					
<u>"Kirk PRE090"</u>					
8	9mm PVC round edge trim (Colour: White)	m	143		
	A&B 143				
<u>"M-Trim SMJ120" or equally approved 12mm Stainless steel movement joint as per manufacturer's specification. (Colour: Black)</u>					
9	On Floors	m	96		
	A&B 96				
<u>"M-Trim PCJ100" or equally approved 10mm PVC perimeter movement joint as per manufacturer's specification. (Colour: Black)</u>					
10	Between floors and Walls	m	356		
	A&B 356				
<u>"M-Trim STICP120" or equally approved Grade430 brushed finished transition strip to suite 10-11mm depth tiles as per manufacturer's specification</u>					
11	On Floors	m	28		
	A&B 28				
Carried to Collection				R	
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Tiling					

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TILING

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Tiling

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Unit Quantity Rate Amount

SECTION NO. 2

BILL NO. 15

PLUMBING AND DRAINAGE

(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)

<u>Key:</u>	<u>Location Description:</u>
Un/A	Unallocated
Item	Item Location
A&B	A&B: Main & Cleaners
C	C: Power & Water Mgt
D	D1&D2: Residences
E	E: Refuse Room

The bidder is referred to the relevant clauses in the ASAQS General Preambles for Trades (2017 Edition), to the Architectural and Structural/Civil Engineering specifications documents, to the drawings (which are to be read in conjunction with the architectural specification), and to all general and project-specific specifications as contained in the complete Bid Documents. Bidders are thus urged to study these documents as rates will be deemed to be inclusive of all requirements as included in same. Further, should any discrepancy be noted between these Bills of Quantities and the Specifications, the Specifications shall take precedence.

Further to the above, Bidders are to note that the latest edition of SANS 10400, current at the time of the tender will form part of the specifications to this contract and as such, pricing shall be deemed to include for complete conformance in all respects to the requirements of SANS 10400.

SUPPLEMENTARY PREAMBLES

Working at Heights:

Bidders are to note that the work to be undertaken will require all necessary scaffolding, due to the heights of the structures to be constructed/altered. Bidders are to therefore price accordingly as rates will be deemed to include for same and no further claims in regard to all necessary scaffolding in the completion of the scope of works will be entertained.

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Unit Quantity Rate Amount

Labour Intensive (LI)

Bidders are to note well that specific items within these Bills of Quantities have been designated as LABOUR INTENSIVE by the addition of the words "Labour Intensive" at the end of the description for the said item. Where items have been designated as being LABOUR INTENSIVE as described, pricing shall be deemed to include for the carrying out to completion of said item on site by means and methods that rely predominantly on manual labour. As such, no claims shall be entertained regarding any additional time or monetary costs incurred by the use of LABOUR INTENSIVE methods. Further, the Contractor is to note that contravention of the above i.e. use of mechanised, or other systems to carry out LABOUR INTENSIVE work as hereinafter designated, will be viewed and dealt with in an extremely serious light by the Client, as it remains a national imperative to develop, employ and provide skills.

Drawings:

Tenderers are to note that where descriptions include references to drawings which form part of the tender documentation, notwithstanding anything contained in the description, tenderers are to price these items in accordance with the drawings. Further, the onus is on the tenderer to ensure that all relevant drawings referenced in the Bills of Quantities are included in the tender documents. No further time or monetary claims resulting from failure to comply with any of the above will be entertained.

Wire gratings

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

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc. are to be sealed against adjacent surfaces with approved silicone - Class F20 HM, to EN 150 11600

uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings. Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings.

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	Unit	Quantity	Rate	Amount
<u>Polycop polypropylene pipes</u> Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with Fast-fuse heat welded thermoplastic or where so described Polylock compression fittings. Pipes shall be firmly fixed to walls, etc. with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions. <u>Copper Pipes:</u> Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary soldier fittings and compression fittings shall be 'Cobra Watertech' or equally approved type. Capillary soldier fitting shall comply with ISO 2016. <u>Reducing fittings</u> Where fittings have reducing ends or branches they are described as 'reducing' and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. <u>Fixing of pipes</u> 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. <u>Paper wrapping to pipes</u> Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings. <u>Disinfection of water pipework</u> Water pipework is to be disinfected at completion in accordance with the relevant part of SANS (provision for disinfection elsewhere). <u>General</u> Rates for installation of sanware and all drainage and supply piping of all types will be deemed to include for fair cutting around pipes and making good to floor and wall finishes.				
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		Unit	Quantity	Rate	Amount
<u>As-built drawings</u>					
The contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere).					
<u>RAINWATER DISPOSAL</u>					
<u>125 Seamless aluminium gutter. G4 colortech finish</u>					
1	Longspan or equal, 125mm O.G. G4 colortech finish Aluminium seamless gutter, incl end caps and apertures for afixing rwdp's Gutters fixed to roof sheeting with proprietary internal hangers and rafter fixing brackets. Colour provisionally Marble White	m	283		
	A&B 154 C 8 D 116 E 5				
<u>PVC-U gutters and rainwater pipes</u>					
2	82mm ø uPVC Rain Water Down Pipe per SANS 11, fitted with and including aluminium alloy brackets to brickwork walls, unless otherwise specified. Pipes fitted with solvent weld joints. Holderbats at 900mm centres, complete with all necessary swan necks, shoes and brackets, all sealed with mastic jointing compound and bolted together with M6 x 40 verandah bolts with flat and malthoid washers, discharging in positions indicated.	m	125		
	A&B 85 C 6 D 28 E 6				
3	Extra over gutter for stopped end	No	16		
	A&B 8 C 2 D 4 E 2				
4	Extra over gutter for angle	No	16		
	A&B 8 C 2 D 4 E 2				
5	Extra over gutter for outlet for 82 x 82mm pipe	No	45		
	A&B 31 C 2 D 10 E 2				
6	Extra over rainwater pipe for eaves or plinth offset	No	45		
	A&B 31 C 2 D 10 E 2				
7	Extra over single socket bends	No	48		
	A&B 20 C 4 D 20 E 4				
8	Extra over rainwater pipe for shoe	No	38		
	A&B 31 C 2 D 4 E 1				

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		Unit	Quantity	Rate	Amount
	<u>uPVC SV pipes</u>				
9	110mm Pipes. (LI) A&B 120 D 65	m	185		
	<u>"St Gobain" or equally approved outlet</u>				
10	150 mm ø full bore outlet with domical grating, top inlet. A&B 5	No	5		
11	100 mm ø full bore outlet with domical grating, top inlet. A&B 5	No	5		
	<u>SANITARY FITTINGS:</u>				
	<u>'Lecico' or equally approved sanitary fittings:</u>				
12	"Lecico" or equally approved vitreous china undercounter basin (product code ATLDUOUND0560UE) with and including 3 x fixation brackets, etc. (S01) A&B 8	No	8		
13	"Lecico H-Line" or equally approved Fireclay 55cm wall hung basin approximate size 554mm wide and 180mm high (product code HLIBASWHU1550UE) with and including all necessary fixings. (LI) (S03, S06) A&B 3 D 1	No	4		
14	"Lecico H_line " or equally approved Fireclay 55cm wall hung basin (product code HLIBASWHU1550UE) with semi- pedestal (product code MADPEDSEM0000UE) with and including all necessary fixings. (LI) (S20) A&B 10	No	10		
15	Vitreous China floor mounted close coupled Raised Paraplegic WC set with elbow action flush per Lecico Atlas Raised Paraplegic CC and 2 piece grab rail combo. Code PARSETCCB0RAIBE, and mechanism code DUTMECPAR0CCMUS (S04) A&B 2 D 1	No	3		
16	Vitreous china wall mounted top flush urinal per Lecico Atlas BS50 Urinal code ATLBOXURI0T50UE. Supplied with Lecico spreader, wall brackets and waste. (S05) A&B 4	No	4		
17	Vitreous China floor mounted close coupled WC set with top dual flush per Lecico Atlas Venezia, pan code ATLPANFLO0000UE and cistern VENCISDFLO0000UE. (S02) A&B 7 D 10	No	17		
	<u>DUTTON PLASTICS OR EQUALLY APPROVED</u>				
18	Code: LUX2000 Thermoplastic seat A&B 10 D 10	No	20		

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		Unit	Quantity	Rate	Amount
	<u>'Franke' or equally approved stainless steel sanitary fittings:</u>				
19	'Franke' or equally approved Trendline (721 DEB) stainless steel double bowl sink size approximately 1200 x 535 mm wide Code 2120007 (Pair) (S09) with and including all necessary fixings, etc. (LI)	No	13		
	A&B 3 D 10				
	<u>"Kwikot" or equally approved:</u>				
20	"Kwikot SWT-WM" or equally approved Grade 304 18/10 stainless steel wall mounted washtrough, size 550mm x 450mm x 257mm deep with pressed bowl with and including galvanised mild steel brackets with and including all fixings, etc. (S10)	No	10		
	D 10				
21	"Kwikot SDRINK-COMB" or equally approved Combination Wash Hand Basin/Drinking Fountain manufactured in 1,2mm thick grade 304 (18/10) stainless steel. Size: 345 x 465mm high welded construction with back recess to be built into wall with and including 100mm with concealed waste and fitted with Walcro 101 metering self-closed bib tap (S11). Whb/drinking fountain to be installed in accordance with SAPS 5 Star guide POL 2012/S2.	No	2		
	A&B 2				
22	"Kwikot SHB001-TDAR" or equally approved Single Stainless steel Wash Hand Basin Complete with and including galvanised Brackets and demand tap, per Basterfield B36654, Kwikot SHB001 or eq app (S15)	No	2		
	A&B 2				
23	Kwikot SWT-SON grade 304 18/10 stainless steel wall mounted washtrough, size 600mm x 500mm x 230mm deep with pressed bowl, galvanised mild steel brackets. (S27)	No	1		
	A&B 1				
24	Kwikot Model Wall and Floor mounted WC Pan Code: SWC-PAN-PR Size: 450 x 380 x 560mm deep manufactured from Grade 304 (18/10) 1,6mm Stainless Steel with rounded edges to reduce injury from sharp corners. Complete with pressed integral "P" trap with flanges bent outwards with mounting holes for fixing to wall and floor. Unit complete with extended inlet (38mmØ) and outlet (100mmØ) pipes to fit through wall. Pipes to be manufactured at 300mm long for a 220mm thick wall. WC to be installed in accordance with SAPS 5 Star guide POL 2012/S1 (S12)	No	2		
	A&B 2				

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		Unit	Quantity	Rate	Amount
<u>CRYTSALTECH OR EQUALLY APPROVED</u>					
25	Shower door – CrystalTech white adjustable pivot shower door. CTE802-800 to 1000 x 1850mm. Incl 5mm tempered glass. (S07)	No	12		
	A&B 2 D 10				
<u>Cobra or equally approved</u>					
26	Arm and Rose . Cobra 200mm doam shower head with ball joint on extended shower arm. Code FSWHR1BN-0GT0156. (S07)	No	12		
	A&B 2 D 10				
<u>PRECAST CONCRETE WASH TROUGH</u>					
27	Precast concrete double wash trough with PC concrete legs, size approximately 1060mm x 650mm x 350mm deep	No	1		
	A&B 1				
<u>WASTE UNIONS ETC</u>					
<u>Cobra or equally approved</u>					
28	Cobra Waste sink 317 unslotted 40mm CP, Code: FWARBT14-0GT0153	No	18		
	A&B 7 D 11				
29	Ref TVAC1033/CH Anti-vandal waste union and overflow. (LI)	No	12		
	A&B 12				
30	Cobra slotted basin waste 303 slotted 32mm CP	No	25		
	A&B 14 D 11				
<u>"Franke" or equally approved</u>					
31	"Franke" standard BSW basket strainer waste fitting for 90mm sink waste outlet, code: 112.0314.101	No	10		
	D 10				
<u>TRAPS ETC</u>					
<u>DUTTON PLASTICS OR EQUALLY APPROVED</u>					
32	40/32mm rubber P trap	No	13		
	A&B 2 D 11				
<u>"Marley" or equally approved</u>					
33	50mm Flexible "P" trap. 102 (LI)	No	12		
	A&B 2 D 10				
34	Shower trap – Cobra 373SQ/N Brass P-trap with CP square screw down gratin. 40 mm waste connection. Code FSWTR140-7FT01	No	12		
	A&B 2 D 10				

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		Unit	Quantity	Rate	Amount
<u>Stainless steel or equally approved</u>					
35	South Africa stainless steel grease trap, for flow rate of 700ml/s. 2 basket fabrication 700x500x450mm - GTS 700 by manufacturer Grease Traps South Africa. (S13)	No	10		
	D 10				
36	South Africa stainless steel grease trap, for flow rate of 800ml/s. 2 basket fabrication 700x500x450mm - 125mm -GTS 125V by manufacturer Grease Traps South Africa.	No	5		
	A&B 5				
<u>Cobra or equally approved</u>					
37	Cobra universal bottle trap code 340N Chrome plated 32/40x40mm incl waste pipe	No	32		
	A&B 21 D 11				
<u>"Franki" or equally approved</u>					
38	Franke 1120008 Spazio 1 Plumbing Kit (50/90mm Outlet)	No	13		
	A&B 3 D 10				
<u>"Cobra" or equally approved :</u>					
<u>TAPS, VALVES, ETC</u>					
<u>"Cobra" or equally approved</u>					
39	Cobra Metered Bib Tap. Non hold open, self closing ½ inch. COB - KM2- 200/N	No	3		
	A&B 2 D 1				
40	Cobra RB Hose bib tap 108LK-20 with union and key	No	25		
	A&B 19 C 1 D 4				
	E 1				
41	Cobra urinal flush valve 20mm code: FJ6-000 CP with and including urinal tailpipe code: FJT5-5 CP	No	3		
	A&B 3				
42	Cobra 20mm concealed toilet flush valve complete, code: FJ4-203PR	No	2		
	A&B 2				
<u>Brass</u>					
43	15mm Stopcock (LI)	No	49		
	A&B 35 D 14				
44	22mm Stopcock (LI)	No	25		
	A&B 17 D 8				
<u>'Cobra' or equally approved:</u>					
45	Cobra stop valve, star handle FXF 20mm, CODE: FSTCF2C1-7FT01	No	4		
	A&B 4				

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		Unit	Quantity	Rate	Amount
46	'Cobra' or equally approved fullway isolating ball valve (Product Code: 1090-15) (V2) (LI)	No	10		
	A&B 10				
47	15mm Fullway isolating ball valve. (LI)	No	22		
	A&B 22				
48	Genebre ISIS Angle Valve PN10 Abs Handle 15x1/2" 3094 05	No	81		
	A&B 31 D 50				
49	Flexible braided connector	No	81		
	A&B 31 D 50				
50	Single pillar tap, Cobra Star raised pillar tap. Code 113/N FPR2A1S3-OGT01	No	10		
	A&B 8 D 2				
51	Elbow action pillar tap, Cobra Medical pillar tap. Code 503-21B/N, FEAPILEA-4FT01	No	4		
	A&B 4				
52	Cobra Star Sink Mixer 266/041/10 Wall Type	No	12		
	A&B 2 D 10				
53	Cobra Pillar sink mixer (FSK1D1NI-0GT0426). Nile lever	No	13		
	A&B 3 D 10				
54	Cobra Nile sink mixer CP 15mm	No	13		
	A&B 3 D 10				
55	Basin Mixer. Cobra Nile standard basin mixer	No	10		
	A&B 10				
56	Single lever basin mixer. Lixil Cobra Nile basin mixer Code FBN1D1NI-0GT0426	No	10		
	A&B 1 D 9				
57	Single lever shower mixer. Lixil Cobra Nile shower mixer Code FSWM1CNI-0GT0426	No	12		
	A&B 2 D 10				
<u>SANITARY PLUMBING</u>					
<u>Class 51 uPVC soil and vent pipes</u>					
58	50mm Pipes. (LI)	m	157		
	A&B 54 D 103				
59	110mm Pipes. (LI)	m	265		
	A&B 105 D 160				
<u>Extra over Class 51 uPVC soil and vent pipes for fittings</u>					
60	110mm End cap (LI)	No	21		
	A&B 11 D 10				
61	110mm BSP adaptor (LI)	No	26		
	A&B 14 D 12				

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		Unit	Quantity	Rate	Amount
62	110mm Bend (LI) A&B 26 D 32	No	58		
63	110mm Pan connector (LI) A&B 22 D 10	No	32		
64	50mm bend (LI) A&B 16 D 22	No	38		
65	50mm 45° Access bend (LI) A&B 5 D 10	No	15		
66	50mm 90° Access bend (LI) A&B 30	No	30		
67	110mm Access heel bend (LI) A&B 18 D 10	No	28		
68	50mm Junction (LI) A&B 8	No	8		
69	50mm 90° Access heel junction (LI) A&B 4 D 10	No	14		
70	110mm Junction (LI) A&B 4 D 10	No	14		
71	110mm Eccentric reducer (LI) A&B 2 D 5	No	7		
72	50mm One way vent valve (LI) A&B 2 D 2	No	4		
73	50mm Two way vent valve (LI) A&B 8	No	8		
74	110mm Two way vent valve (LI) A&B 8	No	8		
75	110mm 90° Access heel junction (LI) A&B 10 D 20	No	30		
76	110mm Access junction (LI) A&B 13	No	13		
77	110mm Access reducing junction (LI) A&B 5	No	5		
78	110mm Double junction (LI) A&B 2	No	2		
79	110mm Reducing junction (LI) A&B 8	No	8		
	<u>Extra over "Geberit" or equally approved pipes for fittings</u>				
80	40mm Diameter 45 degree HDPE bend A&B 6	No	6		

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		Unit	Quantity	Rate	Amount
81	40mm Diameter 45 degree HDPE branch fitting A&B 6 Testing	No	6		
82	Testing waste pipe system Item 1 WATER SUPPLIES Class 2 copper pipes	Item			
83	15mm Pipes. (LI) A&B 202 D 283	m	485		
84	22mm Pipes. (LI) A&B 189 D 56	m	245		
85	28mm Pipes. (LI) A&B 162 D 80	m	242		
86	32mm Pipes. (LI) A&B 35 D 65	m	100		
87	35mm Pipes. (LI) A&B 10 D 15	m	25		
88	40mm Pipes. (LI) D 15	m	15		
89	15mm Pipes chased into brickwork including brown paper lagging. (LI) A&B 101	m	101		
90	22mm Pipes chased into brickwork including brown paper lagging. (LI) A&B 78	m	78		
91	15mm Pipes (suspended) A&B 29	m	29		
92	22mm Pipes (suspended) A&B 40	m	40		
	Extra over Class 2 copper pipes for capillary fittings				
93	15mm Fittings (LI) A&B 42 D 30	No	72		
94	22mm Fittings (LI) A&B 35 D 20	No	55		
95	28mm Fittings (LI) A&B 10 D 20	No	30		
96	32mm Reducing coupling (LI) A&B 5 D 10	No	15		
97	32mm Adaptor coupling (LI) A&B 8 D 10	No	18		

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		Unit	Quantity	Rate	Amount
98	35mm Reducing coupling (LI)	No	10		
	A&B 5 D 5				
99	35mm Adaptor coupling (LI)	No	10		
	A&B 5 D 5				
100	35mm Bent adaptor coupling (LI)	No	8		
	A&B 3 D 5				
101	35mm Reducing adaptor coupling (LI)	No	35		
	A&B 15 D 20				
102	32mm Elbow (LI)	No	25		
	A&B 15 D 10				
103	35mm Elbow (LI)	No	22		
	A&B 12 D 10				
104	40mm Elbow (LI)	No	5		
	A&B 3 D 2				
105	32mm Tee (LI)	No	20		
	A&B 10 D 10				
106	35mm Tee (LI)	No	5		
	A&B 5				
107	40mm Tee (LI)	No	3		
	A&B 3				
108	32mm Reducing tee (LI)	No	11		
	A&B 5 D 6				
109	35mm Reducing tee (LI)	No	3		
	A&B 3				
110	40mm Reducing tee (LI)	No	4		
	A&B 2 D 2				
	<u>Extra over Class 2 copper pipes for brass compression fittings</u>				
111	15mm Fittings (LI)	No	95		
	A&B 55 D 40				
112	22mm Fittings (LI)	No	75		
	A&B 35 D 40				
113	28mm Fittings (LI)	No	32		
	A&B 12 D 20				
114	32mm Reducing coupling (LI)	No	18		
	A&B 8 D 10				
115	35mm Reducing coupling (LI)	No	18		
	A&B 8 D 10				
116	35mm Adaptor coupling (LI)	No	18		
	A&B 8 D 10				

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		Unit	Quantity	Rate	Amount
117	35mm Bent adaptor coupling (LI) A&B 5 D 5	No	10		
118	35mm Reducing adaptor coupling (LI) A&B 5 D 5	No	10		
119	32mm Elbow (LI) A&B 6 D 10	No	16		
120	35mm Elbow (LI) A&B 5 D 5	No	10		
121	40mm Elbow (LI) A&B 5 D 5	No	10		
122	32mm Tee (LI) A&B 10 D 12	No	22		
123	35mm Tee (LI) A&B 10 D 10	No	20		
124	40mm Tee (LI) A&B 5 D 5	No	10		
125	35mm Reducing tee (LI) A&B 5	No	5		
	<u>Flexible service pipes</u>				
126	15mm Service pipe 350mm girth (LI) A&B 5 D 10	No	15		
	<u>Testing</u>				
127	Testing water pipe system Item 1	Item			
	<u>ELECTRIC WATER HEATERS</u>				
	<u>"Kwikot" or equally approved electric water heaters:</u>				
128	Zip HydroBoil instant boiling water unit 5L white epoxy, Franke code 2610008, size 263x350x174mm A&B 1	No	1		
	<u>PIPE INSULATION</u>				
	<u>20mm Thick copper pipe insulation</u>				
129	Insulation to 35mm pipes including couplings (LI) A&B 5 D 5	m	10		
	<u>Extra over pipe insulation for insulation around</u>				
130	35mm Fittings, valves, etc. (LI) A&B 2 D 4	No	6		

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		Unit	Quantity	Rate	Amount
<u>SLEEVES</u>					
<u>PVC sleeves for pipes not exceeding 100mm diameter</u>					
131	Sleeve exceeding 250mm and not exceeding 500mm long	No	7		
	A&B 2 D 5				
<u>AS-BUILT DRAWINGS</u>					
132	Provision of as-built drawings	Item			
	Item 1				
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