

**MOEDWIL COMBINED SCHOOL****WET SERVICES - DRAINAGE****Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning, documentation, building tuning, project closeout and administrative requirements, and all works as necessary to provide a working product in accordance with the project
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the responsible engineer. Should no queries be raised the contract totals and rates provided shall be deemed sufficient for the due execution of the works in accordance with the engineers intent communicated through the project drawings and these specifications.
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention of the responsible engineer for clarification, failing which the provision of such items shall be deemed included in the project rates.
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals provided below.
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with the design intent and specifications. Rate includes the supply, delivery, labour and installation of equipment
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**BILL 1: PRELIMINARY & GENERALS**

<b>1</b>	<b>P&amp;Gs</b>	<b>Unit</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount</b>
1.1	Site Establishment	lot	1	R	R
1.2	Workshop Drawings	No	3	R	R
1.3	Builder's Works The Contractor shall make provision for sleeves, building wraps and all other supporting equipment to complete the installation.	lot			
1.4	OPERATING AND MAINTENANCE MANUALS The Contractor shall make provision for 4 x copies of O & M Manuals in accordance with the detail in the Standard	No	3	R	R
1.5	TRAINING OF CLIENTS STAFF The Contractor shall make provision for 1 full day's training of the Clients Staff, on the operation of the installation.	1	5	R	R
1.6	AS-BUILT LAYOUT DRAWINGS The Contractor shall make provision for a detailed set of As Fitted Layout drawings of the entire installation, as the project progresses.	No	3	R	R
1.7	COMMISSIONING AND TESTING The Contractor shall make provision to commission and pressure test the installation during construction	lot	1	R	R

1.8	MAINTENANCE AND GUARANTEE The Contractor shall make provision for 1 x Full years Maintenance and Guarantee of the entire installation. 11 x Standard Maintenance visits and 1 x Major service is required throughout the 12 months.	lot	12	R	R
1.9	External uPVC or HDPE pipework connection from site reticulation underground pipework to connect to internal copper	No	6	R	R
1.10	Contingency Amount: Included for the future unforeseen future changes.	lot			
1.11	Safety Manual to OHS and Construction regulations standard	lot	1	R	R
1.12	Programming of the works to meet the deadline dates	lot	1	R	R
<b>TOTAL CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

SEWER SERVICES - 2A BOYS BLOCK 1					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	18	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	8	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins and rinals.	No	9	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

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SEWER SERVICES - 2A BOYS BLOCK 2					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	18	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	8	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins and rinals.	No	9	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

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SEWER SERVICES - 2A BOYS BLOCK 4					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	18	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	8	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins and rinals.	No	9	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R



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SEWER SERVICES - 2A BOYS BLOCK 5					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	18	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	8	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins and rinals.	No	9	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

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## SEWER SERVICES - HOSTELS - 1A TYPE BOYS BLOCK 6

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	110	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	30	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	6	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	10	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins and urinals.	No	14	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	6	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	10	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL TYPE BLOCK 6 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

SEWER SERVICES - 2A BOYS BLOCK 7					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	18	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	8	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins and rinals.	No	9	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

[illegible]

SEWER SERVICES - 2A BOYS BLOCK 8					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	18	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	8	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins and rinals.	No	9	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

[illegible]



SEWER SERVICES - TV ROOM BLOCK C					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	8	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	76	R	R
1.1.3	50 mm $\phi$ piping to SANS 791 and SANS 967	m	3	R	R
1.1.4	40 mm $\phi$ piping to SANS 791 and SANS 967	m	40	R	R
1.1.5	32 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	11	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	2	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	6	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	15	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	6	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 40 mm 90° bend with IE	No	12	R	R
1.2.13	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.14	$\phi$ 40 mm aluminium pipe clip.brackets	No	20	R	R
1.2.15	$\phi$ 40 mm vent valve	No	2	R	R
1.2.14	$\phi$ 32 mm 90° plain bend	No	3	R	R
1.2.15	$\phi$ 32 mm 90° bend with IE	No	7	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	7	R	R
1.3.2	Connection to 110mm min sewer line	No	1	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basin and urinals.	No	7	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R
1.3.5	$\phi$ 40 mm S Trap for laboratory sink.	No	7	R	R
1.3.6	$\phi$ 40 mm P Trap for laboratory sink.	No	4	R	R
1.3.7	$\phi$ 110 mm Pan connector to toilet	No	5	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 9 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

## SEWER SERVICES - HOSTELS - 1A TYPE BOYS BLOCK 10

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	110	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	30	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	6	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	10	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins and urinals.	No	14	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	6	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	10	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL TYPE BLOCK 10 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

<b>SEWER SERVICES - HOSTELS - 1A TYPE BOYS BLOCK 11</b>					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	110	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	30	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	6	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	10	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins and urinals.	No	14	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	6	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	10	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL TYPE BLOCK 11 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

<b>SEWER SERVICES - HOSTELS - 1A TYPE BOYS BLOCK 12</b>					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	10	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	110	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	30	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	6	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	10	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins and urinals.	No	14	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	6	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	10	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL TYPE BLOCK 12 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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SEWER SERVICES - HOSTEL MASTER BLOCK 14					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	1	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	17	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	3	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	2	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	3	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	1	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm Y-junction 45°	No	4	R	R
1.2.5	$\phi$ 110 mm aluminium pipe clips.	No	5	R	R
1.2.6	$\phi$ 110 mm Access Point on SVP	No	1	R	R
1.2.7	$\phi$ 110 mm 45° Rodding eye	No	1	R	R
1.2.8	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.9	$\phi$ 40 mm 87,5° Junction	No	1	R	R
1.2.10	$\phi$ 40 mm aluminium pipe clip.brackets	No	2	R	R
1.2.11	$\phi$ 40 mm vent valve	No	1	R	R
1.2.12	$\phi$ 32 mm 90° plain bend	No	1	R	R
1.2.13	$\phi$ 32 mm 90° bend with IE	No	1	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	2	R	R
1.3.2	Connection to 110mm min sewer line	No	1	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basin.	No	1	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	1	R	R
1.3.5	$\phi$ 40 mm P Trap for sink.	No	1	R	R
1.3.6	$\phi$ 110 mm Pan connector to toilet	No	1	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 14 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

SEWER SERVICES - HOSTEL ADMINISTRATION BLOCK 15	

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SEWER SERVICES - STAFF HOUSE BLOCK 16					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	2	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	60	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	16	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	6	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	6	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	2	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	2	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	6	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	7	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm 45° Rodding eye	No	1	R	R
1.2.8	110 x 40 Eccentric Reducer	No	2	R	R
1.2.9	$\phi$ 40 mm 90° bend with IE	No	6	R	R
1.2.10	$\phi$ 40 mm 87,5° Junction	No	2	R	R
1.2.11	$\phi$ 40 mm aluminium pipe clip.brackets	No	5	R	R
1.2.12	$\phi$ 40 mm vent valve	No	2	R	R
1.2.14	$\phi$ 32 mm 90° plain bend	No	4	R	R
1.2.15	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	1	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basin and urinals.	No	4	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.5	$\phi$ 40 mm S Trap for wash troughs.	No	2	R	R
1.3.6	$\phi$ 40 mm bath traps	No	2	R	R
1.3.7	$\phi$ 110 mm Pan connector to toilet	No	2	R	R
1.3.8	$\phi$ 40 mm Shower Trap	No	2	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 16 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>



SEWER SERVICES - STAFF HOUSE BLOCK 17					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	2	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	60	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	16	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	6	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	6	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	2	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	2	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	6	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	7	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm 45° Rodding eye	No	1	R	R
1.2.8	110 x 40 Eccentric Reducer	No	2	R	R
1.2.9	$\phi$ 40 mm 90° bend with IE	No	6	R	R
1.2.10	$\phi$ 40 mm 87,5° Junction	No	2	R	R
1.2.11	$\phi$ 40 mm aluminium pipe clip.brackets	No	5	R	R
1.2.12	$\phi$ 40 mm vent valve	No	2	R	R
1.2.14	$\phi$ 32 mm 90° plain bend	No	4	R	R
1.2.15	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	1	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basin and urinals.	No	4	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.5	$\phi$ 40 mm S Trap for wash troughs.	No	2	R	R
1.3.6	$\phi$ 40 mm bath traps	No	2	R	R
1.3.7	$\phi$ 110 mm Pan connector to toilet	No	2	R	R
1.3.8	$\phi$ 40 mm Shower Trap	No	2	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 17 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

SEWER SERVICES - STAFF HOUSE BLOCK 18					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	2	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	60	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	16	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	6	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	6	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	2	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	2	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	6	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	7	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm 45° Rodding eye	No	1	R	R
1.2.8	110 x 40 Eccentric Reducer	No	2	R	R
1.2.9	$\phi$ 40 mm 90° bend with IE	No	6	R	R
1.2.10	$\phi$ 40 mm 87,5° Junction	No	2	R	R
1.2.11	$\phi$ 40 mm aluminium pipe clip.brackets	No	5	R	R
1.2.12	$\phi$ 40 mm vent valve	No	2	R	R
1.2.14	$\phi$ 32 mm 90° plain bend	No	4	R	R
1.2.15	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	1	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basin and urinals.	No	4	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.5	$\phi$ 40 mm S Trap for wash troughs.	No	2	R	R
1.3.6	$\phi$ 40 mm bath traps	No	2	R	R
1.3.7	$\phi$ 110 mm Pan connector to toilet	No	2	R	R
1.3.8	$\phi$ 40 mm Shower Trap	No	2	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 18 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

SEWER SERVICES - STAFF HOUSE BLOCK 19					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	2	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	60	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	16	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	6	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	6	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	2	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	2	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	6	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	7	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm 45° Rodding eye	No	1	R	R
1.2.8	110 x 40 Eccentric Reducer	No	2	R	R
1.2.9	$\phi$ 40 mm 90° bend with IE	No	6	R	R
1.2.10	$\phi$ 40 mm 87,5° Junction	No	2	R	R
1.2.11	$\phi$ 40 mm aluminium pipe clip.brackets	No	5	R	R
1.2.12	$\phi$ 40 mm vent valve	No	2	R	R
1.2.14	$\phi$ 32 mm 90° plain bend	No	4	R	R
1.2.15	$\phi$ 32 mm 90° bend with IE	No	4	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	1	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basin and urinals.	No	4	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.5	$\phi$ 40 mm S Trap for wash troughs.	No	2	R	R
1.3.6	$\phi$ 40 mm bath traps	No	2	R	R
1.3.7	$\phi$ 110 mm Pan connector to toilet	No	2	R	R
1.3.8	$\phi$ 40 mm Shower Trap	No	2	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 19 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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<b>SEWER SERVICES - HOSTELS - 1A Type GIRLS Block 21</b>					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	112	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	26	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	4	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	12	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	10	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	12	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 21 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

<b>SEWER SERVICES - HOSTELS - 1A Type GIRLS Block 22</b>					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	112	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	26	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	4	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	12	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	10	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	12	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 22 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

SEWER SERVICES - HOSTEL MASTER BLOCK 23					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	1	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	17	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	3	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	2	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	3	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	1	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm Y-junction 45°	No	4	R	R
1.2.5	$\phi$ 110 mm aluminium pipe clips.	No	5	R	R
1.2.6	$\phi$ 110 mm Access Point on SVP	No	1	R	R
1.2.7	$\phi$ 110 mm 45° Rodding eye	No	1	R	R
1.2.8	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.9	$\phi$ 40 mm 87,5° Junction	No	1	R	R
1.2.10	$\phi$ 40 mm aluminium pipe clip.brackets	No	2	R	R
1.2.11	$\phi$ 40 mm vent valve	No	1	R	R
1.2.12	$\phi$ 32 mm 90° plain bend	No	1	R	R
1.2.13	$\phi$ 32 mm 90° bend with IE	No	1	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	2	R	R
1.3.2	Connection to 110mm min sewer line	No	1	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basin.	No	1	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	1	R	R
1.3.5	$\phi$ 40 mm P Trap for sink.	No	1	R	R
1.3.6	$\phi$ 110 mm Pan connector to toilet	No	1	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL BLOCK 23 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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<b>SEWER SERVICES - HOSTELS - 1A Type GIRLS Block 25</b>					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	112	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	26	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	4	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	12	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	10	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	12	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL TYPE BLOCK 25 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

<b>SEWER SERVICES - HOSTELS - 16 Type GIRLS Block 26</b>					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	112	R	R
1.1.3	40 mm $\phi$ piping to SANS 791 and SANS 967	m	22	R	R
1.1.4	32 mm $\phi$ piping to SANS 791 and SANS 967	m	26	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	24	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	12	R	R
1.2.3	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	4	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	22	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	22	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	2	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	3	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	1	R	R
1.2.11	$\phi$ 110 Reducing junction with double access heel 87,5° 100 x 40	No	2	R	R
1.2.12	$\phi$ 110 Access double junction 100 x 40 90°	No	2	R	R
1.2.13	$\phi$ 40 mm 90° bend	No	10	R	R
1.2.14	$\phi$ 40 mm 90° plain bend with IE	No	12	R	R
1.2.15	$\phi$ 40 mm plain junction 87,5°	No	2	R	R
1.2.16	$\phi$ 40 mm brackets	No	6	R	R
1.2.17	$\phi$ 40 x 32 reducer	No	2	R	R
1.2.18	$\phi$ 40 mm brackets	No	12	R	R
1.2.19	$\phi$ 40 admittance air valve/vent valve	No	2	R	R
1.2.20	$\phi$ 32 mm 90° bend	No	8	R	R
1.2.21	$\phi$ 32 mm 90° bend with IE	No	4	R	R
1.2.22	$\phi$ 32 mm plain junction 87,5°	No	6	R	R
1.2.23	$\phi$ 32 mm brackets	No	18	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1					
1.3.2	Concrete gulley complete with gulley trap, head and grate with reducer 200x100mm	No	6	R	R
1.3.3	Connection to 110mm min sewer line	No	2	R	R
1.3.4	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	10	R	R
1.3.5	$\phi$ 32 mm End Female Cap	No	4	R	R
1.3.6	$\phi$ 40 mm Shower Trap	No	6	R	R
1.3.7	$\phi$ 40 mm S Trap for kitchen sink.	No	2	R	R
1.3.8	$\phi$ 110 mm Pan connector to toilet	No	12	R	R
<b>1.4</b>	<b>Sundries</b>	Sum	-	-	R
<b>TOTAL TYPE 1A GIRLS BLOCK 26 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

SEWER SERVICES - TYPE 2A GIRLS BLOCK 27					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	6	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	3	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	6	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

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SEWER SERVICES - TYPE 2A GIRLS BLOCK 28					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	6	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	3	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	6	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

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SEWER SERVICES - TYPE 2A GIRLS BLOCK 30					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	6	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	3	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	6	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R



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SEWER SERVICES - TYPE 2A GIRLS BLOCK 31					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>SEWER BILL OF QUANTITY</b>				
	Supply, erection & commissioning of complete drainage system acc to SANS 10252-2				
<b>1.1</b>	<b>SVP Piping</b>				
	Complete with all necessary supports and fittings to complete the installation. Above ground drainage: All Bends to be a type fitted with an inspection eye, and inspection chambers to be of steel manufacture.				
1.1.1	110 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
1.1.2	110 mm $\phi$ UG piping to SANS 791 and SANS 967	m	104	R	R
1.1.3	75 mm $\phi$ piping to SANS 791 and SANS 967	m	4	R	R
1.1.4	50 mm $\phi$ piping to SANS 791 and SANS 967	m	5	R	R
1.1.5	40 mm $\phi$ piping to SANS 791 and SANS 967	m	15	R	R
1.1.6	32 mm $\phi$ piping to SANS 791 and SANS 967	m	12	R	R
<b>1.2</b>	<b>SVP Fittings</b>				
	SVP Fittings. Fittings are to be fitted with deep seal traps.				
1.2.1	$\phi$ 110 mm 90° bend	No	12	R	R
1.2.2	$\phi$ 110 mm 90° bend with IE	No	5	R	R
1.2.3	$\phi$ 110 mm 90° bend with vent horn.	No	1	R	R
1.2.4	$\phi$ 110 mm 135° bend.	No	12	R	R
1.2.5	$\phi$ 110 mm Y-junction 45°	No	14	R	R
1.2.6	$\phi$ 110 mm Y-junction 45° with inspection eye.	No	1	R	R
1.2.7	$\phi$ 110 mm aluminium pipe clips.	No	20	R	R
1.2.8	$\phi$ 110 mm Access Point on SVP	No	2	R	R
1.2.9	$\phi$ 110 mm 45° Rodding eye	No	4	R	R
1.2.10	$\phi$ 110 mm saddle connector to fit 32mm pipe	No	5	R	R
1.2.11	$\phi$ 110 x 32 Eccentric Reducer	No	1	R	R
1.2.12	$\phi$ 110 mm Stub Stack with 2 way vent valve	No	2	R	R
1.2.13	$\phi$ 75 mm 90° bend	No	2	R	R
1.2.14	$\phi$ 75 mm 90° bend with IE	No	2	R	R
1.2.15	$\phi$ 75 mm junction 90°	No	3	R	R
1.2.16	$\phi$ 75 mm to $\phi$ 50 reducer junction 90°	No	3	R	R
1.2.17	$\phi$ 50 mm 90° bend	No	1	R	R
1.2.18	$\phi$ 50 mm junction 90°	No	4	R	R
1.2.19	$\phi$ 50 mm to $\phi$ 40 reducer junction 90°	No	2	R	R
1.2.20	$\phi$ 40 mm 90° plain bend	No	11	R	R
1.2.21	$\phi$ 40 mm 90° bend with IE	No	2	R	R
1.2.22	$\phi$ 40 mm 135° bend.	No	1	R	R
1.2.23	$\phi$ 40 mm 87,5° Junction	No	3	R	R
1.2.24	$\phi$ 40 mm aluminium pipe clip.brackets	No	12	R	R
1.2.25	$\phi$ 40 mm vent valve	No	3	R	R
1.2.26	$\phi$ 32 mm 90° plain bend	No	6	R	R
1.2.27	$\phi$ 32 mm 90° bend with IE	No	3	R	R
<b>1.3</b>	<b>General items</b>				
	General sewage equipment				
1.3.1	Concrete gully complete with gully trap, head and grate with reducer 200x100mm	No	4	R	R
1.3.2	Connection to 110mm min sewer line	No	2	R	R
1.3.3	$\phi$ 32 mm Bottle Trap for wash hand basins.	No	6	R	R
1.3.4	$\phi$ 32 mm End Female Cap	No	2	R	R

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MOEDWIL COMBINED SCHOOL		
ITEM	BILL NUMBER	Total: Amount
	<b>SUMMARY OF BILLS OF QUANTITIES</b>	
	<b>SEWER SERVICES</b>	
1	<b>BILL 1: PRELIMINARY &amp; GENERALS</b>	R
2	<b>BLOCK 1</b>	R
3	<b>BLOCK 2</b>	R
4	<b>BLOCK 3</b>	R
5	<b>BLOCK 4</b>	R
6	<b>BLOCK 5</b>	R
7	<b>BLOCK 6</b>	R
8	<b>BLOCK 7</b>	R
9	<b>BLOCK 8</b>	R
10	<b>BLOCK 9</b>	R
11	<b>BLOCK 10</b>	R
12	<b>BLOCK 11</b>	R
13	<b>BLOCK 12</b>	R
14	<b>BLOCK 13</b>	R
15	<b>BLOCK 14</b>	R
16	<b>BLOCK 15</b>	R
17	<b>BLOCK 16</b>	R
18	<b>BLOCK 17</b>	R
19	<b>BLOCK 18</b>	R
20	<b>BLOCK 19</b>	R

21	BLOCK 20	R
22	BLOCK 21	R
23	BLOCK 22	R
	BLOCK 23	R
	BLOCK 24	R
	BLOCK 25	R
	BLOCK 26	R
	BLOCK 27	R
	BLOCK 28	R
	BLOCK 29	R
	BLOCK 30	R
	BLOCK 31	R
	BLOCK 33	R
	BLOCK 34	R
	BLOCK M	R
TOTAL PHASE 2 SEWAGE		R



## Moedwil Combined School - Fire System BOQ

### Preliminaries to the Bill

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning, documentation, building tuning, project closeout and administrative requirements, and all works as necessary to provide a working product in accordance with the project performance criteria.
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the responsible engineer. Should no queries be raised the contract totals and rates provided shall be deemed sufficient for the due execution of the works in accordance with the engineers intent communicated through the project drawings and these specifications.
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention of the responsible engineer for clarification, failing which the provision of such items shall be deemed included in the project rates.
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals provided below.
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with the design intent and specifications. Rate includes the supply, delivery, labour and installation of equipment
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

### BILL 1: PRELIMINARY & GENERALS

		Unit	Quantity	Rate	Amount
1.1	Site Establishment	lot	1	R	R
1.2	Workshop Drawings	No	3	R	R
1.3	Builder's Works				
	The Contractor shall make provision for sleeves, building wraps and all other supporting equipment to complete the installation.	lot	-	R	R
1.4	OPERATING AND MAINTENANCE MANUALS				
	The Contractor shall make provision for 4 x copies of O & M Manuals in accordance with the detail in the Standard specification.	No	3	R	R
1.5	TRAINING OF CLIENTS STAFF				
	The Contractor shall make provision for 1 full day's training of the Clients Staff, on the operation of the installation.	1	5	R	R
1.6	AS-BUILT LAYOUT DRAWINGS				
	The Contractor shall make provision for a detailed set of As Fitted Layout drawings of the entire installation, as the project progresses.	No	3	R	R

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**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>GALVANIZED PIPING SYSTEM: (Above ground)</b>				
	<b>Galvanized Steel Pipe: (Surface Mounted)</b>				
	Galvanized steel pipe in accordance with SANS 62-1 Class MEDIUM installed complete with short lengths, cutting, screwed connections strictly in accordance with the Manufacturer's instructions, support brackets etc. Threading conforms to SABS 1109 (equivalent to ISO 7) Pipes are galvanized to EN 10240 or ISO 1461 as required All cold water pipes to be installed as per SANS 10252 regulations. Make all threaded pipe joints with approved cold water pipe jointing compound or Teflon tape. Provide flanged joints with gaskets. Flanges must be in accordance with BS10, Table F. Ream ends of pipes before fitting. Install pipework at a slight slope to avoid air entrapment. Install pipes in a neat and symmetrical manner. All piping must be pressure tested in the presence of the Department and the Department must carry out all inspections before backfilling takes place				
1.0	Fire Hose Reels				
	Supply and install and commission 30m Fire Hose reels as per the Fire Site layout drawing.	No	6	R	R
1.2	Fire Main Ring 100mm HPPE pipework including trenching Fire reticulation including trenching	Sum	2600	R	R
1.3	10KL Jojo Tanks mounted on steel Stab 200mm High for Fire	No	30	R	R
<b>2</b>	<b>FIRE EQUIPMENT</b>				
2.3	<b><u>FIRE HYDRANT OUTDOOR:</u></b>				
	All fire hydrants must conform to SANS 1128 - Part I.				

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	<b>HDPE Piping System: (Under ground buried)</b>				
	<b>HDPE Pipe: (Under ground buried)</b>				
	<p>HDPE pipe to SANS 4427 Part 2</p> <p>Material grade PE 100 and pressure rating PN 20</p> <p>Installed complete with cutting, strictly in accordance with the Manufacturer's instructions and SANS 4427</p> <p>Connections underground shall be busion or butt welded only.</p> <p>Supply pipe in 12 m (minimum) lengths.</p> <p>To ensure water tightness use butt-welded joints (SABS 0268 – Part 1) or electro-fusion welding (SABS 0268 – Part 2) where butt welding is not possible.</p> <p>No compression fittings are allowed except if in watertight manholes.</p> <p>All piping must be pressure tested in the presence of the Department and the Department must carry out all inspections before backfilling takes place.</p> <p>Prepare trenches and do backfilling and compacting in accordance with SANS 1200.</p>				
	Underground 110mm main fire ring networks including all bends, isolation valves, non return valves, air valves, strainers, reducing Tees to hydrants and fire hose connections as per the fire site layout drawings including trenching and backfilling	m	2200	R	R
	<b>HDPE Manholes</b>				
	<p>HDPE manholes: All material for HDPE manholes to conform to HDPE: Type PE 100 SABS ISO 4427 specifications and all welding to SABS 0268, SABS 0269, SABS method 1269, SABS 0270, SABS 1655 and SABS 1671. Manhole shafts to be structured or solid wall HDPE pipes with 8,0 kN/m2 ring stiffness or alternatively manufactured to same standard. HDPE pipes to be welded to manhole. Manhole to be similar</p> <p>to HDPE sewer manholes (detail TYPE NO DT 04/D) and welding details as per included detail (TYPE NO DT 20/SW).</p> <p>Complete with cover.</p>				
	<b>Booster connection</b>				
	Duplex full bore booster point with pressure gauge to SANS standard				
	Install complete booster connection	No	3	R	R
	<b>Storz Suction Hydrant Connection</b>				
	110mm Storz suction hydrant connection				
	Install complete suction hydrant connection	No	3	R	R
	<b>Trenching and Backfilling for hydrant main piping</b>				
	Trenching and backfilling for hydrant piping				
	Trenching and backfilling	m	1200	R	R



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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 1 TYPE 2A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R





### Preliminaries to the Bill

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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 2 TYPE 2A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]

This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.

All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, erection, painting, priming, sandblasting, grinding, welding, bolting, etc. Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the Employer immediately upon discovery. No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.

Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be the responsibility of the Contractor. All works required to execute the scope of works in accordance with the project program and quality requirements are included in the bill of materials. Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a complete and functional system. The bill of quantities shall not be used as the basis for material order. The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 4 TYPE 2A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 5 TYPE 2A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 6 TYPE 1A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R





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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 7 TYPE 2A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R



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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 8 TYPE 2A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]

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5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the  
6 All works required to execute the scope of works in accordance with the project program and quality requirements are  
7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a  
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[illegible]

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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 10 TYPE 1A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R

[illegible]



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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 11 TYPE 1A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R

[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 12 TYPE 1A BOYS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R

[illegible]

**Preliminaries to the Bill**

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 13 REFUSE AREA</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>	No	2	R	R
4	<b><u>Signage</u></b>				
	Signage to SANS standards for all fire requirements.				
4.1	Supply, delivery and installation of a wall mounted single sided 150mm module Red Photo Luminescent F13 Fire Hose and Extinguisher sign without a frame at the positions shown on the drawing.	No	1	R	R



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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 14 HOUSE MASTER</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	3	R	R

3	<b>Signage</b>				
	Signage to SANS standards for all fire requirements.				
3.1	Supply, delivery and installation of a wall mounted single				
	sided 150mm module Red Photo Luminescent F13 Fire				
	Extinguisher sign without a frame at the positions shown on				



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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 15 HOSTEL ADMIN</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
	<b>9 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
	Positioned in building	No	2	R	R

[illegible]

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- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 16 STAFF HOUSE</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>4,5 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R

[illegible]

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- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 17 STAFF HOUSE</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>4,5 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R



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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 18 STAFF HOUSE</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>4,5 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R





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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 19 STAFF HOUSE</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>4,5 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	2	R	R

[illegible]

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4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.  
5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the  
6 All works required to execute the scope of works in accordance with the project program and quality requirements are  
7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a  
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[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 21 TYPE 1A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]

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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 22 TYPE 1A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall
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- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 23 HOUSE MOTHER</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	3	R	R



3	<b>Signage</b>				
	Signage to SANS standards for all fire requirements.				
3.1	Supply, delivery and installation of a wall mounted single				
	sided 150mm module Red Photo Luminescent F13 Fire				
	Extinguisher sign without a frame at the positions shown on				

**Preliminaries to the Bill**

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- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 24</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>	No	3	R	R
4	<b><u>Signage</u></b>				
	Signage to SANS standards for all fire requirements.				
4.1	Supply, delivery and installation of a wall mounted single sided 150mm module Red Photo Luminescent F13 Fire Hose and Extinguisher sign without a frame at the positions shown on the drawing.	No	1	R	R

[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 25 TYPE 1A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R



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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 26 TYPE 1A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	2	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 27 TYPE 2A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b>FIRE HOSE REEL:</b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b>PORTABLE FIRE EXTINGUISHER:</b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R





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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 28 TYPE 2A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b>FIRE HOSE REEL:</b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b>PORTABLE FIRE EXTINGUISHER:</b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R



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[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 30 TYPE 2A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b>FIRE HOSE REEL:</b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b>PORTABLE FIRE EXTINGUISHER:</b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R



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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 31 TYPE 2A GIRLS</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b>FIRE HOSE REEL:</b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b>PORTABLE FIRE EXTINGUISHER:</b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.1	<b>4.5 kg CO2 Extinguisher complete with mounting board and hanging bracket</b>				
2.1.1	Positioned in building	No	1	R	R
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>				
2.2.1	Positioned in building	No	4	R	R

[illegible]



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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 33</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>	No	3	R	R
4	<b><u>Signage</u></b>				
	Signage to SANS standards for all fire requirements.				
4.1	Supply, delivery and installation of a wall mounted single sided 150mm module Red Photo Luminescent F13 Fire Hose and Extinguisher sign without a frame at the positions shown on the drawing.	No	1	R	R



**Preliminaries to the Bill**

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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be
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- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK 34 REFUSE AREA</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>	No	2	R	R
4	<b><u>Signage</u></b>				
	Signage to SANS standards for all fire requirements.				
4.1	Supply, delivery and installation of a wall mounted single sided 150mm module Red Photo Luminescent F13 Fire Hose and Extinguisher sign without a frame at the positions shown on the drawing.	No	1	R	R



**Preliminaries to the Bill - Fire Services BOQ**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1</b>	<b>GALVANIZED PIPING SYSTEM: (Above ground)</b>				
	<b>Galvanized Steel Pipe: (Surface Mounted)</b>				
	Galvanized steel pipe in accordance with SANS 62-1 Class MEDIUM installed complete with short lengths, cutting, screwed connections strictly in accordance with the Manufacturer's instructions, support brackets etc. Threading conforms to SABS 1109 (equivalent to ISO 7) Pipes are galvanized to EN 10240 or ISO 1461 as required All cold water pipes to be installed as per SANS 10252 regulations. Make all threaded pipe joints with approved cold water pipe jointing compound or Teflon tape. Provide flanged joints with gaskets. Flanges must be in accordance with BS10, Table F. Ream ends of pipes before fitting. Install pipework at a slight slope to avoid air entrapment. Install pipes in a neat and symmetrical manner. All piping must be pressure tested in the presence of the Department and the Department must carry out all inspections before backfilling takes place				
1.0	Fire Hose Reels				
	Supply and install and commission 30m Fire Hose reels as per the Fire Site layout drawing.	No	2	R	R
1.2	Fire Main Ring 100mm HPPE pipework including trenching Fire reticulation including trenching	m	2000	R	R
1.3	10KL Jojo Tanks mounted on steel Stab 200mm High for Fire	No	30	R	R
<b>3</b>	<b><u>FIRE PUMP ROOM</u></b>				
<b>3.1</b>	<b>Fire Pump</b>				
	Electric driven fire pump to NFPA/FM standards. Including NFPA electrical control panel. Pressure head of 40 meter and flow rate of 70 m <sup>3</sup> /h. Patterson Type Fire Pumps sets including including a jockey pump for the				
3.1.1	Complete installed and commissioned fire pump	No	3	R	R
<b>3.2</b>	<b>Fire Tank</b>				

	10KL Jojo Tanks mounted on steel Stab 2000mm High for Fire. Tanks shall be interconnected with valves points that could be opened in case of emergency.				
3.2.1	Complete installed fire tank	No	9	R	R
<b>3.3</b>	<b>Expansion tank</b>				
	Expansion tank of 200 liters rated at 600 kPa complete with 25NB Isolation valve. Pressure test certificate required. To be installed according to supplier requirements. Removable and replaceable heavy-duty butyl rubber bladder	No	3	R	R
3.3.1	Complete installed and commissioned expansion tank	No	2	R	R
<b>3.4</b>	<b>Pressure switch</b>				
	Pressure switch adjustable from 300kPa to 500 kPa range. Pressure switch shall control the pumps to alternate to the standby pump if the duty pump fails.				
3.4.1	Complete installed and commissioned pressure switch	No	3	R	R
<b>3.5</b>	<b>Pressure gauge</b>				
	100mm Diam Glycerine filled pressure gauge. 0 to 600 kPa range and working pressure at 400 kPa.				
3.5.1	Complete installed and commissioned pressure gauge	No	3	R	R
<b>4</b>	<b><u>Signage</u></b>				
	Signage to SANS standards for all fire requirements. This includes the entire site.				
4.1	Complete installed set of signage	No	1	R	R
	<b>HDPE Piping System: (Under ground buried)</b>				
	<b>HDPE Pipe: (Under ground buried)</b>				
	HDPE pipe to SANS 4427 Part 2 Material grade PE 100 and pressure rating PN 20 Installed complete with cutting, strictly in accordance with the Manufacturer's instructions and SANS 4427 Connections underground shall be fusion or butt welded only. Supply pipe in 12 m (minimum) lengths. To ensure water tightness use butt-welded joints (SABS 0268 – Part 1) or electro-fusion welding (SABS 0268 – Part 2) where butt welding is not possible. No compression fittings are allowed except if in watertight manholes. All piping must be pressure tested in the presence of the Department and the Department must carry out all inspections before backfilling takes place. Prepare trenches and do backfilling and compacting in accordance with SANS 1200.				



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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ABOVE THE GROUND EQUIPMENT - BLOCK M</b>				
1	<b>FIRE EQUIPMENT</b>				
	<b><u>FIRE HOSE REEL:</u></b>				
	Install non-swinging, rotary pattern type fire hose reels in the positions as indicated on the project drawings.				
	The fire hose reels must be complete with 30 m long, 20 mm diameter hose, hose run-out guide, clamps, nozzle bracket, fixing brackets and bolts, nozzle-cock and 25 mm stop valve all to conform to SANS 543. Fit rotary type cocks to the hose reels.				
	Provide hose reel bases with four bolt holes spaced and orientated as per SANS 543. Use bolts of at least 10 mm diameter and of a suitable length to fix the hose reel to the wall.				
	Hose reel components must be manufactured from the following components:				
	Water seal housing and spindle: In accordance with SANS 543				
	Fire hose: In accordance with SANS 543				
	Hose run out guide: Chromium plated steel				
	Base: Mild steel				
	Complete installed firehose reel	No	1	R	R
2	<b><u>PORTABLE FIRE EXTINGUISHER:</u></b>				
	Install portable fire extinguishers with steel bases in the positions indicated on the project drawings.				
	Portable fire extinguishers must be of the type as specified in the Project Specification in accordance with SANS 1 0400 and SANS 0105. CO2 Type: SANS 1567. Extinguishers must be in accordance with SANS 1910. Each fire extinguisher must be complete with a Meranti backing board, mounting brackets and suitable wall anchors. Mount the fire extinguishers with the handle 1,2m from finished floor level.				
2.2	<b>9 kg DCP Extinguisher complete with mounting board and hanging bracket</b>	No	3	R	R
4	<b><u>Signage</u></b>				
	Signage to SANS standards for all fire requirements.				
4.1	Supply, delivery and installation of a wall mounted single sided 150mm module Red Photo Luminescent F13 Fire Hose and Extinguisher sign without a frame at the positions shown on the drawing.	No	1	R	R



[illegible]

# MOEDWIL COMBINED SCHOOL

ITEM	BILL NUMBER	TOTAL AMOUNT
	<b>SUMMARY OF BILLS OF QUANTITIES</b> <b>FIRE SERVICES - FIRE SERVICES INSTALLATIONS</b>	
1	<b>PRELIMINARY &amp; GENERALS</b>	R
2	<b>SITE</b>	R
3	<b>BLOCK 1</b>	R
4	<b>BLOCK 2</b>	R
5	<b>BLOCK 3</b>	R
6	<b>BLOCK 4</b>	R
7	<b>BLOCK 5</b>	R
8	<b>BLOCK 6</b>	R
9	<b>BLOCK 7</b>	R
10	<b>BLOCK 8</b>	R
11	<b>BLOCK 9</b>	R
12	<b>BLOCK 10</b>	R
13	<b>BLOCK 11</b>	R
14	<b>BLOCK 12</b>	R
15	<b>BLOCK 13</b>	R
16	<b>BLOCK 14</b>	R
17	<b>BLOCK 15</b>	R
18	<b>BLOCK 16</b>	R
19	<b>BLOCK 17</b>	R
20	<b>BLOCK 18</b>	R
21	<b>BLOCK 19</b>	R

[illegible]

HVAC SYSTEM BOQ
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Preliminaries to the Bill
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- |   |  |
|---|--|
| 1 | This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.   |
| 2 | All works billed here shall include for the full scope of service specified including but not limited to supply,   |
| 3 | Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies   |
| 4 | No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.   |
| 5 | Errors and omissions of equipment or material required to execute the project solution specified or indicated  |
| 6 | All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals provided below. |
| 7 | Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required  |
| 8 | The bill of quantities shall not be used as the basis for material order.  |
| 9 | The values here shall be entered in South African Rands and exclusive of VAT.  |

<b>BILL 1: PRELIMINARY &amp; GENERALS</b>

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TOTAL Ps & Gs CARRIED FORWARD TO SUMMARY	R
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TOTAL Ps & Gs CARRIED FORWARD TO SUMMARY	R
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**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 1 - TYPE 2A BOYS HOSTEL</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]

**Preliminaries to the Bill**

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Boys Hostel - Block 2</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]



The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 3 CARRIED FORWARD TO SUMMARY	R
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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Boys Hostel - Block 4</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]

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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Boys Hostel - Block 5</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]

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- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Boys Hostel - Block 6</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R

[illegible]

**Preliminaries to the Bill**

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- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Boys Hostel - Block 7</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R



[illegible]

**Preliminaries to the Bill**

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- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Boys Hostel - Block 8</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

**Preliminaries to the Bill**

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- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Boys Hostel - Block 10</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R

[illegible]

**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Boys Hostel - Block 11</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R

[illegible]



**Preliminaries to the Bill**

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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Boys Hostel - Block 12</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R



This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.

Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the

Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention

All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals

Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with

The bill of quantities shall not be used as the basis for material order.

The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT

TOTAL BLOCK 14 CARRIED FORWARD TO SUMMARY	R
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Preliminaries to the Bill	
1	This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
2	All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
3	Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
4	No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
5	Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
6	All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
7	Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
8	The bill of quantities shall not be used as the basis for material order.
9	The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 16 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]



The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

**Preliminaries to the Bill**

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- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning, documentation,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the responsible
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention of
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with the
- 8 The bill of quantities shall not be used as the basis for material order.
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Girls Hostel - 21</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R

[illegible]

**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning, documentation,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the responsible
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention of the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with the
- 8 The bill of quantities shall not be used as the basis for material order.
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the followingHVAC systems as per the tender drawings and the standards**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Girls Hostel - 22</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

**Preliminaries to the Bill**

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- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning, documentation,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the responsible
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention of the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with the
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the standards**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Girls Hostel - 25</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R

[illegible]



**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning, documentation,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the responsible
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention of
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with the
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 1A Girls Hostel - 26</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	8	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
2.1	Xpelair Type XID200 (EF02) in-line duct fan c/w passive infrared sensor/controller , 195 l/s, 180 Pa.	No.	2	R	R
2.2	Type XID250 (EF03) in-line duct fan c/w passive infrared sensor/controller , 255 l/s, 180 Pa.	No	2	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø150 metal extract disk valves.	No	11	R	R
3.2	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
3.4	400 x 400 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01 and EF06).	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 200	m	3	R	R
4.2	150 x 200	m	0.75	R	R
4.3	150 x 250	m	2	R	R
4.4	200 x 200	m	1.35	R	R
4.5	200 x 250	m	1.5	R	R
4.6	250 x 200	m	0.9	R	R
4.7	250 x 250	m	3	R	R
4.8	300 x 200	m	1.35	R	R
4.9	300 x 250	m	2.7	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø150	No	11	R	R
5.2	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 200 - 150 x 200	No	1	R	R

[illegible]

**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Girls Hostel - Block 27</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]

**Preliminaries to the Bill**

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Girls Hostel - Block 28</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 29 CARRIED FORWARD TO SUMMARY	R
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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Girls Hostel - Block 30</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R



[illegible]

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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with
- 8 The bill of quantities shall not be used as the basis for material order.
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>Type 2A Girls Hostel - Block 31</b>				
<b>1.0</b>	<b>Wall Mounted Indoor Infrared Heater</b>				
	Supply, delivery and installation of an Eco Heat 1500W Wall Mounted Indoor Infrared Heater (Model 1C750W2) or approved equivalent.				
1.1	Type 1A Boys' Hostel	No.	13	R	R
<b>2</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grilles as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and 2 off sound attenuators as per the drawing layouts and specifications.				
2.1	Type XID250 (EF01) in-line duct fan c/w passive infrared sensor/controller , 300 l/s, 194 Pa, 157W	No	1	R	R
2.2	Ø500 (EF02) in-line duct fan c/w passive infrared sensor/controller , 490 l/s, 210 Pa, 1440 rpm, 0,4kW, 1,1A, 3P	No	1	R	R
<b>3</b>	<b>Air terminals</b>				
3.1	Ø200 metal extract disk valves.	No	14	R	R
3.3	350 x 350 Weather louvre c/w w.m.s. and wall box with transformation piece (EF01).	No	1	R	R
3.4	450 x 450 Weather louvre c/w w.m.s. and wall box with transformation piece (EF02)	No	2	R	R
<b>4</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
4.1	100 x 250	m	2.1	R	R
4.2	150 x 250	m	1	R	R
4.3	250 x 250	m	2	R	R
4.4	300 x 250	m	0.65	R	R
4.5	350 x 250	m	0.7	R	R
4.6	500 x 250	m	0.35	R	R
4.7	Ø200	m	17	R	R
<b>5</b>	<b>Uninsulated Spigots</b>				
5.1	Ø200	No	14	R	R
<b>6</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
6.1	100 x 250 - 150 x 250	No	2	R	R
6.2	150 x 250 - 250 x 250	No	2	R	R
6.3	250 x 250 - 300 x 250	No	1	R	R
6.4	250 x 250 - 350 x 250	No	1	R	R
6.5	350 x 250 - 500 x 250	No	1	R	R

[illegible]

**Preliminaries to the Bill**

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- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following HVAC systems as per the tender drawings and the**

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 32 - SPORTS</b>				
<b>1</b>	<b>Inline Duct Extraction Fans</b>				
	Supply and install Inline extraction fan for toilets with ductwork and grills as per layout in the drawings. The tender shall determine all the necessary fittings, bends, transformation pieces, stop ends, balancing dampers and constant volume air diffusers as per the drawing layouts and specifications.				
1.1	Type XID315 (EF02) in-line duct fan c/w passive infrared sensor/controller , 435 l/s, 90 Pa, 244W	No	2	R	R
<b>2</b>	<b>Air terminals</b>				
2.1	Ø150 metal extract disk valves.	No	6	R	R
2.1	Ø200 metal extract disk valves.	No	8	R	R
2.2	250 x 250 Type RA return air grille c/w OBD, plenum box and top entry spigot	No	2	R	R
2.3	450 x 200 Weather louvre c/w w.m.s. and wall box with transformation piece to suit.	No	2	R	R
<b>3</b>	<b>Ducting</b>				
	<b>Uninsulated metal Ducting</b>				
3.1	100 x 200	m	4.2	R	R
3.2	150 x 200	m	2.8	R	R
3.3	150 x 300	m	3.3	R	R
3.4	200 x 200	m	1.4	R	R
3.5	200 x 300	m	1.7	R	R
3.6	300 x 250	m	2	R	R
3.7	300 x 350	m	6.8	R	R
3.9	Ø150	m	3.2	R	R
3.9	Ø200	m	4.8	R	R
3.10	Ø250	m	1.6	R	R
<b>4</b>	<b>Uninsulated Spigots</b>				
4.1	Ø150	No	6	R	R
4.2	Ø200	m	8	R	R
4.3	Ø250	m	1	R	R
<b>5</b>	<b>Uninsulated Transformation Pieces (350mm)</b>				
5.1	100 x 200 - 150 x 200	No	4	R	R
5.2	150 x 200 - 200 x 200	No	2	R	R
5.3	150 x 200 - 300 x 250	No	2	R	R



**MOEDWIL COMBINED SCHOOL****SUMMARY OF BILLS OF QUANTITIES - HVAC**

ITEM	BILL NUMBER	Total: Amount
1	PRELIMINARY & GENERALS	R
2	BLOCK 1	R
3	BLOCK 2	R
4	BLOCK 3	R
5	BLOCK 4	R
6	BLOCK 5	R
7	BLOCK 6	R
8	BLOCK 7	R
9	BLOCK 8	R
10	BLOCK 9	R
11	BLOCK 10	R
12	BLOCK 11	R
13	BLOCK 12	R
14	BLOCK 14	R
15	BLOCK 15	R
16	BLOCK 16	R
17	BLOCK 17	R
18	BLOCK 18	R
19	BLOCK 19	R
20	BLOCK 20	R
21	BLOCK 21	R
22	BLOCK 22	R
23	BLOCK 23	R
24	BLOCK 25	R
25	BLOCK 26	R
26	BLOCK 27	R
27	BLOCK 28	R
28	BLOCK 29	R
29	BLOCK 30	R
30	BLOCK 31	R
31	BLOCK 32	R
32		
33		
TOTAL PHASE 2 HVAC EXCLUDING VAT		R

## MOEDWIL COMBINED SCHOOL

### Preliminaries to the Bill

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning, documentation, building tuning, project closeout and administrative requirements, and all works as necessary to provide a working product in accordance with the project performance criteria.
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the responsible engineer. Should no queries be raised the contract totals and rates provided shall be deemed sufficient for the due execution of the works in accordance with the engineers intent communicated through the project drawings and these specifications.
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention of the responsible engineer for clarification, failing which the provision of such items shall be deemed included in the project rates.
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals provided below.
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with the design intent and specifications. Rate includes the supply, delivery, labour and installation of equipment
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

### BILL 1: PRELIMINARY & GENERALS

		Unit	Quantity	Rate	Amount
1.1	Site Establishment	lot	1	R	R
1.2	Workshop Drawings	No	3	R	R
1.3	Builder's Works The Contractor shall make provision for sleeves, building wraps and all other supporting equipment to complete the installation.	lot	1	R	R
1.4	OPERATING AND MAINTENANCE MANUALS The Contractor shall make provision for 4 x copies of O & M Manuals in accordance with the detail in the Standard specification.	No	3	R	R
1.5	TRAINING OF CLIENTS STAFF The Contractor shall make provision for 1 full day's training of the Clients Staff, on the operation of the installation.	1	5	R	R
1.6	AS-BUILT LAYOUT DRAWINGS				
	The Contractor shall make provision for a detailed set of As Fitted Layout drawings of the entire installation, as the project progresses.	No	3	R	R
1.7	COMMISSIONING AND TESTING				

	The Contractor shall make provision to commission and pressure test the installation during construction	lot	1	-	R
1.8	MAINTENANCE AND GUARANTEE The Contractor shall make provision for 1 x Full years Maintenance and Guarantee of the entire installation. 11 x Standard Maintenance visits and 1 x Major service is required throughout the 12 months.	lot	12	R	R
1.9	External uPVC or HDPE pipework connection from site reticulation underground pipework to connect to internal copper pipework.	No	6	R	R
1.10	Contingency Amount: Included for the future unforeseen future changes.	lot	-	R	R
TOTAL CARRIED FORWARD TO SUMMARY					R



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- 9 The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 1 - TYPE 2A BOYS HOSTEL</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.4	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	2	R	R
1.9.3	outside dia 40	No	4	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
1.10.2	outside dia 25	No	1	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.5	Hostel Type 2A - Boys - Upper Primary - 2 x 17kW HP for both Sanitary and UFH	No	2	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.5	Type 2 Hostel Upper Primary Boys - 2x 2000L Tank linked to Heat Pump for Sanitary Use	No	1	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.1	Type 2A - Upper Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.5	Hostel Type 2A- Boys Upper Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and accessories. The tanks shall be installed on 200mm concrete platform with a tap for garden use connection				
3.5.10	Hostel Type 2A Boys-Upper Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 1 FORWARD TO SUMMARY</b>					<b>R</b>

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 2 - TYPE 2A BOYS HOSTEL</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.4	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	2	R	R
1.9.3	outside dia 40	No	4	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
1.10.2	outside dia 25	No	1	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.5	Hostel Type 2A - Boys - Upper Primary - 2 x 17kW HP for both Sanitary and UFH	No	2	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.5	Type 2 Hostel Upper Primary Boys - 2x 2000L Tank linked to Heat Pump for Sanitary Use	No	1	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.1	Type 2A - Upper Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.5	Hostel Type 2A- Boys Upper Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and accessories. The tanks shall be installed on 200mm concrete platform with a tap for garden use connection				
3.5.10	Hostel Type 2A Boys-Upper Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 2 FORWARD TO SUMMARY</b>					<b>R</b>



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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 3 - TV ROOM</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	10	R	R
1.1.2	outside dia 25	m	5	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	2	R	R
1.3.2	outside dia 25	No	2	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	2	R	R
1.4.2	outside diam 32 x 20	No	1	R	R

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	2	R	R
1.5.2	outside diam 32 x 20	No	1	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	5	R	R
1.6.2	outside dia 25	No	2	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	5	R	R
1.7.2	outside dia 25	No	3	R	R
1.7.3	outside dia 32	No	1	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	3	R	R
1.8.2	outside dia 25	No	3	R	R
1.8.3	outside dia 32	No	1	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	3	R	R
1.9.2	outside dia 25	No	3	R	R

[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 4 - TYPE 2A BOYS HOSTEL</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.4	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	2	R	R
1.9.3	outside dia 40	No	4	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
1.10.2	outside dia 25	No	1	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.5	Hostel Type 2A - Boys - Upper Primary - 2 x 17kW HP for both Sanitary and UFH	No	2	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.5	Type 2 Hostel Upper Primary Boys - 2x 2000L Tank linked to Heat Pump for Sanitary Use	No	1	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.1	Type 2A - Upper Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.5	Hostel Type 2A- Boys Upper Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and accessories. The tanks shall be installed on 200mm concrete platform with a tap for garden use connection				
3.5.10	Hostel Type 2A Boys-Upper Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 4 FORWARD TO SUMMARY</b>					<b>R</b>

**Preliminaries to the Bill**

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- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 5 - TYPE 2A BOYS HOSTEL</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.4	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	2	R	R
1.9.3	outside dia 40	No	4	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
1.10.2	outside dia 25	No	1	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.5	Hostel Type 2A - Boys - Upper Primary - 2 x 17kW HP for both Sanitary and UFH	No	2	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.5	Type 2 Hostel Upper Primary Boys - 2x 2000L Tank linked to Heat Pump for Sanitary Use	No	1	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.1	Type 2A - Upper Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.5	Hostel Type 2A- Boys Upper Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and accessories. The tanks shall be installed on 200mm concrete platform with a tap for garden use connection				
3.5.10	Hostel Type 2A Boys-Upper Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 5 FORWARD TO SUMMARY</b>					<b>R</b>

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT	
	<b>BLOCK 6 - TYPE 1A BOYS</b>						
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>						
<b>1.1</b>	<b>PP-R Pipe:</b>						
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2						
1.1.1	outside dia 20	m	120	R		R	
1.1.2	outside dia 25	m	40	R		R	
1.1.3	outside dia 40	m	20	R		R	
1.1.4	outside dia 50	m	10	R		R	
<b>1.2</b>	<b>Bends 90 deg</b>						
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2						
1.2.1	outside dia 20	No	80	R		R	
1.2.2	outside dia 25	No	30	R		R	
1.2.3	outside dia 32	No	20	R		R	
1.2.4	outside dia 40	No	15	R		R	
<b>1.3</b>	<b>Tee equal</b>						
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2						
1.3.1	outside dia 20	No	30	R	100.00	R	3 000.00
1.3.2	outside dia 25	No	15	R	120.00	R	1 800.00
1.3.3	outside dia 40	No	10	R	150.00	R	1 500.00
<b>1.4</b>	<b>Tee reducing</b>						

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.1	Hostel Type 1A - Boys - Upper Primary - 1 X 17kW HP for both Sanitary and UFH	No	1	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.1	Type 1A Hostel - Lower Primary Boys - 2000L Tank linked to Geyser for sanitary Boys	No	4	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.3	Type 1A - Lower Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.1	Hostel Type 1A- Boys Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and assesories. The tanks shall be installed on 200mm concrete platfrom with a tap for garden use connection				
3.5.1	Hostel Type 1A Boys-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 6 FORWARD TO SUMMARY</b>					<b>R</b>

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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 7 - TYPE 2A BOYS HOSTEL</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
				R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.4	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	2	R	R
1.9.3	outside dia 40	No	4	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
1.10.2	outside dia 25	No	1	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.5	Hostel Type 2A - Boys - Upper Primary - 2 x 17kW HP for both Sanitary and UFH	No	2	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.5	Type 2 Hostel Upper Primary Boys - 2x 2000L Tank linked to Heat Pump for Sanitary Use	No	1	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.1	Type 2A - Upper Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.5	Hostel Type 2A- Boys Upper Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and accessories. The tanks shall be installed on 200mm concrete platform with a tap for garden use connection				
3.5.10	Hostel Type 2A Boys-Upper Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 7 FORWARD TO SUMMARY</b>					<b>R</b>

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 8 - TYPE 2A BOYS HOSTEL</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.4	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	2	R	R
1.9.3	outside dia 40	No	4	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
1.10.2	outside dia 25	No	1	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.5	Hostel Type 2A - Boys - Upper Primary - 2 x 17kW HP for both Sanitary and UFH	No	2	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.5	Type 2 Hostel Upper Primary Boys - 2x 2000L Tank linked to Heat Pump for Sanitary Use	No	1	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.1	Type 2A - Upper Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.5	Hostel Type 2A- Boys Upper Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and accessories. The tanks shall be installed on 200mm concrete platform with a tap for garden use connection				
3.5.10	Hostel Type 2A Boys-Upper Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 8 FORWARD TO SUMMARY</b>					<b>R</b>

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 9 - TV ROOM</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	10	R	R
1.1.2	outside dia 25	m	5	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	2	R	R
1.3.2	outside dia 25	No	2	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	2	R	R
1.4.2	outside diam 32 x 20	No	1	R	R



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	2	R	R
1.5.2	outside diam 32 x 20	No	1	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	5	R	R
1.6.2	outside dia 25	No	2	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	5	R	R
1.7.2	outside dia 25	No	3	R	R
1.7.3	outside dia 32	No	1	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	3	R	R
1.8.2	outside dia 25	No	3	R	R
1.8.3	outside dia 32	No	1	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	3	R	R
1.9.2	outside dia 25	No	3	R	R

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1.10	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	2	R	R
1.10.2	outside dia 25	No	2	R	R
1.11	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	2	R	R
1.11.2	outside dia 25	No	1	R	R
1.12	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	2	R	R
1.13	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	10	R	R
1.13.2	outside dia 25	No	5	R	R
2	<b>EQUIPMENT</b>				
2.1	<b>Hot Water Heaters</b>				
2.1.1	10 litre underbasin electric water heater.	No	2	R	R
<b>TOTAL BLOCK 9 CARRIED FORWARD TO SUMMARY</b>					
					R

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 10 - TYPE 1A BOYS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.1	Hostel Type 1A - Boys - Upper Primary - 1 X 17kW HP for both Sanitary and UFH	No	1	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.1	Type 1A Hostel - Lower Primary Boys - 2000L Tank linked to Geyser for sanitary Boys	No	4	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.3	Type 1A - Lower Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.1	Hostel Type 1A- Boys Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and assesories. The tanks shall be installed on 200mm concrete platfrom with a tap for garden use connection				
3.5.1	Hostel Type 1A Boys-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 10 FORWARD TO SUMMARY</b>					<b>R</b>

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 11 - TYPE 1A BOYS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.1	Hostel Type 1A - Boys - Upper Primary - 1 X 17kW HP for both Sanitary and UFH	No	1	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.1	Type 1A Hostel - Lower Primary Boys - 2000L Tank linked to Geyser for sanitary Boys	No	4	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.3	Type 1A - Lower Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.1	Hostel Type 1A- Boys Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and assesories. The tanks shall be installed on 200mm concrete platfrom with a tap for garden use connection				
3.5.1	Hostel Type 1A Boys-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 11 FORWARD TO SUMMARY</b>					<b>R</b>

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- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 12 - TYPE 1A BOYS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	20	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>PIPING - GALVANIZED</b>				
<b>3</b>	<b>EQUIPMENT</b>				
<b>3.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
3.1.1	Hostel Type 1A - Boys - Upper Primary - 1 X 17kW HP for both Sanitary and UFH	No	1	R	R
<b>3.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
3.2.1	Type 1A Hostel - Lower Primary Boys - 2000L Tank linked to Geyser for sanitary Boys	No	4	R	R
<b>3.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
3.3.3	Type 1A - Lower Primary Boys- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>3.4</b>	<b>Recirculation Pumps</b>				
3.4.1	Hostel Type 1A- Boys Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>3.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and assesories. The tanks shall be installed on 200mm concrete platfrom with a tap for garden use connection				
3.5.1	Hostel Type 1A Boys-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL CARRIED BLOCK 12 FORWARD TO SUMMARY</b>					<b>R</b>

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6	All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 13 REFUSE AREA</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	15	R 8.00	R 120.00
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	12	R 60.00	R 720.00
<b>1.6</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside diam 25 x 20	No	1	R 130.00	R 130.00
1.6.2	outside diam 32 x 20	No	1	R 150.00	R 150.00
1.6.3	outside diam 32 x 25	No	1	R 150.00	R 150.00
1.6.4	outside diam 40 x 20	No	1	R 180.00	R 180.00
1.6.5	outside diam 40 x 25	No	1	R 180.00	R 180.00
1.6.6	outside diam 40 x 32	No	1	R 180.00	R 180.00
1.6.7	outside diam 50 x 20	No	1	R 200.00	R 200.00
1.6.8	outside diam 50 x 25	No	1	R 200.00	R 200.00
<b>1.7</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	30	R 48.00	R 1 440.00

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 14 - HOSTEL MASTER</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	28	R	R
1.1.2	outside dia 25	m	8	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	8	R	R
<b>1.5</b>	<b>Reducer concentric</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	3	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	4	R	R
1.6.2	outside dia 25	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	3	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	4	R	R
1.8.2	outside dia 25	No	8	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	1	R	R
1.9.5	outside dia 50	No		R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R

[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 16 - STAFF HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	28	R	R
1.1.2	outside dia 25	m	8	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	8	R	R
<b>1.5</b>	<b>Reducer concentric</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	3	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	4	R	R
1.6.2	outside dia 25	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	3	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	4	R	R
1.8.2	outside dia 25	No	8	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	1	R	R
1.9.5	outside dia 50	No		R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R

[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 16 - STAFF HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	28	R	R
1.1.2	outside dia 25	m	8	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	8	R	R
<b>1.5</b>	<b>Reducer concentric</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	3	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	4	R	R
1.6.2	outside dia 25	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	3	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	4	R	R
1.8.2	outside dia 25	No	8	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	1	R	R
1.9.5	outside dia 50	No	0	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R



[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 17 - STAFF HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	28	R	R
1.1.2	outside dia 25	m	8	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	8	R	R
<b>1.5</b>	<b>Reducer concentric</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	3	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	4	R	R
1.6.2	outside dia 25	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	3	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	4	R	R
1.8.2	outside dia 25	No	8	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	1	R	R
1.9.5	outside dia 50	No	0	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R

[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 18 - STAFF HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	28	R	R
1.1.2	outside dia 25	m	8	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	8	R	R
<b>1.5</b>	<b>Reducer concentric</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	3	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	4	R	R
1.6.2	outside dia 25	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	3	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	4	R	R
1.8.2	outside dia 25	No	8	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	1	R	R
1.9.5	outside dia 50	No		R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R

[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 19 - STAFF HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	28	R	R
1.1.2	outside dia 25	m	8	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	8	R	R
<b>1.5</b>	<b>Reducer concentric</b>				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	3	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	4	R	R
1.6.2	outside dia 25	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	3	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	4	R	R
1.8.2	outside dia 25	No	8	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	1	R	R
1.9.5	outside dia 50	No		R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R

[illegible]

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 20 - TV ROOM</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	10	R	R
1.1.2	outside dia 25	m	5	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	2	R	R
1.3.2	outside dia 25	No	2	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	2	R	R
1.4.2	outside diam 32 x 20	No	1	R	R

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	2	R	R
1.5.2	outside diam 32 x 20	No	1	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	5	R	R
1.6.2	outside dia 25	No	2	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	5	R	R
1.7.2	outside dia 25	No	3	R	R
1.7.3	outside dia 32	No	1	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	3	R	R
1.8.2	outside dia 25	No	3	R	R
1.8.3	outside dia 32	No	1	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	3	R	R
1.9.2	outside dia 25	No	3	R	R

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	2	R	R
1.10.2	outside dia 25	No	2	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	2	R	R
1.11.2	outside dia 25	No	1	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	2	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	10	R	R
1.13.2	outside dia 25	No	5	R	R
<b>2</b>	<b>EQUIPMENT</b>				
<b>2.1</b>	<b>Hot Water Heaters</b>				
2.1.1	10 litre underbasin electric water heater.	No	2	R	R
<b>TOTAL BLOCK 20 CARRIED FORWARD TO SUMMARY</b>					R

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 21 TYPE 1A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.6	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	0	R	R
1.9.3	outside dia 32	No	0	R	R
1.9.4	outside dia 40	No	4	R	R
1.9.5	outside dia 50	No	0	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>EQUIPMENT</b>				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>2.1</b>	<b>Heat Pumps</b>				
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
2.1.9	Hostel Type 1A - Girls - Lower Primary - 1*17kW HP for both Sanitary and UFH	No	1	R	R
<b>2.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
2.2.8	Type 1A Lower Primary - 2000L Tank linked to Geyser for sanitary Type 1A Lower Primary	No	1	R	R
<b>2.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
2.2.5	Type 1A - Lower Primary Girls- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>2.4</b>	<b>Recirculation Pumps</b>				
2.4.9	Hostel Type 1A- Girls Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>2.5</b>	<b>Rain Water Harvesting Tanks</b>				
2.5.14	Hostel Type 1A Girls-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTALBLOCK 21 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 22 TYPE 1A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.6	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	0	R	R
1.9.3	outside dia 32	No	0	R	R
1.9.4	outside dia 40	No	4	R	R
1.9.5	outside dia 50	No	0	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>EQUIPMENT</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>2.1</b>	<b>Heat Pumps</b>				
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
2.1.9	Hostel Type 1A - Girls - Lower Primary - 1*17kW HP for both Sanitary and UFH	No	1	R	R
<b>2.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
2.2.8	Type 1A Lower Primary - 2000L Tank linked to Geyser for sanitary Type 1A Lower Primary	No	1	R	R
<b>2.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
2.2.5	Type 1A - Lower Primary Girls- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>2.4</b>	<b>Recirculation Pumps</b>				
2.4.9	Hostel Type 1A- Girls Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>2.5</b>	<b>Rain Water Harvesting Tanks</b>				
2.5.14	Hostel Type 1A Girls-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTALBLOCK 22 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 23 - STAFF HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	28	R	R
1.1.2	outside dia 25	m	8	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	8	R	R
<b>1.5</b>	<b>Reducer concentric</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	3	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	4	R	R
1.6.2	outside dia 25	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	3	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	4	R	R
1.8.2	outside dia 25	No	8	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	1	R	R
1.9.5	outside dia 50	No	0	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R

[illegible]



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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 33 - GUARD HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	6	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	10	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	3	R	R
<b>1.4</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside dia 20	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1.7.1	outside dia 20	No	3	R	R
1.10	Isolating Valves:				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	1	R	R
1.11	Non return valves:				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	1	R	R
1.12	Strainers:				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	1	R	R
1.13	Thermaflex Pipe Insulation				
	Thermaflex insulation				
1.13.1	outside dia 20	No	0.5	R	R
2	EQUIPMENT				
2.1	Hot Water Heaters				
2.1.1	10 litre underbasin electric water heater.	No	1	R	R
<b>TOTAL BLOCK 33 CARRIED FORWARD TO SUMMARY</b>					
					R

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- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 25 TYPE 1A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.6	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	0	R	R
1.9.3	outside dia 32	No	0	R	R
1.9.4	outside dia 40	No	4	R	R
1.9.5	outside dia 50	No	0	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>EQUIPMENT</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>2.1</b>	<b>Heat Pumps</b>				
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
2.1.9	Hostel Type 1A - Girls - Lower Primary - 1*17kW HP for both Sanitary and UFH	No	1	R	R
<b>2.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
2.2.8	Type 1A Lower Primary - 2000L Tank linked to Geyser for sanitary Type 1A Lower Primary	No	1	R	R
<b>2.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
2.2.5	Type 1A - Lower Primary Girls- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>2.4</b>	<b>Recirculation Pumps</b>				
2.4.9	Hostel Type 1A- Girls Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>2.5</b>	<b>Rain Water Harvesting Tanks</b>				
2.5.14	Hostel Type 1A Girls-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTALBLOCK 25 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 26 TYPE 1A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.6	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 25	No	0	R	R
1.9.3	outside dia 32	No	0	R	R
1.9.4	outside dia 40	No	4	R	R
1.9.5	outside dia 50	No	0	R	R
1.9.6	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermafex Pipe Insulation</b>				
	Thermafex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2</b>	<b>EQUIPMENT</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>2.1</b>	<b>Heat Pumps</b>				
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
2.1.9	Hostel Type 1A - Girls - Lower Primary - 1*17kW HP for both Sanitary and UFH	No	1	R	R
<b>2.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
2.2.8	Type 1A Lower Primary - 2000L Tank linked to Geyser for sanitary Type 1A Lower Primary	No	1	R	R
<b>2.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
2.2.5	Type 1A - Lower Primary Girls- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>2.4</b>	<b>Recirculation Pumps</b>				
2.4.9	Hostel Type 1A- Girls Lower Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>2.5</b>	<b>Rain Water Harvesting Tanks</b>				
2.5.14	Hostel Type 1A Girls-Lower Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTALBLOCK 26 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 27 - TYPE 2A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 50	No	0	R	R
1.9.4	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2.1</b>	<b>Heat Pumps</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply install and commission Heat Pumps complete with flat plate solar collector recirculation pumps for solar system and solar system. Include 10mm of PP-R piping insulation, 2-off 20mm vacuum breakers, 15mm expansion relief valve, lever ball valves, mixing valve, temperature differential controller, hot water pipe insulation and truss strengthening where required. Units to be SANS 1037 and SANS 151 with Certificate. Carry a 10 Year warranty. Pressure rating of 400 kPa.				
2.1.8	Hostel Type 2A -Girls - Upper Primary - 2*17kW HP for both Sanitary and UFH	No	2	R	R
<b>2.2</b>	<b>Heat Pump and Geyser Tanks</b>				
	Supply and Install Hot Water Storage Tanks for Sanitary Use and Underflow Heatings as per the specifications				
2.2.7	Type 2A Upper Primary Girls - 2* 2000L Tank linked to Geyser for sanitary	No	1	R	R
<b>2.3</b>	<b>Solar panels</b>				
	Supply and install ITS Solar Panels 2.4m2 FT for the Heat Pump Systems				
2.2.4	Type 2A - Upper Primary Girls- solar panels, ITS 2.4m2 FT or equivalent	No	10	R	R
<b>2.4</b>	<b>Recirculation Pumps</b>				
2.4.8	Hostel Type 2A- Girls s Upper Primary - HP Hotwater Recirculation pumps and Solar Recirculation pump including , air release valve & loading valve	No	2	R	R
<b>2.5</b>	<b>Rain Water Harvesting Tanks</b>				
	Supply install and commission Rain Water harvesting tanks and assesories. The tanks shall be installed on 200mm concrete platfrom with a tap for garden use connection				
2.5.13	Hostel Type 2A Girls-Upper Primary - 5000L Jojo Tanks and Accessories with a tap to be used for garden services	No	1	R	R
<b>TOTAL BLOCK 27 CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 28 - TYPE 2A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 50	No		R	R
1.9.4	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2.1</b>	<b>Heat Pumps</b>				

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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 29 - TV ROOM</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	10	R	R
1.1.2	outside dia 25	m	5	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	8	R	R
1.2.2	outside dia 25	No	4	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	2	R	R
1.3.2	outside dia 25	No	2	R	R
<b>1.4</b>	<b>Tee reducing</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	2	R	R
1.4.2	outside diam 32 x 20	No	1	R	R

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	2	R	R
1.5.2	outside diam 32 x 20	No	1	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	5	R	R
1.6.2	outside dia 25	No	2	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	5	R	R
1.7.2	outside dia 25	No	3	R	R
1.7.3	outside dia 32	No	1	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	3	R	R
1.8.2	outside dia 25	No	3	R	R
1.8.3	outside dia 32	No	1	R	R
<b>1.9</b>	<b>Male adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	3	R	R
1.9.2	outside dia 25	No	3	R	R

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 30 - TYPE 2A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 50	No	0	R	R
1.9.4	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2.1</b>	<b>Heat Pumps</b>				



[illegible]

**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
- 9 The values here shall be entered in South African Rands and exclusive of VAT.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 31 - TYPE 2A GIRLS</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	120	R	R
1.1.2	outside dia 25	m	40	R	R
1.1.3	outside dia 40	m	20	R	R
1.1.4	outside dia 50	m	10	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	80	R	R
1.2.2	outside dia 25	No	30	R	R
1.2.3	outside dia 32	No	30	R	R
1.2.4	outside dia 40	No	15	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	30	R	R
1.3.2	outside dia 25	No	15	R	R
1.3.3	outside dia 40	No	10	R	R
<b>1.4</b>	<b>Tee reducing</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside diam 25 x 20	No	15	R	R
1.4.2	outside diam 32 x 20	No	5	R	R
<b>1.5</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.5.1	outside diam 25 x 20	No	20	R	R
1.5.2	outside diam 40 x 20	No	10	R	R
<b>1.6</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside dia 20	No	10	R	R
1.6.2	outside dia 25	No	10	R	R
1.6.3	outside dia 32	No	10	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.7.1	outside dia 20	No	10	R	R
1.7.2	outside dia 25	No	10	R	R
1.7.3	outside dia 32	No	6	R	R
<b>1.8</b>	<b>Female adaptor</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	16	R	R
1.8.2	outside dia 25	No	8	R	R
1.8.3	outside dia 32	No	6	R	R
1.8.4	outside dia 63	No	10	R	R
<b>1.9</b>	<b>Male adaptor</b>				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.9.2	outside dia 40	No	4	R	R
1.9.3	outside dia 50	No		R	R
1.9.4	outside dia 63	No	4	R	R
<b>1.10</b>	<b>Isolating Valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	50	R	R
<b>1.11</b>	<b>Non return valves:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	15	R	R
1.11.2	outside dia 25	No	10	R	R
<b>1.12</b>	<b>Strainers:</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.12.1	outside dia 20	No	10	R	R
1.12.2	outside dia 40	No	1	R	R
<b>1.13</b>	<b>Thermaflex Pipe Insulation</b>				
	Thermaflex insulation				
1.13.1	outside dia 20	No	80	R	R
1.13.2	outside dia 25	No	30	R	R
1.13.3	outside dia 32	No	30	R	R
<b>2.1</b>	<b>Heat Pumps</b>				

[illegible]

**Preliminaries to the Bill**

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- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 33 - GUARD HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	6	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	10	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	3	R	R
<b>1.4</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside dia 20	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				

[illegible]

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- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK 13 REFUSE AREA</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	15	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	12	R	R
<b>1.6</b>	<b>Reducer concentric</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.6.1	outside diam 25 x 20	No	1	R	R
1.6.2	outside diam 32 x 20	No	1	R	R
1.6.3	outside diam 32 x 25	No	1	R	R
1.6.4	outside diam 40 x 20	No	1	R	R
1.6.5	outside diam 40 x 25	No	1	R	R
1.6.6	outside diam 40 x 32	No	1	R	R
1.6.7	outside diam 50 x 20	No	1	R	R
1.6.8	outside diam 50 x 25	No	1	R	R
<b>1.7</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1.7.1	outside dia 20	No	30	R	R
1.8	Socket				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.8.1	outside dia 20	No	8	R	R
1.9	Female adaptor				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.9.1	outside dia 20	No	4	R	R
1.10	Male adaptor				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.10.1	outside dia 20	No	4	R	R
1.1	Isolating Valves:				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.11.1	outside dia 20	No	1	R	R
TOTAL CARRIED BLOCK 13 FORWARD TO SUMMARY					R

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- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a
- 8 The bill of quantities shall not be used as the basis for material order.
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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BLOCK M - GUARD HOUSE</b>				
<b>1</b>	<b>PIPING PP-R (Polypropolyne)</b>				
<b>1.1</b>	<b>PP-R Pipe:</b>				
	Hot and Cold Water Piping. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 2. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.1.1	outside dia 20	m	6	R	R
<b>1.2</b>	<b>Bends 90 deg</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.2.1	outside dia 20	No	10	R	R
<b>1.3</b>	<b>Tee equal</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.3.1	outside dia 20	No	3	R	R
<b>1.4</b>	<b>Union screwed</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				
1.4.1	outside dia 20	No	3	R	R
<b>1.7</b>	<b>Socket</b>				
	Electrofusion fitting. Polypropylene Random Co-Polymer (PPR) in accordance with SANS 15874 Part 3. Pressure rating SDR 7.4 or Pipe series S 3.2				

[illegible]

# MOEDWIL COMBINED SCHOOL

ITEM	BILL NUMBER	TOTAL AMOUNT
	<b>SUMMARY OF BILLS OF QUANTITIES</b> <b>WET SERVICES - WET SERVICES INSTALLATIONS</b>	
1	<b>PRELIMINARY &amp; GENERALS</b>	R
2	<b>BLOCK 1</b>	R
3	<b>BLOCK 2</b>	R
4	<b>BLOCK 3</b>	R
5	<b>BLOCK 4</b>	R
6	<b>BLOCK 5</b>	R
7	<b>BLOCK 6</b>	R
8	<b>BLOCK 7</b>	R
9	<b>BLOCK 8</b>	R
10	<b>BLOCK 9</b>	R
11	<b>BLOCK 10</b>	R
12	<b>BLOCK 11</b>	R
13	<b>BLOCK 12</b>	R
14	<b>BLOCK 13</b>	R
15	<b>BLOCK 14</b>	R
16	<b>BLOCK 15</b>	R
17	<b>BLOCK 16</b>	R
18	<b>BLOCK 17</b>	R
19	<b>BLOCK 18</b>	R
20	<b>BLOCK 19</b>	R
21	<b>BLOCK 20</b>	R

[illegible]

## MECHANICAL EQUIPMENT BOQ

Date:

Rev:

**Preliminaries to the Bill**

- 1 This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
- 2 All works billed here shall include for the full scope of service specified including but not limited to supply,
- 3 Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies
- 4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
- 5 Errors and omissions of equipment or material required to execute the project solution specified or indicated
- 6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals provided below.
- 7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required
- 8 The bill of quantities shall not be used as the basis for material order.
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**BILL 1: PRELIMINARY & GENERALS**

		Unit	Quantity	Rate	Amount
1.1	Site Establishment	lot	1	R	R
1.2	Workshop Drawings	No	3	R	R
1.3	Builder's Works The Contractor shall make provision for sleeves, building wraps and all other supporting equipment to complete the installation.	lot	1	-	R
1.4	OPERATING AND MAINTENANCE MANUALS The Contractor shall make provision for 4 x copies of O & M Manuals in accordance with the detail in the Standard specification.	No	3	R	R
1.5	TRAINING OF CLIENTS STAFF The Contractor shall make provision for 1 full day's training of the Clients Staff, on the operation of the installation.	1	5	R	R
1.6	AS-BUILT LAYOUT DRAWINGS The Contractor shall make provision for a detailed set of As Fitted Layout drawings of the entire installation, as the project progresses.	No	3	R	R
1.7	COMMISIONING AND TESTING The Contractor shall make provision to commission and pressure test the installation during construction	lot	1	R	R
1.8	MAINTENANCE AND GUARANTEE The Contractor shall make provision for 1 x Full years Maintenance and Guarantee of the entire installation. 11 x Standard Maintenance visits and 1 x Major service is required throughout the 12 months.	lot	12	R	R
1.9	Contingency Amount: Included for the future unforeseen future changes.	lot	1	-	R 50 000.00
<b>TOTAL Ps &amp; Gs CARRIED FORWARD TO SUMMARY</b>					<b>R</b>

The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 1 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 2 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 4 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 5 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 6 CARRIED FORWARD TO SUMMARY	R
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<b>Preliminaries to the Bill</b>	
1	This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
2	All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
3	Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
4	No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
5	Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention
6	All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
7	Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with
8	The bill of quantities shall not be used as the basis for material order.
9	The values here shall be entered in South African Rands and exclusive of VAT.

**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following Mechanical Equipment as per the tender**

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 10 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

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2 All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,  
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4 No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.  
5 Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention  
6 All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals  
7 Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with  
8 The bill of quantities shall not be used as the basis for material order.  
9 The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]



The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 16 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 17 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 18 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 19 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 21 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 22 CARRIED FORWARD TO SUMMARY	R
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<b>Preliminaries to the Bill</b>	
1	This Bill of Quantities forms part of the contract documents and is to be read in conjunction therewith.
2	All works billed here shall include for the full scope of service specified including but not limited to supply, delivery, installation, commissioning,
3	Quantities indicated here are to be verified by the contractor against the project drawings. All discrepancies shall be brought to the attention of the
4	No variation in rates shall be due based on variation in quantities, rate of exchange or escalation.
5	Errors and omissions of equipment or material required to execute the project solution specified or indicated on the drawings shall be brought to the attention
6	All works required to execute the scope of works in accordance with the project program and quality requirements are deemed included in the rates and totals
7	Rates provided shall include for fixing, hangers, fittings, transformations, sealant and all other items required to deliver a functional system in accordance with
8	The bill of quantities shall not be used as the basis for material order.
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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following Mechanical Equipment as per the tender**

[illegible]

The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]



The values here shall be entered in South African Rands and exclusive of VAT.

[illegible]

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**Supply including delivery and installation, testing and commissioning with 12 months maintenance of the following Mechanical Equipment as per the tender**

TOTAL BLOCK 28 CARRIED FORWARD TO SUMMARY	R
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The values here shall be entered in South African Rands and exclusive of VAT.

TOTAL BLOCK 31 CARRIED FORWARD TO SUMMARY	R
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	MECHANICAL EQUIPMENT TENDER BOQ	
Bill No.	Description	SUMMARY AMOUNT
1	Preliminary and General items	R
2	BLOCK 1	R
3	BLOCK 2	R
4	BLOCK 4	R
5	BLOCK 5	R
6	BLOCK 6	R
7	BLOCK 7	R
8	BLOCK 10	R
9	BLOCK 11	R
10	BLOCK 12	R
11	BLOCK 14	R
12	BLOCK 16	R
13	BLOCK 17	R
14	BLOCK 18	R
15	BLOCK 19	R
16	BLOCK 21	R

[illegible]