

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 1</u>			
<u>EARTHWORKS</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Site survey</u>			
A suitable survey of the natural ground levels of the site in a grid of grids is to be carried out by a registered land surveyor to the approval of the principal agent after clearing of the site and before commencement of excavations and filling. On completion of the works another grid survey of the final levels shall be carried out by a registered land surveyor to the approval of the principal agent. Costs relating to the surveys shall be borne by the contractor			
<u>Nature of ground</u>			
<u>NATURE OF GROUND</u>			
The Tenderer must acquaint himself with the nature of the material to be excavated.			

<u>Subterranean water</u>			
<u>User note:</u> <i>Choose one of the following typical examples:</i>			
No subterranean water is expected			
or			
The water table is expected to vary between approximately 2m and 3m below natural ground level. The removal of subterranean water is given separately			
or			
The trial holes indicate that the water table is at a maximum depth of approximately 1m. The removal of subterranean water is given separately			
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<u>BILL NO 1</u>			
<u>EARTHWORKS</u>			
<u>Robertson Fire Station</u>			

Material of a more difficult character

Should the contractor consider that any of the excavations are more difficult in character than excavations in "earth" he shall immediately notify the principal agent in writing. Failing such notification the excavations shall be deemed to be in "earth" and shall be measured and valued accordingly. The contractor may use any method he chooses to excavate any class of material, but his chosen method of excavation shall not determine the classification of the material excavated

Disposal of excavated material

All excavations shall be deemed to include disposal of excavated material by setting aside for use as filling or depositing on site within 100m of the perimeter of the building and spreading and levelling

Carting away of excavated material

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

Working space

Working space for formwork to sides of bases, ground beams, etc is measured with the assumption that it will be required by the principal agent in certain cases. If it is not required, it will be adjusted as such in the final account

Working space for formwork to sides of all concrete, except columns, has been measured only where the concrete face is less than 600mm from the face of the measured excavation

Working space for formwork to sides of columns has been measured for the width of the column face only where both: - the top of the column base is more than 1.5m below the commencing level of the excavations and - the column face is less than 600mm from the face of the measured excavations

No claim will be considered for any working space for formwork to concrete other than as above described or for working space beyond the sides of trench excavations for the building of masonry walls

Excavation for working space in rock

Excavation for working space in rock will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be

Filling

Prices for filling and backfilling shall include for all selection and any multiple handling of material

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BILL NO 1

EARTHWORKS

Robertson Fire Station

R

Filling and layer work materials

References such as "G1", "G2", etc and "C1", "C2", etc in descriptions of filling and layer work materials refer to corresponding references in the document "Guidelines for Road Construction Materials. TRH 14 : 1985" compiled by the Committee of State Road Authorities and the properties set out therein for each kind shall be applicable to the respective materials described hereinafter

User note: *When no information regarding density and other tests is available the following preamble in respect of testing may be inserted*

Testing

Prices for filling are to include for all necessary density and other tests

SITE CLEARANCE, ETC

User note: *Where the value is of significance, the removal of hedges etc shall be given separately in meters or in number*

Site clearance

- | | | |
|---|--|----|
| 1 | Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc | m2 |
|---|--|----|

REMOVAL OF TREES, ETC

Take out and remove, grub up roots and fill in holes compacted in not exceeding 300mm layers to 98% modified AASHTO density

- | | | |
|---|--|----|
| 2 | Tree stump exceeding 200mm and not exceeding 500mm girth | No |
| 3 | Tree stump exceeding 500mm and not exceeding 1000mm girth | No |
| 4 | Tree stump exceeding 1000mm and not exceeding 1500mm girth | No |

Cut down and remove, grub up roots and fill in holes compacted in not exceeding 300mm layers to 90% modified AASHTO density

- | | | |
|---|--|---|
| 5 | Hedge not exceeding 2000mm high | m |
| 6 | Hedge exceeding 2000mm and not exceeding 3000mm high | m |

Carried to Collection

BILL NO 1
EARTHWORKS
Robertson Fire Station

R

BULK EXCAVATION**Excavations in earth over sloping site**

7	Cut to fill in one operation not exceeding 2m deep including levelling, watering, etc, in layers not exceeding 150mm thick compacted to 95% Mod AASHTO density	m3
8	Cut to spoil in one operation including carting to site located by the contractor	m3
9	Cut to stockpile on site in one operation not exceeding 2m deep	m3
10	Stripping average 100mm thick layer of top soil and stockpiling on site	m2

BULK FILLING

11	Earth filling supplied by the contractor compacted to 98% Mod AASHTO density spread and levelled over site to form platforms	m3
12	G5 hardcore filling supplied by the contractor compacted to 98% Mod AASHTO density spread and over site to form platforms	m3

EXCAVATIONS OTHER THAN BULK**Excavations in earth not exceeding 2m deep**

13	Under floors to reduce levels	m3
14	Trenches	m3
15	Holes, including working around piles	m3

EXCAVATIONS IN STRATA OF A MORE DIFFICULT CHARACTER (PROVISIONAL)**Extra over bulk excavations in earth for excavations in**

16	Soft rock	m3
17	Hard rock	m3

Extra over trench and hole excavations in earth for excavations in

18	Soft rock	m3
19	Hard rock	m3

Carried to Collection**BILL NO 1****EARTHWORKS****Robertson Fire Station**

R

CARTING AWAY

Extra over all excavations for carting away

- | | | |
|----|--|----|
| 20 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor (Contractor must allow for bulking) | m3 |
|----|--|----|

RISK OF COLLAPSE

Risk of collapse of excavations

- | | | |
|----|--|----|
| 21 | Sides of bulk excavations not exceeding 1.5m deep | m2 |
| 22 | Sides of bulk excavations exceeding 1.5m deep | m2 |
| 23 | Sides of trench and hole excavations not exceeding 1.5m deep | m2 |
| 24 | Sides of trench and hole excavations exceeding 1.5m deep | m2 |

WORKING SPACE

Back excavations of vertical sides of excavations in earth not exceeding 500mm deep for working space, including backfilling compacted in not exceeding 200mm layers to 98% modified AASHTO density

- | | | |
|----|--|----|
| 25 | For placing and removing formwork to sides 300mm away from excavated faces | m2 |
|----|--|----|

Back excavations of vertical sides of excavations in earth exceeding 500mm and not exceeding 1.5m deep for working space, including backfilling compacted in not exceeding 200mm layers to 98% modified AASHTO density

- | | | |
|----|--|----|
| 26 | For placing and removing formwork to sides 300mm away from excavated faces | m2 |
|----|--|----|

SUNDRIES

Keeping excavations free of water

- | | | |
|----|---|------|
| 27 | Keeping excavations free of all water other than subterranean water | Item |
|----|---|------|

Dewatering

- | | | |
|----|---|------|
| 28 | Allow for a dewatering system for removal of seepage water and water from other subterranean sources in the excavations designed and executed by the contractor | Item |
|----|---|------|

Carried to Collection

R

BILL NO 1

EARTHWORKS

Robertson Fire Station

FILLING, ETC

Earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage exceeding 100m and not exceeding 200m from perimeter of excavations or stock piles, compacted in not exceeding 200mm layers to 98% modified AASHTO density

29	Over site	m3
30	Under floors, steps, etc	m3
31	Backfilling to trenches, holes, etc	m3

Earth filling supplied by the contractor, compacted in not exceeding 200mm layers to 98% modified AASHTO density

32	Over site	m3
33	Under floors, steps, pavings, etc	m3
34	Backfilling to trenches, holes, etc	m3

Imported G7 clean sand from commercial source in 150mm layers, carted on by contractor, in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density

35	To trenches	m3
36	Under surface beds	m3

Sand filling supplied by the contractor, compacted in not exceeding 200mm layers to 100% modified AASHTO density

37	Under floors, steps, etc	m3
38	Backfilling behind retaining walls	m3
39	In floor ducts	m3

Topsoil filling obtained from the excavations and/or prescribed stock piles on site

40	Over site	m3
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Carried to Collection

BILL NO 1
EARTHWORKS
Robertson Fire Station

R

LAYER WORK

Layer work supplied by the contractor

41	Subbase course over site to form platform of G5 material in accordance with SANS 1200 ME compacted to 98% modified AASHTO density	m3
42	Base course over site to form platform of G4 material in accordance with SANS 1200 MF and compacted to 98% modified AASHTO density	m3
43	Extra over for stabilisation with and including 4% Portland Blast Furnace cement	m3

COMPACTION

Compaction of surfaces

44	Compaction of ground surface over site for platform by wetting and compacting with 4 passes of a 10 ton vibratory roller	m2
45	Compaction of ground surface under floors, etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 98% modified AASHTO density	m2

WEED KILLERS, INSECTICIDES, ETC

Approved brand weedkiller mixed with water and applied at a rate of 100grams/m2

46	Under paving etc	m2
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Insecticides

47	Under floors, etc, including forming and poisoning V-grooves along foundation walls, etc, filling in and ramming	m2
48	To bottoms and sides of trenches, etc	m2

TESTS

Prescribed density tests on filling

49	Modified AASHTO density test	No
50	Natural California bearing ratio test	No
51	Road indicator test	No
52	Field density test, including optimum moisture content (four readings per test)	No

Carried to Collection

BILL NO 1

EARTHWORKS

Robertson Fire Station

R

53 Troxler tests from a SANS accredited soil test laboratory and a report indicating the MOD AASHTO of the clean sand backfill before casting surface beds for the approval by the engineer

No

54 DCP Tests

No

Carried to Collection

R

BILL NO 1
EARTHWORKS
Robertson Fire Station

BILL NO 1

EARTHWORKS

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

1
2
3
4
5
6
7
8

Carried to Summary

R

BILL NO 1
EARTHWORKS
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 2</u>			
<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Breeze concrete</u>			
Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (12:1). The ash graded up to particles which will pass a 16.5mm ring from a minimum which fails to pass a 4.75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated			
<u>Cost of tests</u>			
The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SANS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)			
<u>Formwork</u>			
Description of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use			
The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself			
Formwork to soffits of solid slabs shall be deemed to be for slabs not exceeding 250mm thick unless otherwise described			
Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1.5m and not exceeding 3.5m high unless otherwise described			
<u>Carried to Collection</u>		R	
<u>BILL NO 2</u>			
<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			
<u>Robertson Fire Station</u>			

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

Forming of concrete by sliding / climbing formwork

The unit of measurement shall be the square metre area of walls formed by sliding / climbing formwork (openings not deducted). The quantity measured shall be the perimeter of walls, inside and outside, multiplied by the actual height of each structure formed by the sliding / climbing technique. Rates are to include for all rounded corners, angles, etc as detailed on the drawings

The tendered rate shall include full compensation for the forming of concrete by sliding / climbing formwork, complete as specified and for the remedial treatment of concrete surfaces. The rate shall also include jacking rods and spacer ladders as deemed to be necessary to complete the complete sliding / climbing construction

The tendered rate shall include full compensation for all cost involved in erecting, sliding / climbing and dismantling of the complete sliding / climbing formwork assembly

Carried to Collection

BILL NO 2

CONCRETE, FORMWORK AND REINFORCEMENT

Robertson Fire Station

R

MASS CONCRETE**15MPa/13mm concrete**

1	Mass concrete in cavity walls	m3
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20MPa/19mm concrete

2	Mass Concrete	m3
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**REINFORCED CONCRETE CAST AGAINST
EXCAVATED SURFACES****30MPa/19mm concrete**

3	Strip footings	m3
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4	Bases	m3
---	-------	----

REINFORCED CONCRETE CAST IN FORMWORK**30MPa/19mm concrete**

5	Strip footings	m3
---	----------------	----

6	Bases	m3
---	-------	----

7	Surface beds cast in panels on waterproofing	m3
---	--	----

8	Ramps on waterproofing	m3
---	------------------------	----

9	Isolated beams	m3
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CONCRETE SUNDRIES**Curing surfaces of concrete with approved curing
compound**

10	Horizontal surfaces	m2
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11	Vertical surfaces	m2
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**Powerfloat surface treatment to finished face of concrete
as per Architects finishing schedule on drawing RFS/21
602 TEN**

12	Surface beds, slabs, etc	m2
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13	Surface beds, slabs, etc to falls	m2
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14	Tops of beams, walls, etc	m2
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BILL NO 2**CONCRETE, FORMWORK AND REINFORCEMENT****Robertson Fire Station**

R

ROUGH FORMWORK

Rough formwork to sides

27	Bases	m2
28	Strip footings	m2

SMOOTH FORMWORK

Smooth formwork to sides

29	Edges, risers, ends and reveals not exceeding 300mm high or wide	m
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Supporting bearers to prefabricated beams

30	Bearers	m
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Smooth formwork to sides and soffits

31	Beams	m2
32	Beams at edges of post-tensioning slabs	m2
33	Beams propped up exceeding 3.5m and not exceeding 5m high	m2
34	Sloping beams	m2

MOVEMENT JOINTS, ETC

Two layers of 375 micron "Gundle Brikgrip DPC" in slip joints between horizontal concrete and masonry surfaces, including cement mortar bed

35	Exceeding 300mm wide	m2
36	Not exceeding 300mm wide	m

Movement joints with "Jointex" between vertical concrete and masonry surfaces

37	10mm Joints exceeding 300mm high or wide	m2
38	10mm Joints not exceeding 300mm high or wide	m

Jointex or other approved closed cell expanded polyethylene pre-formed filler including necessary blocking piece for tearing out later

39	10mm Thick between brickwork and concrete not exceeding 300mm high or wide	m
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Carried to Collection

BILL NO 2

CONCRETE, FORMWORK AND REINFORCEMENT

Robertson Fire Station

R

BILL NO 2

CONCRETE, FORMWORK AND REINFORCEMENT

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

10
11
12
13
14
15
16

Carried to Summary

R

BILL NO 2

CONCRETE, FORMWORK AND REINFORCEMENT
Robertson Fire Station

<u>Item No</u>		<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
	<u>BILL NO 3</u>			
	<u>PRECAST CONCRETE</u>			
	For preambles see "Model Preambles for Trades"			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Sizes</u>			
	Blocks, sills, etc measured linear shall be made in suitable lengths. Large size setting out drawings shall be prepared where necessary and submitted to the principal agent for approval before moulds are made			
	<u>General</u>			
	Where kerbstones, blocks, etc are laid in ground, descriptions shall be deemed to include necessary excavation, filling in and ramming			
	<u>PRECAST CONCRETE SLABS</u>			
	<u>Precast concrete slabs</u>			
1	Precast hollow core concrete slab designed and supplied as per engineer specifications complete as per drawing PS2006_21 102 by specialist	No		
	<u>PRECAST CONCRETE STAIRS</u>			
	<u>Precast concrete stairs</u>			
2	Precast concrete stairs designed and supplied as per engineer specifications complete as per drawing PS2006_21 102 by specialist	No		
	<u>COPINGS, SILLS, ETC</u>			
	<u>"OLD WORLD CONCRETE" similar approved</u>			
3	Coping "Driptsone 270 B" 310mm wide and 100mm high overall sloping to one side complete	m		
	<u>JOINT SEALANTS, JOINTING STRIPS, ETC</u>			
	<u>Joint sealants</u>			
4	Polyurethane sealing compound in 12mm wide joints between units, including backing cords, bond breaker, primer, etc	m		
	<u>Carried to Summary</u>		R	
	<u>BILL NO 3</u>			
	<u>PRECAST CONCRETE</u>			
	<u>Robertson Fire Station</u>			

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 4</u>			
<u>MASONRY</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>BRICKWORK</u>			
NOTE			
Loadbearing brick and blockwork: minimum crushing strength = 14 MPa unless otherwise shown. All other brickwork & blockwork: minimum crushing strength = 7 MPa			
<u>Hollow walls</u>			
Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course and above lintels of the external skin open as a weep hole			
<u>Lintels</u>			
Lintels shall bear at least 250mm onto adjacent walling. Where such bearing cannot be obtained due to the proximity of adjacent openings the lintel shall be continuous			
<u>Pointing</u>			
Descriptions of recessed pointing to fair face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc			
<u>FACE BRICKWORK</u>			
<u>General</u>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<u>Pointing</u>			
Descriptions of recessed pointing to face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc			
<u>Carried to Collection</u>			R
<u>BILL NO 4</u>			
<u>MASONRY</u>			
<u>Robertson Fire Station</u>			

BLOCKWORK

Blockwork

Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course and above lintels of the external skin of hollow walls shall be left open as a weep hole

Standard complementary blocks

Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary

Linings to concrete

Descriptions of linings to concrete, unless otherwise described, shall be deemed to include single wire type wall ties

Wall ties for blockwork

Wall ties shall be polypropylene "Permaties" complying with BS 76377. Ties for hollow walls shall be deemed to be included in the descriptions of hollow walls and shall be of sufficient length to allow not less than 75mm of each end to be built into the blockwork. Ties shall be spaced at intervals of not more than 1m in the horizontal direction and not more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other

Pointing

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

SAMPLES

Samples of all masonry building units, except those for walls described as "load bearing", shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site

Carried to Collection

BILL NO 4

MASONRY

Robertson Fire Station

R

MISCELLANEOUS

Bagging of masonry surfaces

Bagging of masonry surfaces shall be of the mortar as described rubbed onto surfaces with hessian cloth to provide a fair finish. The finished surface shall be free of penetrations or pitted openings or large protruding lumps of mortar. The finish shall be to the principal agent's approval

Decorative blocks

Blocks shall be of approved manufacture, sound, well burnt or cured and uniform and true in size, shape and colour

"Winblok" modular precast concrete window surrounds

Window surrounds shall be built into masonry walls and pointed all round on both sides with 10 x 10mm square recessed joints. Prices shall include for building in as single units or combinations in patterns of two or more window units and for bedding solid all round in mortar and pointing. **Note** : Aluminium infill windows, glazing and pointing with sealing compound are measured elsewhere

MASS BRICKWORK

MASS BRICKWORK IN FOUNDATIONS

1	Piers	m3
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BRICKWORK

FOUNDATIONS

Load bearing Brickwork of extra hard burnt clay bricks in class I mortar

2	230mm One brick walls in foundations	m2
3	280mm Hollow walls of two 110mm skins in foundations	m2

SUPERSTRUCTURE

Brickwork of common clay bricks

4	Mass brickwork	m3
5	L-shaped piers	m3
6	T-shaped piers	m3
7	110mm Walls	m2

Carried to Collection

BILL NO 4

MASONRY

Robertson Fire Station

R

8	110mm Walls in beamfilling	m2			
9	110mm Linings to concrete	m2			
10	110mm Linings 50mm away from concrete	m2			
11	280mm Hollow walls of two 110mm skins	m2			
	<u>Hit and miss brick screens</u>				
12	110mm wide "Hit and miss" brickwork including high water resistant bricks, all to architect's approval.	m2			
	<u>Brickwork of extra hard burnt clay bricks in class I mortar in loadbearing walls</u>				
13	110mm Walls	m2			
14	230mm Walls	m2			
15	280mm Hollow walls of two 110mm skins	m2			
	<u>BRICKWORK SUNDRIES</u>				
	<u>Sundries</u>				
16	110mm brick on end	m			
17	300 x 300mm Vertical flues in brickwork, including rendering smooth in mortar	m			
18	300 x 300mm Raking flues in brickwork, including rendering smooth in mortar	m			
19	Splayed mortar fillets one course high in 60mm cavities	m			
20	Splayed mortar fillets two courses high in 60mm cavities	m			
21	Closing 60mm cavities of hollow walls vertically with brickwork 110mm wide	m			
22	Closing 60mm cavities of hollow walls horizontally with one course of brickwork	m			
23	Closing 60mm cavities of hollow walls horizontally with two courses of brickwork	m			
24	Closing 60mm cavities at raking tops of hollow walls with two courses of brickwork	m			
	<u>Carried to Collection</u>				
	<u>BILL NO 4</u>				
	<u>MASONRY</u>				
	<u>Robertson Fire Station</u>				

Extra over normal brickwork for fair face finish in horizontal stretcher bond pointing, jointing etc. complete as per Architect's specifications

25 To walls m2

26 110mm Walls faced both sides m2

Joint forming material in movement joints, etc

27 12mm Bitumen impregnated fibre board between skins m2

28 10mm Expanded polystyrene (density 16kg/m3) between skins m2

29 50mm Expanded polystyrene (density 16kg/m3) between skins m2

30 12mm Bitumen impregnated fibre board 110mm wide in walls m

31 10mm Expanded polystyrene (density 16kg/m3) 110mm wide in walls m

32 10mm "Jointex" 110mm wide with one tear-off strip in walls m

33 10mm "Jointex" 230mm wide with one tear-off strip in walls m

Galvanized brickwork reinforcement

34 75mm Wide reinforcement built in horizontally m

35 150mm Wide reinforcement built in horizontally m

Prestressed concrete fabricated lintels

36 110 x 70mm Lintels in lengths not exceeding 3m m

37 110 x 70mm Lintels in lengths exceeding 3m and not exceeding 4.5m m

38 150 x 70mm Lintels in lengths not exceeding 3m m

39 150 x 70mm Lintels in lengths exceeding 3m and not exceeding 4.5m m

40 110mm Wide turning pieces to lintels m

Turning pieces

41 230mm Wide turning pieces to lintels m

MISCELLANEOUS

BAGGING

Carried to Collection

BILL NO 4

MASONRY

Robertson Fire Station

R

Bagging of masonry surfaces with 1:3 cement and sand mixture

42

On walls

m2

Carried to Collection

BILL NO 4
MASONRY
Robertson Fire Station

R

SILLS, COPINGS, ETC

Brick Sills

43 Single cant brick on end sill pointed on all exposed surfaces m

"Nutech" natural grey sills in single lengths bedded in class I mortar, including metal fixing lugs, etc

44 150 x 15mm Wide sills set flat and slightly projecting m

45 175 x 15mm Wide sills set sloping and slightly projecting m

SUNDRIES

Galvanised wire ties

46 4mm Diameter roof tie 2m girth bent double with one end built into brickwork and other end fixed to timber No

47 4mm Diameter roof tie 2m girth bent double with one end cast into concrete and other end fixed to timber No

Galvanised hoop iron cramps, ties, etc

48 40 x 1.6mm "Tibond" wall tie strips shot pinned to concrete and with ties bent out and built into masonry m

49 30 x 1.6mm Cramp 500mm long with one end fixed to wood and other end built into masonry No

50 30 x 1.6mm Wall tie 500mm long with one end shot pinned to concrete, masonry or steel and other end built into masonry No

51 30 x 1.6mm Roof tie 1.5m long with one end built into masonry and other end fixed to timber No

52 30 x 1.6mm Roof tie 1.5m long with one end cast into concrete and other end fixed to timber No

53 32 x 1.6mm Roof tie 1.5m long with one end cast into concrete and other end fixed to timber No

54 30 x 1.6mm Ceiling hanger 1m long with one end shot pinned to concrete or steel and other end fixed to timber No

Wall bonding ties

55 70mm Wide "Mentis Mentex 130" expanded metal wall bonding tie 700mm girth built horizontally into masonry at wall intersections, construction joints, etc, with ends bent up No

Carried to Collection

BILL NO 4

MASONRY

Robertson Fire Station

R

BILL NO 4

MASONRY

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

19
20
21
22
23
24
25

Carried to Summary

R

BILL NO 4
MASONRY
Robertson Fire Station

<u>Item No</u>		<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
	<u>BILL NO 5</u>			
	<u>WATERPROOFING</u>			
	For preambles see "Model Preambles for Trades"			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Waterproofing</u>			
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee by an approved applicator all in accordance with the manufacturer's specifications. Waterproofing to floors, roofs, etc shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs			
	<u>DAMPPROOFING OF WALLS AND FLOORS</u>			
	<u>One layer 375 micron approved embossed damp proof course</u>			
1	In walls	m2		
	<u>One layer 250 micron approved waterproof sheeting sealed at laps</u>			
2	Under surface beds	m2		
3	Vertically between walls	m2		
	<u>Two coats "Flintkote Type 5" bitumen emulsion waterproof coating to</u>			
4	Concrete floors	m2		
5	Masonry walls	m2		
6	Bagged walls	m2		
	<u>Two coats "Brixeal" bitumen emulsion waterproof coating to</u>			
7	Concrete floors	m2		
8	Concrete walls, columns and beams	m2		
	<u>Carried to Collection</u>		R	
	<u>BILL NO 5</u>			
	<u>WATERPROOFING</u>			
	<u>Robertson Fire Station</u>			

BILL NO 5

WATERPROOFING

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

27

28

Carried to Summary

R

BILL NO 5
WATERPROOFING
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 6</u>			
<u>ROOF COVERINGS, CLADDINGS, ETC</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Straight cutting</u>			
Descriptions of all roof coverings shall be deemed to include for all straight cutting			
<u>Profiled metal, fibre-cement, etc sheeting and accessories</u>			
Profiled metal, fibre-cement, etc sheeting and accessories shall be fixed strictly in accordance with the manufacturer's instructions			
<u>Profiled fibre-cement sheeting and accessories</u>			
Sheeting and accessories shall be secured to wood purlins with 6mm galvanised drive screws of appropriate length and to steel purlins with 6mm galvanised hook bolts of appropriate length and nuts. Each fixing screw or bolt shall be fitted with one "Everseal" combination steel cup and PVC washer system			
<u>Carried to Collection</u>			R
<u>BILL NO 6</u>			
<u>ROOF COVERINGS, CLADDINGS, ETC</u>			
<u>Robertson Fire Station</u>			

PROFILED METAL SHEETING AND ACCESSORIES

0.58mm "Klip-Lok 700" approved galvanised ribbed sheeting in single lengths and 0.8mm galvanised accessories, both with clean "Colorbond" finish of approved standard colour on one side and standard grey backing finish on reverse side, fixed to steel purlins or rails

1	Roof coverings with pitches not exceeding 25 degrees	m2
2	Side claddings	m2
3	Roof coverings and side and soffit claddings to dormers, turrets, etc	m2
4	Extra over side claddings for 1.25mm "Modek" clear polycarbonate translucent panels	m2
5	Side wall flashings 350mm girth	m
6	Side wall flashings 408mm girth	m
7	Head wall flashings 350mm girth	m
8	Head wall flashings 375mm girth one edge notched on site	m
9	Ridge coverings 462mm girth	m
10	Ridge coverings 550mm girth both edges notched on site	m
11	Hip coverings 550mm girth both edges notched on site	m

0.58mm "Klip-Lok 700" galvanised ribbed sheeting in single lengths exceeding 13m and 0.8mm galvanised accessories, both with clean "Colorbond" finish of approved standard colour on one side and standard grey backing finish on reverse side, fixed to steel purlins or rails

12	Roof coverings with pitches not exceeding 25 degrees	m2
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ROOF AND WALL INSULATION

Sisalation FR405 light industrial double sided reflective foil laminate membrane

13	Insulation laid taut over rafters (at approximately 0.70m centres) and fixed concurrent with tiling battens, purlins, etc, including 100mm taped laps	m2
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Carried to Collection

BILL NO 6

ROOF COVERINGS, CLADDINGS, ETC

Robertson Fire Station

R

"AEROLITE" thermal membrane

14	Insulation 135mm thick laid over purlins (elsewhere)	m2
	<u>"Isoboard" high density rigid extruded polystyrene closed cell insulation boards with brown paper and polyethylene laminate slip sheet factory applied to upper surface, with tongue and groove joints</u>	
15	25mm Insulation boards in 0.60m widths laid over girts (at approximately 1.50m centres) and fixed concurrent with side cladding, including holes through boards, etc	m2
16	50mm Insulation boards in 0.60m widths laid over purlins (at approximately 1.50m centres) and fixed concurrent with roof covering, including holes through boards, nylon supporting straining wires, etc	m2

Carried to Collection

BILL NO 6

ROOF COVERINGS, CLADDINGS, ETC

Robertson Fire Station

R

BILL NO 6

ROOF COVERINGS, CLADDINGS, ETC

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

30
31
32

Carried to Summary

R

BILL NO 6
ROOF COVERINGS, CLADDINGS, ETC
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 7</u>			
<u>CARPENTRY AND JOINERY</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Plate nailed timber roof truss construction</u>			
The following is applicable in respect of roof trusses:			
Trusses are at maximum 1.20m centres. Roof covering is 0.6mm IBR profile sheeting on 50 x 75mm purlins. Ceilings are 6.4mm skimmed gypsum plasterboard sheeting on 38 x 38mm branderling. The references given in the descriptions are to the respective types of trusses detailed on the principal agent's drawing numbered H100/015 accompanying this document. The dimensions in the descriptions of the trusses are nominal and actual measurements shall be obtained from the principal agent and/or the site before design or fabrication commences			
<u>Pre-fabricated roof trusses</u>			
Pre-fabricated roof trusses shall comply with the design requirements of SABS Specification No 0160 and 0163 for coastal conditions and shall be designed by a registered Engineer and manufactured by Gangnail or other approved licenced manufacturer, all in strict accordance with the manufacturers instructions and to the approval of the Principal Agent.			
Rates are to include for the supply, erection and fixing into position and are to cover the cost of inspection and approval by an Engineer from the 'Institute for Timber Construction' and present an A19 certificate			
<u>Shop drawings</u>			
The truss fabricator must submit working drawings of the final truss design to the consulting Engineer for approval before fabrication. Rates must include for all working drawings as required.			
<u>Straight cutting</u>			
Descriptions of all boarding, etc shall be deemed to include for all straight cutting			
<u>Carried to Collection</u>			R
<u>BILL NO 7</u>			
<u>CARPENTRY AND JOINERY</u>			
<u>Robertson Fire Station</u>			

Joinery

Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to masonry or concrete

Decorative laminate finish

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

STRUCTURAL TIMBERWORK ETC

Design & Supply timber roof

- | | | |
|---|--|----|
| 1 | Timber roof as per engineers specification on drawing PS2006_21 103 by specialist (Also refer to complete set of architect drawings) | No |
|---|--|----|

Sawn softwood grade 5

- | | | |
|----|--|---|
| 2 | 38 x 38mm Hangers | m |
| 3 | 38 x 114mm Wall plates | m |
| 4 | 38 x 114mm Wall plates, bolted | m |
| 5 | 38 x 114mm Bracing | m |
| 6 | 38 x 114mm Trimmers | m |
| 7 | 38 x 114mm Sprockets | m |
| 8 | 38 x 114mm Bearers, bolted | m |
| 9 | 38 x 114mm Ceiling joists in lengths not exceeding 2.4m | m |
| 10 | 38 x 114mm Ceiling joists in lengths exceeding 2.4m and not exceeding 3.9m | m |
| 11 | 38 x 114mm Rafters in lengths not exceeding 2.4m | m |
| 12 | 38 x 114mm Rafters in lengths exceeding 2.4m and not exceeding 3.9m | m |
| 13 | 38 x 152mm Rafters in lengths exceeding 3.9m and not exceeding 6.6m | m |

Carried to Collection

BILL NO 7

CARPENTRY AND JOINERY

Robertson Fire Station

R

14	38 x 228mm Rafters in lengths exceeding 6.6m	m			
15	38 x 114mm Bearers in lengths exceeding 2.4m and not exceeding 3.9m	m			
16	38 x 152mm Bearers in lengths exceeding 3.9m and not exceeding 6.6m	m			
17	38 x 228mm Bearers in lengths exceeding 6.6m	m			
18	38 x 114mm Bolted roof truss members in lengths not exceeding 2.4m	m			
19	38 x 114mm Bolted roof truss members in lengths exceeding 2.4m and not exceeding 3.9m	m			
20	38 x 152mm Bolted roof truss members in lengths exceeding 3.9m and not exceeding 6.6m	m			
21	38 x 228mm Bolted roof truss members in lengths exceeding 6.6m	m			
22	50 x 75mm Runners	m			
23	50 x 75mm Purlins	m			
24	50 x 75mm Purlins, bolted	m			
25	75 x 75mm Splayed purlins	m			
26	38 x 228mm Blocking piece 400mm long	No			
<u>EAVES, VERGES, ETC</u>					
<u>"Nutec" medium density plain sheets</u>					
27	12 x 225mm Fascias and barge boards, including H-profile plastic jointing strips	m			
28	32 x 219mm Fascias and barge boards	m			
<u>SKIRTINGS</u>					
<u>Supawood</u>					
29	18 x 100mm Skirtings nailed	m			
30	18 x 100mm Skirtings, stepped over treads and risers, nailed	m			
<u>CILLS</u>					
<u>Supawood</u>					
31	18 x 100mm window cills	m			
<u>Carried to Collection</u>					
<u>BILL NO 7</u>					
<u>CARPENTRY AND JOINERY</u>					
<u>Robertson Fire Station</u>					

DOORS, ETC

Semi-solid flush doors with commercial veneer on both sides hung to steel frames

32	40mm Door 0.81 x 2.08m high (D05)	No
33	40mm Door 1.0 x 2.08m high (D06)	No
34	40mm Double door 1.21 x 2.08m high (D15)	No
35	40mm Double door 1.2 x 1.185m high (D16)	No

Semi-solid flush doors with commercial veneer on both sides hung to slide

36	40mm Door 1.1 x 2.08m high (D08)	No
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"Swartland" cross braced batten doors or similar approved

37	Single framed door 0.81 x 2.08m high (D07)	No
38	Double framed door 1.61 x 2.08m high (D09)	No
39	Double framed door 1.21 x 2.08m high (D10)	No
40	Double framed door 1.21 x 1.2m high (D10)	No

JOINERY FITTINGS

General

The following joinery fittings are measured as complete units i.e. the components of the units are not separately measured. The descriptions, therefore, of such units shall be deemed to include all components, assembling, housing, notching, glueing, blocking, planting on and screwing with countersunk screws, edge strips, decorative laminates, silicone pointing against adjacent surfaces, ironmongery, metalwork, glass, paint or varnish finishes, etc

The references given in the descriptions refer to the respective types of joinery fittings detailed on the architect's drawings annexed at the back of this document

Shelving

41	Adjustable shelving 2180mm high made up of 5 horizontal shelves, each of 600 x 20mm selected laminated timber shelving. Including vertical uprights at max 420mm centres. Shelving to be Shelves to be fixed on steel wall brackets double slots including bolts. Double slot steel wall band for adjustable shelving fixed to wall including drilling, bolts etc. complete as per Architects drawing RFS/21 516 A	m
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Carried to Collection

BILL NO 7

CARPENTRY AND JOINERY

Robertson Fire Station

R

42	Extra over for corners of shelving	m			
	<u>Kitchen cupboards</u>				
43	L-shaped Sink and oven cupboard 945 / 3095 x 600 x 900mm high with melamine carcass and internals, sides, bottom, divisions, shelf, back, 4 no double hinged doors and 4 no drawers, complete with ironmongeries (sink elsewhere measured) as per manufactures specifications and Architect's drawing RFS/21 518 A	No			
44	L-shaped cupboard 345 / 1075 x 600 x 900mm high with melamine carcass and internals, sides, bottom, divisions, shelf, back, 3 no double hinged doors and 4 no drawers, complete with ironmongeries as per manufactures specifications and Architect's drawing RFS/21 518 A	No			
45	Cupboard with counter top 3095 x 600 x 900 / 1250mm high with melamine carcass and internals, sides, bottom, divisions, shelf, back, 4 no double hinged, doors and 4 no drawers, 1 no under counter bin store complete with ironmongeries as per manufactures specifications and Architect's drawing RFS/21 518 A	No			
46	Top shelves 3095 x 369 x 1340mm high with melamine carcass and internals, sides, bottom, divisions, shelf, back, 4 no double hinged, doors, complete with ironmongeries as per manufactures specifications and Architect's drawing RFS/21 518 A	No			
47	Top shelve microwave holder 600 x 400 x 400mm high with melamine carcass and internals, sides, bottom, divisions, shelf, back, complete with ironmongeries as per manufactures specifications and Architect's drawing RFS/21 518 A	No			
	<u>Bedroom cupboards</u>				
48	Built in cupboard 1800 x 3000 x 600mm complete as per room detail layout RFS/21 506 A	No			
49	Built in cupboard 1800 x 3000 x 600mm complete as per room detail layout RFS/21 507	No			
50	Built in cupboard 1800 x 3000 x 600mm complete as per room detail layout RFS/21 508	No			
51	Built in cupboard 1800 x 3000 x 600mm complete as per room detail layout RFS/21 509	No			
52	Built in cupboard 1170 x 3000 x 600mm complete as per room detail layout RFS/21 510	No			
	<u>Desks</u>				
53	Built in desk 30 x 800 x 429mm complete as per room detail layout RFS/21 510	No			
	<u>Carried to Collection</u>			R	
	<u>BILL NO 7</u>				
	<u>CARPENTRY AND JOINERY</u>				
	<u>Robertson Fire Station</u>				

BILL NO 7

CARPENTRY AND JOINERY

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

34
35
36
37
38
39

Carried to Summary

R

BILL NO 7
CARPENTRY AND JOINERY
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 8</u>			
<u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Descriptions</u>			
Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to masonry or concrete			
Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted", the bolts are measured elsewhere			
<u>Sub-grids</u>			
Sub-grids for suspended ceilings shall be deemed to include for the design, supply and erecting of a stable horizontal gridwork of galvanised steel "Burgess" channels at centres suitable to carry the ceilings and for positive fixing thereof to structural steel members at not exceeding 5.00m centres and exceeding 3m and not exceeding 4m below the steel members			
<u>Proprietary suspended ceilings</u>			
Hangers, suspension grids, "lay-in" panels, etc are to be in accordance with the manufacturers' recommendations			
Electrical light fittings, diffusers, panels etc are generally "lay-in" units of the same dimensions as the suspension grid described and allowance must be made in the rates accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof)			
<u>Flush plastered gypsum plasterboard suspended ceilings</u>			
Ceilings shall comprise screw-up galvanised steel suspension grid consisting of main tees at 1.20m centres, cross tees at centres to suit the thickness of the boards and covered as described with plasterboard screwed to grid with 25mm "Drywall" screws at maximum 220mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer			
<u>Carried to Collection</u>			R
<u>BILL NO 8</u>			
<u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u>			
<u>Robertson Fire Station</u>			

The grid shall be suspended by means of galvanised steel angle hangers at suitable centres, securely shot pinned or screwed to concrete, steel or wood

Flush plastered gypsum plasterboard suspended bulkheads

Bulkheads shall comprise galvanised steel studding of 63.5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with 25mm "Drywall" screws at maximum 220mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer

Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc

Fire barriers

Fire barriers are to be constructed with the type and thickness of boards and the number of layers and insulation (if necessary) to comply with the specified fire rating all in accordance with the manufacturer's recommendations. Top and bottom edges, abutments, openings, etc are to be sealed to maintain the fire rating specified

"Saint-Gobain GypRoc" partition systems

"GypWall" drywall partitioning shall comprise of 63.5mm galvanised steel top and bottom tracks with 63.5mm galvanised steel vertical studs at maximum 600mm centres, friction fitted or pop riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with taper edged "Rhino" board screwed to studding with 25mm "Drywall" screws at maximum 220mm centres. Boards are to be butt jointed and taped and jointed all in accordance with the manufacturer's instructions. Intersections and abutments are measured separately and descriptions shall be deemed to include any additional studs, corner beads, jointing compound, tape, etc

Note: Wall paper and/or paint and varnish finishes are measured elsewhere

"GypWall LC Crusader" partition systems

Demountable partitions are to be "GypWall LC Crusader" comprising galvanised steel tracks and studs with one layer of 12.5mm gypsum plasterboard in 1.20m modules on both sides, flat aluminium skirtings and aluminium angle trim cornices. The panels are to be covered with "DonnClad" paper backed vinyl wall cladding wrapped around edges. Aluminium door frames and glazing sections, skirtings, cornices, etc shall be natural anodised aluminium

Carried to Collection

BILL NO 8

CEILINGS, PARTITIONS AND ACCESS FLOORING

Robertson Fire Station

R

CEILING TIMBERS, BEADS, INSULATION, ETC**Sawn softwood**

1	38 x 38mm Branders	m
2	38 x 38mm Branders, nailed	m
3	38 x 38mm Branders, plugged	m
4	38 x 38mm Branders wrought on one face, plugged	m
5	38 x 38mm Hangers	m
6	38 x 114mm Ceiling joists	m
7	50 x 76mm Runners	m

Sandra

8	70 x 20mm Cornices, nailed	m
9	70 x 20mm Cornices, plugged	m

NAILED-UP CEILINGS**9.5mm approved gypsum plasterboard with plastic M-Strip jointing strips**

10	Horizontal ceilings, including 38 x 38mm sawn softwood brander at 150mm centres	m2
11	Sloping ceilings, including 38 x 38mm sawn softwood brander at 150mm centres	m2
12	Vertical ceilings, including 38 x 38mm sawn softwood brander at 150mm centres	m2

9.5mm approved gypsum plasterboard with 63mm wide strips of mesh scrim nailed over joints and the whole finished with gypsum skim plaster trowelled to a smooth polished surface

13	Horizontal ceilings, including 38 x 38mm sawn softwood brander at 150mm centres	m2
14	Sloping ceilings, including 38 x 38mm sawn softwood brander at 150mm centres	m2
15	Vertical ceilings, including 38 x 38mm sawn softwood brander at 150mm centres	m2

Carried to Collection**BILL NO 8****CEILINGS, PARTITIONS AND ACCESS FLOORING****Robertson Fire Station**

R

16	Circular cutting	m			
17	Vertical bulkheads between nailed-up ceilings, formed of one 300mm element, including 38 x 38mm sawn softwood branderling at 150mm centres	m			
18	L-shaped bulkheads between nailed up ceilings and walls 600mm girth, formed of one 300mm horizontal element and one 300mm vertical element, including 38 x 38mm sawn softwood branderling at 300mm centres	m			
19	U-shaped bulkheads between nailed-up ceilings 700mm girth, formed of one 100mm horizontal element, one 200mm and one 400mm vertical elements, including 38 x 38mm sawn softwood branderling at 300mm centres	m			
20	Extra over ceilings for opening for sprinkler head	No			
21	Extra over ceilings for opening for 150mm diameter downlighter	No			
	<u>"Rhino" gypsum plasterboard cornices</u>				
22	75mm Coved cornices, nailed	m			
	<u>PARTITIONS, ETC</u>				
	<u>Approved drywall system with one layer of 12.5mm boards on both sides</u>				
23	Partitions 1.80m high with bottom track nailed and top track fitted with standard aluminium channel cappings	m			
24	Partitions 2.60m high with bottom track nailed and top track fitted with standard aluminium channel cappings and fixed to suspended ceiling tees	m			
25	Extra over partitions 1.80m high for vertical abutment against structure	No			
26	Extra over partitions for creating opening for door (elsewhere) including aluminium frame etc. 0.813 x 2.085m high (D05)	No			
27	Extra over partitions for creating opening for door (elsewhere) including aluminium frame etc. 1.00 x 2.085m high (D06)	No			
28	Extra over partitions for creating opening for door (elsewhere) including aluminium frame etc. 1.22 x 2.085m high (D15)	No			
29	Extra over partitions 2.60m high for vertical abutment against structure	No			
30	Extra over partitions 1.80m high for corner	No			
31	Extra over partitions 2.60m high for corner	No			
32	Extra over partitions 1.80m high for T-intersection	No			
	<u>Carried to Collection</u>				
	<u>BILL NO 8</u>				
	<u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u>				
	<u>Robertson Fire Station</u>				

R

BILL NO 8

CEILINGS, PARTITIONS AND ACCESS FLOORING

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

41
42
43
44
45

Carried to Summary

R

BILL NO 8

CEILINGS, PARTITIONS AND ACCESS FLOORING

Robertson Fire Station

<u>Item No</u>		<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
	<u>BILL NO 9</u>			
	<u>FLOOR COVERINGS, WALL LININGS, ETC</u>			
	For preambles see "Model Preambles for Trades"			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Fixing</u>			
	Floor coverings, wall linings, etc shall, where applicable, be fixed with adhesive as recommended by the manufacturers			
	<u>FLOOR COVERINGS</u>			
	<u>Supply and fix 2.0mm/2.5mm thick x 1.2m wide Superflex fully flexible vinyl sheeting, manufactured in accordance with SANS 786 and to FLOORWORX's suggested installation. The sheeting must be rolled in both directions with an articulated 68kg three-sectional roller immediately after it had been laid into the adhesive. Joints must be butted, grooved and heat welded</u>			
1	Floors	m2		
2	Circular cutting	m		
3	Floors in insets 100mm wide of differing colour	m		
4	Floors in margins and borders not exceeding 500mm wide	m		
5	Turn-ups over coves and up against walls not exceeding 500mm girth	m		
	<u>POLISH, SEALERS, ETC</u>			
	<u>Three coats wax polish on</u>			
6	Vinyl floors	m2		
	<u>Scrub with "Wetrok Resal" neutral cleaner, rinse with clean water, dry with a wet vac and apply three coats "Wetrok Mepol HM" satin/matt sealer to</u>			
7	Vinyl floors	m2		
	<u>Carried to Summary</u>		R	
	<u>BILL NO 9</u>			
	<u>FLOOR COVERINGS, WALL LININGS, ETC</u>			
	<u>Robertson Fire Station</u>			

LOCKS

"Ironware" locks

4	35mm cylinder dead lock product code IW2013SS	No
5	35mm cylinder sash lock product code IW2001SS	No
6	Commercial cylinder dead lock product code IW2207SS	No
7	Commercial cylinder dead lock product code IW2219SS including rebate kit for IW2219 lock	No
8	Commercial cylinder sash lock product code IW2207SS	No
9	WC dead lock with 8mm follower product code IW2031	No
10	60mm cylinder hook lock product code IW2040SS	No
11	50mm cylinder dead lock with adjustable roller catch product code IW2026SS	No

"Ironware" rebate kits

12	Rebate kit for IW2207 / IW2219 lock product code IW2140SS	No
13	Rebate conversion set (long) np product code 521RN	No

LOCKS SUITABLE FOR MASTER KEY OPERATION

Master key locks

14	43mm single cylinder - master keyed product code IWI2081NPMK	No
15	66mm double cylinder - master keyed product code IWI2051NPMK	No

HANDLES

"CALINI"

16	25 x 450 x 300mm c/c p/handle offset product code IW1331/25/450	No
17	Round pull handle: length = 170mm / ctc = 150mm / post = 19mm / ss product code IW1320/170	No
18	Lever handle on screw type rosette ss product code IW1008H	No
19	Round pull handle: length = 625mm & 325mm / ctc = 600mm & 300mm / post = 25mm / ss product code IW1321	No
20	40x20 oval flush pull handle product code IW1482SS	No

Carried to Collection

BILL NO 10

IRONMONGERY

Robertson Fire Station

R

21	22mm pull handle back to back fixing set with rosette for: IW1330 - 25mm dia / ss product code IWFSBTB22	Pairs			
22	19mm pull handle back to back fixing set with rosette for: IW1306 - 22mm dia / ss product code IWFSBTB19	Pairs			
	<u>"Ironware"</u>				
23	63 x 44mm flush ring pull handle product code IW1485SS	No			
	<u>LOCK BACK PLATE</u>				
	<u>Lock back plate</u>				
24	Calini 285 x 28mm square cylinder back plate ctc = 85mm product code IWSBP5CYLSS	No			
	<u>DOOR CLOSERS</u>				
	<u>Door closers</u>				
25	EN2-4 slide channel door closer push side product code IS115RV	No			
26	Slide channel door en 2-3 silver product code IS115	No			
27	QS700DA/1 delayed action with arm 2-3 product code QS700DA/1	No			
28	Ironware adjustable roller catch ss product code IW5054SS	No			
	<u>DOOR COORDINATORS</u>				
	<u>Door coordinators</u>				
29	QS762 fire door coordinator 42"	No			
	<u>DOOR ESCUTCHEON</u>				
	<u>Door escutcheon</u>				
30	Calini narrow style cylinder escutcheon ss product code IW1903CYLSS	No			
31	Calini round screw type escutcheon ss product code IW1904CYLSS	No			
	<u>DOOR STOPS</u>				
	<u>Door stops</u>				
32	Ironware round door stop product code IW5001SC	No			
33	Ironware magnetic floor door stop/holder product code IW5009SC	No			
	<u>Carried to Collection</u>				
	<u>BILL NO 10</u>				
	<u>IRONMONGERY</u>				
	<u>Robertson Fire Station</u>				

DOOR INDICATORS

Door Indicators

- | | | |
|----|--|----|
| 34 | Ironware WC Indicator set product code IW1926 | No |
| 35 | Ironware 50mm round WC Indicator set product code IW1921 | No |

DOOR ACCESSORIES

Door accessories

- | | | |
|----|--|----|
| 36 | Ironware hook and buffer product code IW5034 | No |
| 37 | Ironware dust excluding socket product code IW4060SS | No |

Straightaway

- | | | |
|----|---|----|
| 38 | Straightaway 100A sliding gear set for single timber door with aluminium track for side fixing, including brackets, stainless steel hangers, rollers etc. product code ST100A | No |
|----|---|----|

PUSH AND KICKING PLATES

1.2mm stainless steel plates counter sunk screwed along edges at not exceeding 850mm centres

- | | | |
|----|--------------------------------------|----|
| 39 | 150 x 850mm product code KP1.2*15*85 | No |
|----|--------------------------------------|----|

SIGNAGE

Ironware bathroom signage male and female, mounted to walls, doors, backing plates, etc

- | | | |
|----|---|----|
| 40 | 150 x 150mm outline engraved ss male and female product code IW6002SS | No |
| 41 | 150 x 150mm outline engraved ss disabled product code IW6005SS | No |

SUNDRIES

Approved

- | | | |
|----|--|----|
| 42 | 10mm Diameter steel dowel 75mm long in and including mortice in timber and brickwork or concrete | No |
| 43 | 38mm Diameter rubber door stop | No |
| 44 | 38mm Diameter rubber door stop, plugged | No |

Carried to Collection

BILL NO 10
IRONMONGERY
Robertson Fire Station

R

<u>"Union Assa Abloy"</u>					
45	9002AS door stop, plugged	No			
46	AL8721AS hat and coat hook, plugged	No			
47	AL8722AS hat and coat hook with rubber buffer	No			
<u>"Raven"</u>					
48	RP10 sealing strip fixed to top and edges of frame for 0,81 x 2,03m high single door	No			
49	RP3 sealing strip fixed to bottom of 813mm wide single door	No			
<u>"Decramat" door and entrance mats</u>					
50	10mm "Triple Active" mat size 0.90 x 0.60m laid loose in mat surround	No			
51	10mm "Mat-lok Aluguard Passive Scraper" mat size 4.00 x 1.60m laid in and including a AMF31/31 recess frame mat surround screeded in	No			
<u>BATHROOM FITTINGS</u>					
<u>Toilet roll holder</u>					
52	4600 Series Type 1 polished stainless steel toilet roll holder product code BUT-BAAC4601POLS	No			
<u>Shower rack</u>					
53	4600 Series 330mm polished stainless steel shower rack product code BUT-BAAC4620POLS	No			
<u>Robe/towel hook</u>					
54	4600 Series single brushed stainless steel robe hook product code BUT-BAAC4610BRSH	No			
<u>Single towel rail</u>					
55	Single Towel Rail 4800 product code BUT-BAAC4870POLS	No			
<u>Grab rail</u>					
56	32mm diameter stainless steel rear grab rail, in satin finish complete with SS fixing screws and plastic wall plugs	No			
57	32mm diameter stainless steel 300 x 300 x 300mm right hand side grab rail, in satin finish complete with SS fixing screws and plastic wall plugs	No			
<u>Carried to Collection</u>					
<u>BILL NO 10</u>					
<u>IRONMONGERY</u>					
<u>Robertson Fire Station</u>					

SHELVES, ETC**"Shelco" with standard epoxy powder coated finish**

58	WB7 double slot wall bands, plugged	m
59	BR12 shelf bracket	No
60	BR18 shelf bracket	No
61	SS12 shelf 914mm long	No
62	SS18 shelf 914mm long	No

"Shelco" free standing steel shelving units with standard epoxy powder coated finish, including heavy duty uprights, open base adjustable foot pieces, shelf brackets, shelves, spacers, top rails, top and end covers

63	Type FSSA reference M double shelving unit 2.74 x 1.08 x 1.52m high in three bays with four uprights, each bay 914mm wide with four SS15 shelves, four SS18 shelves and two SS21 shelves	No
----	--	----

STEEL LOCKERS**"Greenfield Guardman" economy steel lockers with epoxy powder finish**

64	GB006 locker 0.45 x 0.45 x 1.80m high, plugged	No
65	Bank of 8 x GB006 lockers each 0.45 x 0.45 x 1.80m high bolted together, plugged	No

PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC**"Vitrex"**

66	Code 2310 pinning board 3.00 x 1.20m high, plugged	No
67	Code 2210 white writing board 3.00 x 1.20m high with pen rail, plugged	No
68	Code 2402 green folding type writing board, with wall mounted centre board 2.00 x 1.20m high with chalk rail and two swing leaves each 1.00 x 1.20m high, plugged	No
69	Code 2502 column mounted vertical sliding type green writing board with two boards each 2.50 x 1.00m high with chalk rail and pair of columns 2.90m high, plugged	No
70	Code 2704 tilting wall mounted projection screen 1.50 x 1.50m high, plugged	No

Carried to Collection**BILL NO 10****IRONMONGERY****Robertson Fire Station**

R

BILL NO 10

IRONMONGERY

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

48
49
50
51
52
53

Carried to Summary

R

BILL NO 10
IRONMONGERY
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 11</u>			
<u>STRUCTURAL STEELWORK</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>SANS 1200HA</u>			
Clause 5.3.6 (Repairs to paint and site painting) shall be applicable			
<u>Descriptions</u>			
Black bolts shall be deemed to include class 4.8 bolts, galvanised or otherwise finished			
Descriptions of structural steelwork shall be deemed to include for welding, holes, nuts, washers, rivets, bolting and riveting			
Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in top of concrete			
Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in masonry or concrete			
Steelwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
Steelwork described as "galvanised" shall be galvanised by means of the hot-dip process after fabrication. Where welding on site is unavoidable, such welded joints shall be cleaned down and cold galvanised to approval			
Steelwork described under headings with " INCLUDING PAINTING" shall be deemed to include for preparation by mechanical wirebrush and painting with one coat 45 micron zinc phosphate primer and two coats 30 micron super gloss enamel applied in factory and touched up on site and prices are to include for this			
<u>Bolting of steelwork</u>			
Where steelwork is described as "bolted" to wood, masonry, concrete, etc the bolts are measured elsewhere			
<u>Carried to Collection</u>			R
<u>BILL NO 11</u>			
<u>STRUCTURAL STEELWORK</u>			
<u>Robertson Fire Station</u>			

GALVANISED STEEL COLUMNS AND BEAMS

Welded columns in single lengths with flat base, top, bearer and connection plates, bolted to concrete

- | | | |
|---|--|---|
| 1 | 203 x 203mm x 46kg/m H-section columns | t |
| 2 | 254 x 146mm x 31kg/m I-section columns in lengths not exceeding 13m | t |
| 3 | 553 x 210mm x 101.0kg/m I-section columns in lengths exceeding 18m and not exceeding 19m | t |

Welded lattice columns formed of 100 x 100 x 10mm, 70 x 70 x 8mm and 50 x 50 x 6mm angle framework and bracing, with flat base, top, bearer, gusset and connection plates, bolted to concrete

- | | | |
|---|---|---|
| 4 | 300 x 600mm Lattice columns 10.00m high | t |
| 5 | 600 x 900mm Lattice columns in heights varying from 5.00m to 10.00m | t |

Welded lattice beams formed of 100 x 100 x 10mm, 70 x 70 x 8mm and 50 x 50 x 6mm angle framework and bracing, with flat bearer, gusset and connection plates, bolted to steel

- | | | |
|---|---|---|
| 6 | 300 x 600mm High lattice beams 20.00m long | t |
| 7 | 600 x 900mm High lattice beams in lengths varying from 10.00m to 15.00m | t |

Bolts and baseplates to columns, etc

- | | | |
|---|--|----|
| 8 | Hot dip galvanised M16 (8.8) Ø u-bolts cast into concrete stub columns as per engineers drawings PS2006_21 201 B | No |
| 9 | 360 x 360 x 12mm Thick flat section baseplate, four times holed for u-bolts (Bolts elsewhere) | No |

STEEL TRUSSES

Welded roof trusses of angle rafters, tie beams, struts, braces, cleats, etc and flat bearer, gusset and connection plates, bolted to steel PS2006 21 200 B

- | | | |
|----|-----------------------------------|---|
| 10 | 60 x 60 x 6mm Angle | t |
| 11 | 203 x 133 x 25 T section (type A) | t |

Carried to Collection

BILL NO 11

STRUCTURAL STEELWORK

Robertson Fire Station

R

	<u>Welded roof girder of angle rafters, tie beams, struts, braces, cleats, etc and flat bearer, gusset and connection plates, bolted to steel as per engineers drawing PS2006_21 200 B</u>			
12	30 x 30 x 5mm thick angle	t		
13	70 x 70 x 8mm thick angle	t		
14	305x156x40 T section (type D)	t		
	<u>Welded roof trusses of angle top and bottom chords, struts, braces, etc and flat bearer, gusset and connection plates, bolted to concrete</u>			
15	Lattice trusses 30.00 x 2.00m high extreme	t		
16	Lattice trusses in two sections bolted together, 30.00 x 2.00m high extreme	t		
	<u>GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC</u>			
	<u>Purlins and girts, bolted to steel</u>			
17	150 x 65 x 20 x 3.0mm x 7.48kg/m Cold-formed lipped channel purlins	t		
18	150 x 65 x 20 x 3.0mm x 7.48kg/m Cold-formed side rails	t		
	<u>Welded box gutter bearers with flat cleats, bolted to steel</u>			
19	50 x 50 x 5mm x 3.77kg/m Angle longitudinal bearers	t		
20	50 x 5mm x 1.96kg/m Flat cross bearers	t		
	<u>BOLTS ETC.</u>			
21	"Hilti" HLC M12 expansion anchor and bolt including injection mortar	No		
22	"Hilti" HLC M16 expansion anchor and bolt including injection mortar	No		
	<u>Carried to Collection</u>		R	
	<u>BILL NO 11</u>			
	<u>STRUCTURAL STEELWORK</u>			
	<u>Robertson Fire Station</u>			

PAINT TO STRUCTURAL STEEL

PAINT SPECIFICATION

VISIBLE AND NON-VISIBLE AREAS

1. Blast clean all structural steel work to SA2.5 of SIS 05-09-00 to 50-75 micron blast profile.

2. Primer:

Apply once coat Plascon Zinc Phosphate (code UC 170) or similar approved primer(50um) to manufacturer's specification (applied 4hours of surface treatment)

3. Finishing Coat:

Apply two coats(each 30um) high-gloss enamel (code G range) to manufacturer's specification. colour by Architect

Any damaged areas must be repaired with Primer and Topcoat, to the laid down total Dry Film Thickness.

After erection repair all damaged areas as above.

Contractor to supply a written guarantee for paint and finishing specification.

Non-visible areas to receive primer only Visible areas to receive primer and finishing coat.

23 Painting to visible areas as described

m2

Carried to Collection

BILL NO 11
STRUCTURAL STEELWORK
Robertson Fire Station

R

BILL NO 11

STRUCTURAL STEELWORK

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

55
56
57
58

Carried to Summary

R

BILL NO 11
STRUCTURAL STEELWORK
Robertson Fire Station

<u>Item No</u>		<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
	<u>BILL NO 12</u>			
	<u>METALWORK</u>			
	For preambles see "Model Preambles for Trades"			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Descriptions</u>			
	Descriptions of bolts shall be deemed to include nuts and washers			
	Unless where otherwise indicated, descriptions of galvanised wire fencing shall comply with SANS 675 coating thickness			
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in masonry or concrete			
	Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
	<u>Aluminium windows, doors, etc</u>			
	The contractor is referred to the drawings annexed at the back of this document for general requirements, scope and construction details of the work to be carried out under this heading. The reference numbers shown in brackets are taken from the drawings			
	The work includes for the supply, setting up, fixing in position of windows, doors, etc to masonry or concrete, ironmongery, polyurethane sealant all round on both sides and for glazing as described			
	Detailed shopdrawings will be required indicating layout elevations, profile sections, profile connections, ironmongery and waterproofing details on all windows, doors, etc			
	<u>GALVANISED STEEL HANDRAILS, BALUSTRADING, ETC</u>			
	<u>Welded and bolted handrails</u>			
1	50 x 2.0mm hollow section continuous rails including fixing to wall at 1460mm c/c as necessary	m		
2	Extra over for stopped end	No		
	<u>Carried to Collection</u>		R	
	<u>BILL NO 12</u>			
	<u>METALWORK</u>			
	<u>Robertson Fire Station</u>			

Balustrading

3	50mm dia satin chrome stainless steel balustrade frame with 2 x 25mm galvanized powder coated welded mesh infill complete as per Architects drawing RFS/21 603 TEN	m
4	Extra over for stopped end	No
5	Extra over for corners	No

GALVANISED PRESSED STEEL DOOR FRAMES

1,2mm Rebated frames

6	Frame for door size 1 219 x 2 085mm high for 110mm walls	No
7	Ditto, but for 230mm walls	No
8	Ditto, but for 280mm cavity walls	No
9	Frame for door size 1 613 x 2 052mm high for 110mm walls	No
10	Ditto, but for 230mm walls	No
11	Ditto, but for 280mm cavity walls	No

ALUMINIUM (WG 140)

GENERAL

This specification must be read in conjunction with the drawings annexed to these Bills of Quantities.

The drawings relating to this part of the document indicate the general requirements and dimensions of the aluminium windows, glass, louvres, etc.

No deviations may be made from the general requirements and dimensions but improvements in design affecting neatness, strength, durability or efficient work may be introduced. The Contractor will be held responsible for satisfactory performance of the aluminium windows, glass, etc, with regard to structural strength, allowance for thermal movement, expansion and contraction, resistance to wind pressure, resistance to air and water penetration and methods of fixing, bearing in mind that this is a building totalling approximately 4 metres overall in height.

Window construction to comply with AAMSA guides and SABS codes as well as the National Building Regulations.

Materials and workmanship are without exception to be to the approval of the Architect.

Carried to Collection

BILL NO 12
METALWORK
Robertson Fire Station

R

Scope of the Works

The work includes, but is not restricted to the following major items of work and any work shown on the drawings but not specifically mentioned herein shall be included:

Aluminium windows, etc, and set up complete.

Glass and glazing all as indicated on the drawings or as described in this specification.

All aluminium waterstops.

All protection and maintenance of protection.

All fixing.

All sealing between adjoining and/or coupled units, including the sealing between the window units, etc, and the building fabric as indicated on the drawings.

All timber filler pieces.

All samples.

All removal of protection and final cleaning down of all exposed surfaces prior to handover.

Shop Drawings

The appointed Sub-Contractor will be required to prepare the necessary shop drawings showing all component parts, their location, method of assembly and fixing. These drawings must also show the relationship with adjacent finishes.

Two paper copies of each shop drawing, free of any charge, are to be submitted timeously by the Sub-Contractor to the Architect for approval. No fabrication is to commence prior to the Sub-Contractor's receipt of an approved in principle copy of a shop drawing endorsed by the Architect.

Approval in principle of the shop drawings by the Architect will not relieve the sub-contractor from the responsibility of fulfilling the requirements of the Architect's drawings, specification and performance criteria, nor from the responsibility to the Main Contractor for programming attendance, etc.

All such drawings shall be submitted in sufficient time to allow for comment, correction and eventual acceptance for general issue having regard to the main contract and sub-contract programme.

The Architects may make minor changes in the shapes of the members before final approval of the shop drawings.

Carried to Collection

BILL NO 12
METALWORK
Robertson Fire Station

R

The Sub-Contractor shall submit for the Architects' approval a sample of the glazing system and peripheral sealant materials proposed for the window construction and installation.

Protection

All work must be protected by covering up with temporary casings or tape against damage, droppings, varnish, wax, paint, etc, all to the entire satisfaction of the Architect.

All work damaged, deteriorated or discoloured must be replaced at the contractor's expense to the entire satisfaction of the Architect.

Special consideration must be given to watertight joint connections between the whole works and the building structure into which the works are to be built.

Rates for windows, louvres, etc, should include for glass, gaskets, sealants, fixing lugs, timber filler pieces, waterstops, protection and removal thereof, samples, etc.

Reference

Windows, doors, shopfronts, etc, are not described in detail. The Contractor is referred to the schedules which must be read in conjunction with these Bills of Quantities (See drawings annexed to these Bills of Quantities).

Mullions, etc

Mullion profiles must be to Aluminium City standards or other approved. Vertical and horizontal mullions fixed to walls must be 76 x 32mm Code 26B LL. Stand alone vertical and horizontal mullions must be 76 x 32mm Code 26 LL.

Glazing, etc

Unless otherwise described Fadeban laminated safety glass to be used for shopfront glazing in accordance with National Building Regulations SABS 400-1990 Part N, NN 2.1 Table 1 - Glass Dimensions.

For pane sizes not exceeding 1m², 6mm NS glazing must be used and for pane sizes exceeding 1m², 8,5mm HPR glazing must be used.

Glazing must be fixed with double sided adhesive tape and silicone sealant to glazing in spacers and setting blocks.

12 x 15mm Clip-on glazing bead Code AP 104 to be used.

Butt glazing to be formed with 12mm thick monolithic glass fin 200mm wide with polished edges and fixed with clear silicone Code DC 785.

Carried to Collection

BILL NO 12
METALWORK
Robertson Fire Station

R

**ALUMINIUM WINDOWS, DOORS, SHOPFRONTS,
ETC**

This specification must be read in conjunction with the Architect's drawings i.e:

RFS/21 600 TEN
RFS/21 601 TEN

Powder coated aluminium frame sectional overhead
automated roller shutter door with panoramic glass
panels to SANS 10400 requirements, colour tbc as per
Architects specifications

12 Roller Shutter door 4.2 x 3.95 m high (D01) No

Powder coated aluminium frame sectional overhead
automated roller shutter door with vision glass panels to
SANS 10400 requirements, colour tbc as per Architects
specifications

13 Roller Shutter door 4.2 x 3.95 m high (D02) No

Powder coated aluminum frame with low E
safety glass panels, to SANS 10400
requirements with opening sensors - colour tbc by
Architect

14 Double sliding automated door 2.5 x 2.08 m high (D03) No

Powder coated aluminum frame with low E
safety glass panels, to SANS 10400
requirements - colour tbc by Architech

15 Single door 0.87 x 2.08 m high (D12) No

16 Single door 0.60 x 1.54 m high (D14) No

17 Double door 1.21 x 2.08 m high (D04) No

18 Double door 1.61 x 2.08 m high (D11) No

Carried to Collection

BILL NO 12
METALWORK
Robertson Fire Station

R

Frames are to be powder coated aluminium sections, constructed and installed according to the guidelines of The Association of Architectural Aluminium Manufacturers of South Africa (AAASA). Glazing is to be carried out in strict accordance with the SABS 0137/2000 Code of Practice: "The Installation of Glazing in Buildings" and where required, safety glazing materials must conform to SABS 1263. colour tbc by Architech

19	Window 0.51 x 2.08 m high (W01)	No
20	Window 0.9 x 1.8 m high (W02)	No
21	Window 1.2 x 1.8 m high (W03)	No
22	Window 0.6 x 0.9 m high (W04)	No
23	Window 0.6 x 0.6 m high (W05)	No
24	Window 3.72 x 1.2 m high (W06)	No
25	Window 1.92 x 2.08 m high (W07)	No
26	Window 0.4 x 4.80 m high (W08)	No
27	Window 4.32 x 1.16 m high (W09)	No
28	Window 1.86 x 1.2 m high (W10)	No
29	Window 1.8 x 0.6 m high (W11)	No
30	Window 0.95 x 2.22 m high (W12)	No
31	Window 0.4 x 2.22 m high (W13)	No
32	Window 4.2 x 0.84 m high (W15)	No
33	Window 1.8 x 0.6 m high (W16)	No
34	Window 0.9 x 1.2 m high (W17)	No
35	Triangular Window 6.99 x 1.29 m high with 10° angle (W14)	No

Carried to Collection

BILL NO 12
METALWORK
Robertson Fire Station

R

BILL NO 12

METALWORK

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

60
61
62
63
64
65

Carried to Summary

R

BILL NO 12
METALWORK
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 13</u>			
<u>PLASTERING</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>GRANOLITHIC</u>			
<u>Method</u>			
The method to be used shall be either the monolithic or bonded method			
<u>Preparation</u>			
For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic shall then be applied immediately afterwards. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the finish			
<u>Mix</u>			
Granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic			
<u>Panels</u>			
Granolithic shall be laid in panels not exceeding 14m ² for granolithic finishes, not exceeding 9.5m ² for bonded finishes and not exceeding 6m ² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1.5 times its width. Joints between panels shall be positioned, where possible, over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with small V-joints			
<u>Carried to Collection</u>			R
<u>BILL NO 13</u>			
<u>PLASTERING</u>			
<u>Robertson Fire Station</u>			

Laying

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

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

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

Curing, seasoning and protection

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

Colour

Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour

PLASTER

Finish

Internal plaster shall be finished with a steel trowel and external plaster with a wooden float

SPECIALIST PLASTER TYPE COATINGS

All specialist plaster type wall and floor coatings are to be executed in strict accordance with the manufacturer's instructions by an approved applicator

SCREEDS

Screeds steel trowelled on concrete

- | | | |
|---|-----------------------------------|----|
| 1 | 40mm Thick on floors and landings | m2 |
| 2 | 40mm Thick on narrow widths | m2 |

Prime sub-floor and apply "Ardex K15" or similar approved self-levelling compound and finish smooth, all in accordance with manufacturer's instructions:

- | | | |
|---|------------------------------|----|
| 3 | 3mm thick on concrete floors | m2 |
|---|------------------------------|----|

Carried to Collection

BILL NO 13

PLASTERING

Robertson Fire Station

R

GRANOLITHIC

40mm thick untinted Granolithic finish composed of one part cement, one part fine sand, two parts coarse sand and one part 5mm exposed granite particles, laid by specialist in panels not exceeding 10m2. incl approved brass dividing strips, Floated with a steel trowel to perfectly smooth surface, free from bumps and scratches, and sealed with approved durable surface coat.

4	30mm Thick on floors and landings	m2
5	30mm Thick on treads and risers of stairs, including reedings	m2
6	30mm Thick on narrow widths	m2
7	Forming 100mm wide x 30mm deep segmental channels	m
8	Skirtings 75mm high	m
9	Skirtings 75mm high stepped over treads and risers	m
10	Raking skirtings average 200mm high stepped over treads and risers	m

INTERNAL PLASTER

Cement plaster class II on masonry

11	Walls	m2
12	Narrow widths	m2

Cement plaster class II on concrete

13	Columns	m2
14	Ceilings	m2
15	Beams	m2
16	Narrow widths	m2
17	Tops, edges and projecting soffits of nibs 300mm girth	m
18	Single plaster band 12mm thick	m2

Gypsum skim plaster on concrete

19	Ceilings	m2
----	----------	----

Carried to Collection

BILL NO 13
PLASTERING
Robertson Fire Station

R

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Carried to Collection

R

BILL NO 13
PLASTERING
Robertson Fire Station

BILL NO 13

PLASTERING

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

67
68
69
70

Carried to Summary

R

BILL NO 13
PLASTERING
Robertson Fire Station

<u>Item No</u>		<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
	<u>BILL NO 14</u>			
	<u>TILING</u>			
	For preambles see "Model Preambles for Trades"			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Fixing</u>			
	Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat			
	Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts as recommended by the manufacturer of the tiles			
	<u>Descriptions</u>			
	Descriptions of tiling shall be deemed to include for symmetrical arrangement of tiling with cutting along both sides of panels and for all straight cutting			
	Descriptions of tiling shall be deemed to include for cutting and fitting around all sanitary ware and pipes, etc not exceeding 150mm diameter			
	Descriptions of tiling shall be deemed to include for soft grouted joints at positions of joints in the substructure or at centres in both directions as recommended by the tile manufacturers or which represents good practice			
	<u>WALL TILING</u>			
	<u>Half body 300x300mm porcelain tiles laid in true straight, vertical and horizontal 2mm joints, including patent stainless steel corner strips; in approved tile bedding adhesive in accordance with PW 371-A 12.1 (n and o). Finish off joints with grout in accordance with PW 371-A 12.1 (p and q) and SANS 10107. Colour to architects' approval.</u>			
1	Walls	m2		
2	Narrow widths	m2		
	<u>Carried to Collection</u>		R	
	<u>BILL NO 14</u>			
	<u>TILING</u>			
	<u>Robertson Fire Station</u>			

FLOOR TILING

300x300x8mm NON-SLIP full body matt porcelain floor tiles with 2mm joints on full tile cement bedding, in accordance with PW371-A and SANS 13006 group B1a water absorption equal or greater than 0.5%. Grout joints as per BS EN 13006 (PW371) 12.1 (p). 6mm wide movement joints to be observed with patent stainless steel expansion joint strips consisting of synthetic fibre inserts installed to manufacturer's instruction and as marked in the construction drawings.

3	Floors and landings	m2
4	Narrow widths	m2
5	100mm High skirtings of cut tiles	m
6	Supply only attic stock (number of boxes)	No

EDGE TRIMS, NOSINGS, ETC

"M-Trim"

7	7mm "PRE070.01" PVC round edge trims	m
8	10mm "ASE100.NA" aluminium straight edge trims	m
9	10mm "AFE100.NA" aluminium formable straight edge trims	m
10	25 x 10mm "ATIN100.NA" aluminium tile-in stair nosings	m

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BILL NO 14
TILING
Robertson Fire Station

R

BILL NO 14

TILING

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

72

73

Carried to Summary

R

BILL NO 14
TILING
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 15</u>			
<u>PLUMBING AND DRAINAGE</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Wire gratings</u>			
Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings			
<u>Rock excavations</u>			
No claim for rock excavation will be entertained unless the contractor has timeously notified the principal agent thereof prior to backfilling			
"Soft rock" and "hard rock" shall be as defined in "Earthworks"			
<u>Laying, backfilling, bedding, etc of pipes</u>			
Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions			
Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following:			
SANS 1200 L : Medium-pressure pipelines, SANS 1200 LD : Sewers and SANS 1200 LE : Stormwater drainage			
Pipe trenches, etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200 DB : Earthworks (Pipe trenches)			
Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding			
<u>Concrete pipes</u>			
Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings			
<u>Carried to Collection</u>		R	
<u>BILL NO 15</u>			
<u>PLUMBING AND DRAINAGE</u>			
<u>Robertson Fire Station</u>			

uPVC pipes and fittings

Drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Sanitary plumbing pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

"Geberit" HDPE (high density polyethylene) drainage and sanitary plumbing pipes and fittings

Pipes and fittings shall be installed in accordance with Geberit's installation recommendations and jointed with ring seal socket joints

Gratings, covers, etc

Gratings, covers, etc shall be as manufactured by "Saint-Gobain", unless otherwise described

French drains

Descriptions of french drains shall be deemed to include for battered sides and sloping bottoms with inlet chamber size 300 x 300mm internally under inlet pipe, from bottom of drain to top of pipe, formed of loosely packed, rough, hard stone walls and covered with precast concrete slab size 600 x 600 x 100mm thick and the rest of the drain filled in to the same height with similar stone graded from 300mm diameter at bottom to 50mm diameter at top, covered with galvanised corrugated iron sheets treated on both sides with bituminous paint and 300mm earthfilling over

Septic tanks

Descriptions of septic tanks shall be deemed to include concrete base slabs, jointing to drains, etc

uPVC pressure pipes and fittings

Pipes for water supply shall be of the class described

Pipes of 42mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

HDPE (high density polyethylene) pipes and fittings

Pipes shall be type 4 and of the class specified with "Plasson" or "Alprene" compression fittings

Carried to Collection

BILL NO 15
PLUMBING AND DRAINAGE
Robertson Fire Station

R

"Polycop" polypropylene pipes

Polypropylene pipes of 54mm diameter and smaller shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes, as described

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed

All pipe diameters are nominal external

Copper pipes

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

"Geberit Mepla" multilayer pipes

"Mepla" pipes of 16mm to 75mm diameters are made of inner layer of cross linked polyethylene (PE-Xb), covered with a butt welded aluminium supporting pipe and outer layer of a protective UV stabilised polyethylene (PE-HD) coating. The pipes are jointed lengthways or to fittings by non-positive connection through direct pressing of pipes onto fittings without sleeves and hygienically sealed

"Mepla" fittings are either polyvinylidene fluoride fittings (PVDF) or gunmetal fittings for threaded connections

Pipes shall be firmly fixed to walls, etc with "Geberit" clamps and clips with provision for accommodating thermal movement and jointed and fixed

All pipe diameters are nominal external

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include for :

- casting in, building in, chasing in and fixing to walls, etc, including chasing; or
- placing in ground or filling under solid floors, including necessary excavation, backfilling and ramming; or
- suspending not exceeding 1m below suspension level

Disinfection of potable water pipelines

Descriptions of all potable water pipelines shall be deemed to include for disinfection in accordance with 5.10 of SANS 1200 L

Carried to Collection

BILL NO 15

PLUMBING AND DRAINAGE

Robertson Fire Station

R

Reducing fittings

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

Paper wrapping to pipes

Pipes chased into masonry must be wrapped with two layers of stout brown paper tied with wire. Prices for wrapping of pipes shall include for all work to couplings and fittings

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with relevant overlaps for specific diameters of pipes. Prices for wrapping of pipes shall include for all work to couplings and fittings

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

Stainless steel for economy basins, domestic sinks, worktops and wash troughs shall be type 430 (17/0)

Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be type 304 (18/8)

Stainless steel for laboratory sinks, photographic equipment, etc shall be type 316 (18/8)

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

Flush pans

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

Steel sectional water tanks

Tanks shall comply with CKS 114

Geyser installations

Geyser installations shall comply with SANS 10254

General

Descriptions of ductile iron roof outlets shall be deemed to include joints to pipes and casting into concrete

Carried to Collection

BILL NO 15

PLUMBING AND DRAINAGE

Robertson Fire Station

R

Descriptions of pipes laid in and including trenches, sumps, catchpits, junction boxes, inspection chambers, french drains, septic tanks and the like shall be deemed to include for excavations, bedding of pipes, risk of collapse, keeping free of water, a dewatering system for removal of seepage water and water from other subterranean sources in the excavations designed and executed by the contractor, backfilling, compaction to a minimum of 93% modified AASHTO density and disposal of surplus material

Descriptions of sumps, catchpits, junction boxes, inspection chambers and the like shall be deemed to include reinforcement, step irons and channels where applicable

Descriptions for jointing of new to existing pipes shall be deemed to include searching for the existing pipe, exposing if necessary, cutting into, jointing and necessary fittings

Descriptions of washdown pans, slop hoppers, grease traps, septic tanks, etc shall be deemed to include for joints to soil pipes (pan connectors measured separately)

Descriptions of all sanitary fittings shall be deemed to include for silicone sealant pointing between the fittings and finished wall surfaces

Descriptions of copper service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to pipes

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Remeasurement

The contractor's attention is specifically drawn to the fact that the work in this bill has not been measured provisionally but measured from the drawings and will under no circumstances be remeasured

If during the execution of the contract the contractor finds that there are quantities which deviate from those in this bill of quantities, he must inform the principal agent and request that a contract instruction to this effect be issued to cover the cost thereof

Claims submitted late will not be accepted for inclusion in the final account

Design and supply

The contractor's attention is specifically drawn to the fact that the work in this bill has been measured provisionally and it is expected of the contractor to design the complete system and within one month, after appointment and in consultation with the principal agent, lodge his final measurement and subcontract value to the principal agent for acceptance, after which the whole installation will under no circumstances be remeasured or revalued

Carried to Collection

BILL NO 15
PLUMBING AND DRAINAGE
Robertson Fire Station

R

RAINWATER DISPOSAL**"Marley Vynadeep" uPVC**

1	125mm Half round eaves gutters	m
2	Extra over for stopped end	No
3	Extra over for angle	No
4	Extra over for outlet for 80mm diameter pipe	No
5	80mm Diameter rainwater pipes	m
6	Extra over for bend	No
7	Extra over for shoe	No
8	Spreader 250mm long for 80mm pipe	No
9	300 x 200 x 200mm Deep rainwater head with outlet for 80mm pipe	No

"Watertite" uPVC

10	100mm Diameter rainwater pipes	m
11	160mm Diameter rainwater pipes	m
12	Extra over for bend	No
13	Extra over for shoe	No
14	Extra over for eaves or plinth offset	No

"Watertite" aluminium

15	125 x 85mm Domestic ogee eaves gutters	m
16	Extra over for stopped end	No
17	Extra over for angle	No
18	Extra over for outlet for 75 x 50mm pipe	No
19	150 x 125mm Industrial ogee eaves gutters	m
20	Extra over for stopped end	No
21	Extra over for angle	No
22	Extra over for outlet for 100 x 75mm pipe	No

Carried to Collection**BILL NO 15****PLUMBING AND DRAINAGE****Robertson Fire Station**

R

23	140 x 150mm Industrial square eaves gutters	m			
24	Extra over for stopped end	No			
25	Extra over for angle	No			
26	Extra over for outlet for 100mm diameter pipe	No			
27	75 x 50mm Rainwater pipes	m			
28	Extra over for bend	No			
29	Extra over for shoe	No			
30	Extra over for eaves or plinth offset	No			
31	100 x 75mm Rainwater pipes	m			
32	Extra over for bend	No			
33	Extra over for shoe	No			
34	Extra over for eaves or plinth offset	No			
35	101mm Diameter rainwater pipes	m			
36	Extra over for bend	No			
37	Extra over for shoe	No			
38	Extra over for eaves or plinth offset	No			
39	T-shaped spreader 500mm long for 101mm diameter pipe with half closed ends and 20mm holes at 70mm centres	No			
40	500 x 300 x 300mm Deep rainwater head with outlet for 101mm diameter pipe	No			
<u>SLEEVES FOR ELECTRICAL AND TELEPHONE CABLES</u>					
<u>Class 6 modified uPVC pipes, including 1.6mm galvanised steel draw wires</u>					
41	110mm Pipes laid in and including trenches not exceeding 1m deep	m			
42	Set of two 110mm pipes laid in and including trenches not exceeding 1m deep	m			
43	Set of three 110mm pipes laid in and including trenches not exceeding 1m deep	m			
<u>Carried to Collection</u>					
<u>BILL NO 15</u>					
<u>PLUMBING AND DRAINAGE</u>					
<u>Robertson Fire Station</u>					

44	Set of six 110mm pipes in two tiers, one on top of the other, laid in and including trenches not exceeding 1m deep	m			
	<u>Extra over class 6 modified uPVC pipes for modified uPVC fittings</u>				
45	110mm 45 Degree bend	No			
46	110mm 90 Degree bend	No			
	<u>Inspection chambers (covers elsewhere)</u>				
47	Inspection chamber 900 x 900mm and not exceeding 0.75m deep internally	No			
	<u>Cast iron covers</u>				
48	600 x 600mm x 82kg Type 9B single seal cover and frame	No			
	<u>SOIL DRAINAGE</u>				
	<u>Existing services</u>				
49	Existing sewer manhole to be removed	No			
50	Closing of existing sewer line, 110mm uPVC, and reconnect with new sewer line, including pipe, fittings, bedding etc. complete as necessary	No			
	<u>Class 34 uPVC pipes</u>				
51	110mm Pipes vertically or ramped to rodding eyes, etc (no excavations)	m			
52	160mm Pipes vertically or ramped to rodding eyes, etc (no excavations)	m			
53	110mm Pipes laid in and including trenches not exceeding 1m deep	m			
54	160mm Pipes laid in and including trenches not exceeding 1m deep	m			
55	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m			
56	160mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m			
	<u>Extra over class 34 uPVC pipes for uPVC fittings</u>				
57	160 x 110mm Taper pipe	No			
58	110mm Bend	No			
59	160mm Bend	No			
	<u>Carried to Collection</u>			R	
	<u>BILL NO 15</u>				
	<u>PLUMBING AND DRAINAGE</u>				
	<u>Robertson Fire Station</u>				

60	110mm Junction	No			
61	160mm Junction	No			
62	160 x 110mm Reducing junction	No			
63	110mm Access pipe	No			
64	110mm Access bend	No			
65	160mm Access junction	No			
66	160 x 110mm Access reducing junction	No			
67	110mm Access double junction	No			
68	110mm Rodding eye	No			
	<u>"Geberit" HDPE pipes</u>				
69	110mm Pipes vertically or ramped to rodding eyes, etc (no excavations)	m			
70	110mm Pipes laid in and including trenches not exceeding 1m deep	m			
71	160mm Pipes laid in and including trenches not exceeding 1m deep	m			
72	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m			
73	160mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m			
	<u>Extra over "Geberit" HDPE pipes for HDPE fittings</u>				
74	110mm 45 Degree bend	No			
75	160mm 90 Degree long bend	No			
76	110 x 110mm 45 Degree Y-branch	No			
77	160 x 160mm 45 Degree Y-branch	No			
78	160 x 110mm 45 Degree reducing Y-branch	No			
79	110 x 110mm 45 Degree access pipe with round access cover	No			
	<u>uPVC gulleys</u>				
80	110mm Gulley not exceeding 0.75m deep	No			
81	110mm Dished gulley not exceeding 0.75m deep	No			
	<u>Carried to Collection</u>			R	
	<u>BILL NO 15</u>				
	<u>PLUMBING AND DRAINAGE</u>				
	<u>Robertson Fire Station</u>				

<u>Inspection chambers (covers elsewhere)</u>				
82	Inspection chamber 450 x 600mm and not exceeding 0.75m deep internally	No		
83	Inspection chamber 450 x 600mm and exceeding 0.75m and not exceeding 1.00m deep internally	No		
84	Inspection chamber 450 x 600mm and exceeding 2.50m and not exceeding 2.75m deep internally with the lower 1.50m depth increased to 600 x 750mm internally and 150mm precast concrete reducer slab over enlarged bottom portion	No		
<u>Precast concrete circular inspection chambers (covers elsewhere)</u>				
85	Inspection chamber 1.00m diameter and not exceeding 0.75m deep internally	No		
86	Inspection chamber 1.00m diameter and exceeding 0.75m and not exceeding 1.00m deep internally	No		
87	Inspection chamber 1.00m diameter and exceeding 2.50m and not exceeding 2.75m deep internally with the lower 1.50m depth increased to 1.25m diameter and 150mm precast concrete reducer slab over enlarged bottom portion	No		
<u>"Cape Concrete" precast concrete covers</u>				
88	675mm Diameter x 150mm thick cover and frame	No		
<u>"National Manhole Covers" polymer concrete covers</u>				
89	450 x 600mm x 63kg Heavy duty cover and frame	No		
90	535mm Diameter x 86kg Type 2A heavy duty cover and frame	No		
<u>Cast iron covers</u>				
91	450 x 600mm x 72kg Type 8A double seal manhole cover and frame	No		
92	550mm Diameter x 176kg Type 2A non-ventilated cover and frame	No		
<u>Sundries</u>				
93	Excavate for, locate, take up and remove 110mm soil drain pipes not exceeding 1m deep, including backfilling, ramming, etc	m		
94	Concrete encasing to 110mm horizontal pipes	m		
95	Concrete encasing to 110mm vertical pipes	m		
96	250 x 250 x 40mm Precast concrete inspection eye marker slab set in ground	No		
<u>Carried to Collection</u>			R	
<u>BILL NO 15</u>				
<u>PLUMBING AND DRAINAGE</u>				
<u>Robertson Fire Station</u>				

97	110mm uPVC "ABC" cleaning eye	No			
98	100mm Cast iron "ABC" cleaning eye	No			
99	Jointing of new 110mm with existing 110mm uPVC pipe	No			
100	Cut into side of existing inspection chamber for and connect 110mm pipe, including inserting 110mm channel junction and making good concrete benching	No			
101	Testing soil drainage system		Item		
<u>SANITARY PLUMBING</u>					
<u>uPVC pipes</u>					
102	40mm Pipes	m			
103	50mm Pipes	m			
104	110mm Pipes	m			
105	110mm Pipes exceeding 1m and not exceeding 2m below suspension level	m			
106	160mm Pipes	m			
<u>Extra over uPVC pipes for fittings</u>					
107	50mm Stop end	No			
108	50 x 32mm BSP adaptor	No			
109	50 x 38mm BSP adaptor	No			
110	110 x 50mm Eccentric reducer	No			
111	40mm Bend	No			
112	50mm Bend	No			
113	110mm Bend	No			
114	160mm Bend	No			
115	40mm Junction	No			
116	50mm Junction	No			
117	110mm Junction	No			
118	110 x 50mm Reducing junction	No			
<u>Carried to Collection</u>					
<u>BILL NO 15</u>					
<u>PLUMBING AND DRAINAGE</u>					
<u>Robertson Fire Station</u>					

Sundries

163	Unreinforced concrete thrust blocks at bends, tees, etc, including necessary extra excavation, formwork, etc	m3
164	150 x 150mm Type 11A cast iron stopcock box, including brick chamber below not exceeding 0.50m deep internally	No
165	300 x 200mm Type 10A cast iron meter box, including brick chamber below not exceeding 0.50m deep internally	No
166	450 x 450mm Valve chamber not exceeding 0.75m deep internally (cover and frame elsewhere)	No
167	450 x 450 x 28.5kg Type 14B cast iron cover and frame	No
168	Testing water pipe system	

Item

WATER SUPPLIES TO FIRE APPLIANCESClass 16 modified uPVC pipes

169	90mm Pipes laid in and including trenches	m
170	110mm Pipes laid in and including trenches	m

Extra over class 16 modified uPVC pipes for modified uPVC fittings

171	90mm 90 Degree bend	No
172	110mm 90 Degree bend	No

Extra over class 16 modified uPVC pipes for SG iron fittings

173	90mm End cap	No
174	110mm End cap	No
175	90 x 63mm Female reducer	No
176	110 x 90mm Female reducer	No
177	90 x 63mm Male/female reducer	No
178	90 x 75mm Male/female reducer	No
179	110 x 90mm Male/female reducer	No
180	90mm Flange adaptor drilled to table 16, including connecting bolts, gaskets, etc	No

Carried to Collection

R

BILL NO 15**PLUMBING AND DRAINAGE****Robertson Fire Station**

181	110mm Flange adaptor drilled to table 16, including connecting bolts, gaskets, etc	No		
182	90mm Saddle for 25mm branch, including nuts and bolts	No		
183	110mm Saddle for 25mm branch, including nuts and bolts	No		
184	90mm Equal tee	No		
185	110mm Equal tee	No		
186	90 x 75mm Reducing tee	No		
187	110 x 63mm Reducing tee	No		
188	110 x 75mm Reducing tee	No		
189	90mm Hydrant tee drilled to table 16, including connecting bolts, gaskets, etc	No		
190	110mm Hydrant tee drilled to table 16, including connecting bolts, gaskets, etc	No		
191	110mm Scour tee drilled to table 16, including connection bolts, gaskets, etc	No		
	<u>Class 1 copper pipes</u>			
192	28mm Pipes	m		
193	35mm Pipes	m		
194	42mm Pipes laid in and including trenches	m		
	<u>Extra over class 1 copper pipes for capillary fittings</u>			
195	28mm Fittings	No		
196	35mm Elbow	No		
197	35mm Tee	No		
198	35mm Reducing tee	No		
199	35mm Threaded adaptor	No		
200	35mm Threaded bent adaptor	No		
	<u>Extra over class 1 copper pipes for brass compression fittings</u>			
201	28mm Fittings	No		
	<u>Carried to Collection</u>		R	
	<u>BILL NO 15</u>			
	<u>PLUMBING AND DRAINAGE</u>			
	<u>Robertson Fire Station</u>			

202	42mm Reducer	No			
203	35mm Elbow	No			
204	42mm Elbow	No			
205	35mm Tee	No			
206	42mm Tee	No			
	<u>Sundries</u>				
207	Unreinforced concrete thrust blocks at bends, tees, etc, including necessary extra excavation, formwork, etc	m3			
208	225 x 225mm Type 11B cast iron stopcock box, including brick chamber below not exceeding 0.50m deep internally	No			
209	375 x 300mm Type 10C cast iron meter box, including brick chamber below not exceeding 0.50m deep internally	No			
210	450 x 450mm Valve chamber not exceeding 0.75m deep internally (cover and frame elsewhere)	No			
211	450 x 450mm x 28.5kg Type 14B cast iron cover and frame	No			
212	Testing fire water pipe system		Item		
	<u>PIPE INSULATION</u>				
	<u>15mm thick "Sagex Megaphen" insulation closely fitted to pipes, etc with joints and ends butted firmly together and strapped securely into position to</u>				
213	22mm Pipes, including couplings	m			
214	28mm Pipes, including couplings	m			
215	35mm Pipes, including couplings	m			
216	Extra over for working around 22mm fittings	No			
217	Extra over for working around 28mm fittings	No			
218	Extra over for working around 35mm elbow	No			
219	Extra over for working around 35mm tee	No			
220	Extra over for working around 35mm valve	No			
	<u>Carried to Collection</u>			R	
	<u>BILL NO 15</u>				
	<u>PLUMBING AND DRAINAGE</u>				
	<u>Robertson Fire Station</u>				

15mm Thick "Isover Snap On" plain glasswool insulation
closely fitted to pipes, etc with joints and ends butted
firmly together and strapped securely into position to

221	22mm Pipes, including couplings	m
222	28mm Pipes, including couplings	m
223	35mm Pipes, including couplings	m
224	Extra over for working around 22mm fittings	No
225	Extra over for working around 28mm fittings	No
226	Extra over for working around 35mm elbow	No
227	Extra over for working around 35mm tee	No
228	Extra over for working around 35mm valve	No

Carried to Collection

BILL NO 15
PLUMBING AND DRAINAGE
Robertson Fire Station

R

PIPE PROTECTION

Two layers of stout brown paper lagging tightly wrapped around pipes, etc and tied with wire prior to building in to

229	15mm Pipes, including couplings, fittings, etc	m
230	22mm Pipes, including couplings, fittings, etc	m
231	28mm Pipes, including couplings, fittings, etc	m

SANITARY FITTINGS**"Franke" stainless steel**

232	"CASCADE CDX621-120" Stainless steel 1200x500mm inset double end bowl sink	No
233	SIRX342 Washtrough, (product code 2560003), 500x450x240mm deep wash trough	No

"Vaal"

234	Standard toilet pan of vitreous china "TUSCANY" or similar approved - product code 772863	No
235	Paraplegic toilet pan of vitreous china "PEARL PARAPLEGIC" (or similar approved - product code 7300SC	No

"Cobra"

236	Round wall hung basin or similar approved. 495mm long x 430mm wide	No
237	Small round wall hung basin or similar approved. 400mm long x 320mm wide	No
238	Paraplegic round wall hung basin or similar approved. 495mm long X 430mm wide	No

"Kwikot"

239	150 Litre "600 Dual" standard floor/wall mounted electric water heater	No
240	"Kwiktray" horizontal polyethylene drip tray for 150 litre geyser with outlet, including timber bearers	No
241	Kwikot 4kW heatpump complete, mounted on heavy duty wall brackets	No
242	Kwikot 10kW heatpump complete, mounted on heavy duty wall brackets	No

Carried to Collection

BILL NO 15

PLUMBING AND DRAINAGE

Robertson Fire Station

R

	<u>"Sirac"</u>				
243	Heat Pump, model IHP200 complete	No			
244	Heat Pump, model IHP300 complete	No			
	<u>TAPS, VALVES, ETC</u>				
	<u>"Franke"</u>				
245	PROJECTLINE swivel chrome kitchen sink mixer product code 1150021	No			
	<u>"Cobra"</u>				
246	Single-lever mixer product code FSWM1CNI-0GT0426	No			
247	Standard single-lever basin mixer tap product code FBN1D1AM-0GT0427	No			
248	Triangular shower head 76mm product code FSWHT1GN-0GT0156	m			
249	Standard hose bib trap, brass - product code FBBHN1CD-7FT01	No			
	<u>WASTE UNIONS, ETC</u>				
	<u>"Cobra Watertech"</u>				
250	32mm 320CP bath overflow union	No			
251	32mm 301CP basin waste union	No			
252	32mm 303CP basin waste union with 309-32CP anti-theft plug	No			
253	40mm 316CP bath or sink waste union	No			
	<u>TRAPS, ETC</u>				
	<u>"Flexitrap" rubber</u>				
254	32mm Plain "P" or "S" trap	No			
255	40mm Plain "P" or "S" trap	No			
256	40mm Plain bath combination trap with overflow outlet and pipe	No			
257	40 x 300mm Double bowl wash trough or sink combination with "P" trap	No			
	<u>Carried to Collection</u>				
	<u>BILL NO 15</u>				
	<u>PLUMBING AND DRAINAGE</u>				
	<u>Robertson Fire Station</u>				

	<u>"Cobra Watertech"</u>				
258	75mm VA3.113CP urinal domical grating	No			
259	40mm 373RB shower trap with CP grating	No			
260	50mm VA2.342RB shower trap with VA3.334-4RB shower waste and CP grating	No			
261	32mm 345/40CP bottle trap	No			
262	40mm 365/40CP bottle trap	No			
	<u>"Saint-Gobain Supercast" cast iron</u>				
263	100mm "P" trap	No			
	<u>FIRE APPLIANCES, ETC</u>				
	<u>"Chubb"</u>				
264	"Everyway" hose reel complete with 30m hose, chromium plated stopcock, shut-off nozzle and wall bracket	No			
265	4.5kg Dry chemical powder fire extinguisher mounted on and including 450 x 600mm F24 ABS plastic chevron backing with consecutive numbering stamped on	No			
266	9kg Dry chemical powder fire extinguisher on and including a painted backing board	No			
267	2kg Carbon dioxide fire extinguisher on and including a painted backing board	No			
268	5kg Carbon dioxide fire extinguisher on and including a painted backing board	No			
269	100mm Diameter 2500 kPa pressure gauge syphon and stopcock, including tapped hole in pipe	No			
270	80 x 65mm Brass right angle hydrant valve with cap and chain	No			
271	80 x 65mm Brass double booster pump connection and Y-piece, with caps and chains	No			
	<u>"Woodlands Fire"</u>				
272	100mm "WHE" hydrant, including flanges, 100mm duck foot bend, bolts, gaskets, etc	No			
273	100mm "WNV" flanged non-return valve	No			
274	100mm Flanged gate valve	No			
	<u>Carried to Collection</u>			R	
	<u>BILL NO 15</u>				
	<u>PLUMBING AND DRAINAGE</u>				
	<u>Robertson Fire Station</u>				

BILL NO 15

PLUMBING AND DRAINAGE

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95

Carried to Summary

R

BILL NO 15
PLUMBING AND DRAINAGE
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 18</u>			
<u>PAINTWORK</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>DESCRIPTIONS</u>			
Descriptions of paintwork shall be deemed to include for all cutting in			
<u>PREPARATORY WORK TO EXISTING SURFACES</u>			
<u>Plaster or concrete surfaces</u>			
Surfaces shall be thoroughly cleaned down by high pressure water jet and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed. All existing walls to be made good where damaged by removals, furniture, etc, and all screw and nail holes and cracks shall be opened, primed with plaster primer, filled with a suitable filler and finished smooth			
<u>Metal surfaces</u>			
Surfaces shall be thoroughly rubbed and cleaned down by means of grit blasting or wire brushing. Blistered or peeling paint, including all traces of corrosion, shall be completely removed down to bare metal			
<u>Previously painted wood surfaces</u>			
Surfaces shall be thoroughly cleaned down by scraping and sanding all loose and flaking paint. All dust and surface contamination are to be removed by wiping down. All exposed nail heads are to be punched in and primed with one coat metal primer. Holes, cracks and crevices shall be primed with wood primer, filled with wood stopping and finished smooth			
<u>Previously varnished/natural wood surfaces</u>			
Surfaces shall be thoroughly cleaned down with existing coatings removed by sanding and/or using paint remover. All residual paint remover and surface contamination are to be removed by washing down, allowed to dry and sandpapered to a uniformed surface. All exposed nail heads are to be punched in and primed with one coat metal primer. Holes, cracks and crevices shall be treated with woodcare pretreatment, filled with wood stopping and finished smooth			
<u>Carried to Collection</u>			R
<u>BILL NO 18</u>			
<u>PAINTWORK</u>			
<u>Robertson Fire Station</u>			

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon" specifications unless otherwise specified

COLOURS

Unless otherwise described paintwork on ceilings shall be deemed to be in the "White" colour group and paintwork on all other components shall be deemed to be in the "Pastel" colour group in accordance with the Natural Colour System (NCS) adopted by the SA National Standards

ON PLASTER, ETC

Prepare, stop and apply one coat merit plaster primer and two coats Plascon Double Velvet acrylic PVA paint for interior use to

1	Internal walls	m2
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Prepare, stop and apply one coat merit plaster primer (UC56) thinned 20% with turpentine, Painted with one coat universal undercoat and finished with two coats eggshell enamel

2	External walls	m2
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ON CONCRETE

Prepare, stop and apply one coat merit plaster primer and two coats Plascon Polvin acrylic PVA

3	Soffits	m2
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ON PLASTER BOARD

Prepare, stop and apply one coat PVA Primer (X107) and two coats Plascon Double Velvet acrylic PVA paint for interior use to

4	Ceilings, cornices, bulkhead and partitioning	m2
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ON METAL

Wash down thoroughly with degreaser and rinse with water removing all traces of degreaser. Allow to dry and prime with one coat primer and two coats polyurethane enamel paint on steel:

5	On door frames	m2
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Carried to Collection

BILL NO 18
PAINTWORK
Robertson Fire Station

R

ON WOOD

Prepare, stop and apply one coat timber undercoat and two coats Plascon Double Velvet acrylic PVA paint

6 Back of frames, skirtings, etc m

Prepare, stop and paint one coat wood primer (UC2), stop with 'Mendall 90', one Plascon Merit universal undercoat (UC1) and two coats Plascon Velvagro enamel paint to

7 General surfaces of doors m2

8 General surfaces of door frames m2

9 General surfaces of skirtings m2

Prepare, stop and paint one coat wood primer (UC2), stop with 'Mendall 90', one Plascon Merit universal undercoat (UC1) and two coats Plascon Velvagro U84-3 enamel paint to

10 General surfaces of doors m2

11 General surfaces of door frames m2

12 General surfaces of timber trusses m2

Prepare, stop and paint one coat wood primer (UC2), stop with 'Mendall 90', one Plascon Merit universal undercoat (UC1) and two coats Plascon Velvagro 160 enamel paint to

13 General surfaces of doors m2

14 General surfaces of door frames m2

Prepare, stop and paint three coats approved polyurethane varnish to

15 General surfaces of slatted benches (both sides measured over the full flat area) m2

16 General surfaces of slatted gates (both sides measured over the full flat area) m2

17 General surfaces of doors m2

One coat Plascon Timesaver primer (X345) and two coats Plascon Polvin Super Acrylic PVA

18 On fascias and barge boards m2

Carried to Collection

R

BILL NO 18

PAINTWORK

Robertson Fire Station

BILL NO 18

PAINTWORK

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

99

100

101

Carried to Summary

R

BILL NO 18
PAINTWORK
Robertson Fire Station

<u>Item No</u>	<u>Quantity</u>	<u>Rate</u>	<u>Amount</u>
<u>BILL NO 19</u>			
<u>EXTERNAL WORK</u>			
For preambles see "Model Preambles for Trades"			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Landscaping specification</u>			
Refer to the landscape architect's specification annexed to these bills of quantities which is supplementary to and shall take precedence over the "Model Preambles for Trades 2008 published by the Association of South African Quantity Surveyors"			
<u>Filling and layer work materials</u>			
References such as "G1", "G2", etc and "C1", "C2", etc in descriptions of filling and layer work materials refer to corresponding references in the document "Guidelines for Road Construction Materials. TRH 14 : 1985" compiled by the Committee of State Road Authorities and the properties set out therein for each kind shall be applicable to the respective materials described hereinafter			
<u>User note:</u> <i>When no information regarding density and other tests is available the following preamble in respect of testing may be inserted</i>			
<u>Testing of material and filling</u>			
Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the relevant SANS 1200 specification			
<u>Cutting</u>			
Where an item for filling of gaps with concrete against edge restraints is not measured, then descriptions of block pavings shall be deemed to include for straight cutting			
Descriptions of block pavings shall be deemed to include for circular cutting around pipes, etc not exceeding 150mm diameter			
<u>Stormwater channels</u>			
Descriptions of channels shall be deemed to include all necessary excavation and disposal of surplus material			
<u>Carried to Collection</u>			R
<u>BILL NO 19</u>			
<u>EXTERNAL WORK</u>			
<u>Robertson Fire Station</u>			

ROADWORK AND PARKING

Site clearance

- | | | |
|---|--|----|
| 1 | Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc | m2 |
|---|--|----|

Open face excavations in earth over sloping site

- | | | |
|---|---|----|
| 2 | Open face excavations to form platform and depositing excavated material on site, including haulage not exceeding 1km from perimeter of excavations | m3 |
|---|---|----|

Excavations in earth not exceeding 2m deep

- | | | |
|---|---|----|
| 3 | Over site between buildings, retaining walls, etc to reduce levels and depositing excavated material in prescribed stock piles on site | m3 |
| 4 | 150mm Deep over site between buildings, retaining walls, etc to remove top soil and depositing excavated material in prescribed stock piles on site | m3 |

Extra over bulk excavation in earth for excavation in (Provisional)

- | | | |
|---|-----------|----|
| 5 | Soft rock | m3 |
| 6 | Hard rock | m3 |

Extra over bulk excavation in earth for breaking up and removing (Provisional)

- | | | |
|---|-----------------------|----|
| 7 | Brickwork | m3 |
| 8 | Unreinforced concrete | m3 |
| 9 | Reinforced concrete | m3 |

Extra over all excavations for carting away

- | | | |
|----|--|----|
| 10 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor | m3 |
|----|--|----|

Keeping excavations free of water

- | | | |
|----|---|------|
| 11 | Keeping excavations free of water other than subterranean water | Item |
|----|---|------|

Dewatering

- | | | |
|----|---|------|
| 12 | Allow for a dewatering system for removal of seepage water and water from other subterranean sources in the excavations designed and executed by the contractor | Item |
|----|---|------|

Carried to Collection

BILL NO 19

EXTERNAL WORK

Robertson Fire Station

R

Earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage exceeding 100m and not exceeding 200m from perimeter of excavations or stock piles

13	Over site compacted to 95% modified AASHTO density	m3
14	Subbase course over site compacted to 98% modified AASHTO density	m3
15	Base course over site stabilised with 4% cement and compacted to 98% modified AASHTO density	m3

Earth filling supplied by the contractor

16	Under roadways, etc of G7 material in accordance with SANS 1200 DM compacted to 93% modified AASHTO density	m3
17	Subbase course under roadways, etc of G5 material in accordance with SANS 1200 ME compacted to 98% modified AASHTO density	m3
18	Base course under roadways, etc of G4 material in accordance with SANS 1200 MF, stabilised with 4% cement and compacted to 97% modified AASHTO density	m3

Preparation of sub-grade

19	Compaction of ground surface under roadways, etc by wetting and compacting with 40 passes of a 3-sided 25 kilo Joule high energy impact compactor	m2
20	Compaction of ground surface under roadways, etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% modified AASHTO density	m2

Additional tests required by the principal agent

21	In-situ dry density test in accordance with method A10(b) of TMH 1	No
22	Maximum dry density and optimum moisture content test in accordance with method A7 of TMH 1	No
23	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No
24	CBR test in accordance with method A8 of TMH1	No
25	UCS test in accordance with method A14 of TMH1	No

Bituminous premix road surfacing in accordance with SANS 1200 MG

26	MC-30 Cutback bitumen primer to roadways, etc	m2
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Carried to Collection

BILL NO 19
EXTERNAL WORK
Robertson Fire Station

R

220 x 97 x 65mm "Technicrete Double Zig-Zag" interlocking segmented block pavings in accordance with SANS 1200 MJ and including 20mm sand bed with butt joints and with a dry cement/sand mixture well rubbed into all joints, wet gently with sprinkler and all excess sand swept off

41	Pavings to sidewalks, etc in herringbone pattern	m2
42	Circular cutting	m
43	Extra over paving for solid header course	m

220 x 97 x 80mm Grey coloured "Technicrete Double Zig-Zag" interlocking segmented block pavings in accordance with SANS 1200 MJ and including 20mm sand bed with butt joints and with a dry cement/sand mixture well rubbed into all joints, wet gently with sprinkler and all excess sand swept off

44	Pavings to roadways, etc in herringbone pattern	m2
45	80mm Thick 30MPa Multi blend double zig-zag interlocking pavers and lay in 90° herringbone pattern on and including 20mm sand bed with butt joints and with a dry cement/sand mixture well rubbed into all joints, wet gently with sprinkler and all excess sand swept off	m2
46	Circular cutting	m
47	Extra over paving for solid header course	m

Precast concrete kerbs, channels, etc, including excavation, backfilling, bases, haunching, bedding, jointing, pointing, etc

48	75 x 150mm High edgings (SANS 927 fig 12)	m
49	75 x 150mm High edgings (SANS 927 fig 12) circular on plan exceeding 4m radius formed with straight edgings	m
50	75 x 150mm High edgings (SANS 927 fig 12) circular on plan not exceeding 4m radius formed with short lengths of straight edgings	m
51	300 x 125mm High channels (SANS 927 fig 14)	m
52	300 x 125mm High channels (SANS 927 fig 14) circular on plan exceeding 4m radius formed with straight channels	m
53	300 x 125mm High channels (SANS 927 fig 14) circular on plan not exceeding 4m radius formed with short lengths of straight channels	m
54	150 x 250mm High kerbs (SANS 927 fig 4)	m

Carried to Collection

BILL NO 19
EXTERNAL WORK
Robertson Fire Station

R

55	150 x 250mm High kerbs (SANS 927 fig 4) circular on plan exceeding 4m radius formed with straight kerbs	m
56	150 x 250mm High kerbs (SANS 927 fig 4) circular on plan not exceeding 4m radius formed with short lengths of straight kerbs	m
<u>ROAD MARKINGS</u>		
<u>Road markings on bituminous premix in accordance with clause 5.3 of SANS 1200 MM</u>		
57	Lines 100mm wide	m
58	Lines 300mm wide	m
59	1.25m Diameter type GM7 stop sign (area = 1.80m ²)	No
<u>Thermoplastic road markings on concrete in accordance with clause 5.3 of SANS 1200 MM</u>		
60	Lines 150mm wide	m
61	Numeral or letter 400mm high	No
62	4.00m Long type WM7/RM8 traffic arrow (area = 1.43m ²)	No

Carried to Collection

BILL NO 19
EXTERNAL WORK
Robertson Fire Station

R

STORMWATER CHANNELS

"Cape Concrete" precast concrete surface water channels

63	480 x 190mm Type W4 channels	m
64	Extra over for angles, intersections, ends, dressing into sides of catchpits, etc	No

FLAG POLE

Flagpole including excavations, concrete, brickwork, backfill, plaster signage, etc. completel as per details on Architect's drawing RFS/21 401 TEN

65	Entrance flag pole	No
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CARPORTS

2400mm high 75mm dia galvanized steel column, with 50mm dia cross framed beams to top and covered with grey shade cloth including excavations, backfilling, concrete, leveling etc. (Section HH on Architect's drawing RFS/21 301 TEN)

66	Shadenet carport	No
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Carried to Collection

BILL NO 19
EXTERNAL WORK
Robertson Fire Station

R

BILL NO 19

EXTERNAL WORK

COLLECTION

Total Brought Forward from Page No.

Page
No

Amount

103
104
105
106
107
108
109

Carried to Summary

R

BILL NO 19
EXTERNAL WORK
Robertson Fire Station

<u>SUMMARY</u>		<u>Page No</u>	<u>Amount</u>
<u>Bill No</u>			
1	EARTHWORKS	9	
2	CONCRETE, FORMWORK AND REINFORCEMENT	17	
3	PRECAST CONCRETE	18	
4	MASONRY	26	
5	WATERPROOFING	29	
6	ROOF COVERINGS, CLADDINGS, ETC	33	
7	CARPENTRY AND JOINERY	40	
8	CEILINGS, PARTITIONS AND ACCESS FLOORING	46	
9	FLOOR COVERINGS, WALL LININGS, ETC	47	
10	IRONMONGERY	54	
11	STRUCTURAL STEELWORK	59	
12	METALWORK	66	
13	PLASTERING	71	
14	TILING	74	
15	PLUMBING AND DRAINAGE	96	
16	ELECTRICAL WORK	97	
17	GLAZING	98	
18	PAINTWORK	102	
19	EXTERNAL WORK	110	
<u>Robertson Fire Station</u>			