Item No		Quantity	Amount

SECTION NO. 1

BILL NO.1

PRELIMINARIES

MEANING OF TERMS "TENDER / TENDERER"

Any reference to the words "Tender" or "Tenderer" herein and/or in any other documentation shall be construed to have the same meaning as the words "Bid" or "Bidder"

AGREEMENT

The agreement is to be the JBCC Series 2000 Principal Building Agreement (Edition 4.1) prepared by the Joint Building Contracts Committee, March 2005

PRELIMINARIES

The JBCC Preliminaries Code 2103, May 2005 edition for use with the JBCC Principal Building Agreement Edition 4.1, Code 2101, March 2005 is taken to be incorporated herein. The tenderer is deemed to have referred to these documents for the full intent and meaning of each clause. These clauses are referred to by number and heading only. Where standard clauses or options are not applicable to the contract such modifications or corrections as are necessary are given under each relevant clause. Where an item is not relevant to this specific contract such item is marked. "N/A" signifying "Not Applicable"

PRICING OF PRELIMINARIES

Should Option A, as set out in clause B10.3.1 hereinafter be used for the adjustment of preliminaries then each item priced is to be allocated to one or more of the three categories:

Fixed, Value Related or Time Related and the respective amounts entered in the spaces provided under each item

Items not priced in these Preliminaries shall be deemed to be included elsewhere in these Bills of Quantities

Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading

SECTION A: JBCC PRINCIPAL BUILDING AGREEMENT

Definitions (A1)

Carried to Collection R

1 Definitions and interpretation (clause 1)

Clause 1.1 Definition of "**Agreement"** is amended by replacing it with the following:

Agreement means the agreement arising from the signing of the Form of Offer and Acceptance by the parties.

Clause 1.1 Definition of "**Bills of Quantities"** is amended by adding the following:

"...and the Pricing Instructions contained in the Pricing Data" after the word measuring system.

Clause 1.1 Definition of "**Contract Documents"** is amended by adding the following:

".....this Agreement and all other documents referenced therein.." after the word this document"

Clause 1.1 Definition of "**Contract Drawings"** is amended by replacing it with the following:

Contract Drawings means the drawings upon which the tender was accepted and used in preparing the bills of quantities and are available for viewing at the offices of the Principal Agent at the time of tender

Clause 1.1 Definition of "**Contract Sum"** is amended by replacing it with the following:

Contract Sum means the total of prices in the Form of Offer and Acceptance.

Clause 1.1 Definition of "**Schedule"** is amended by adding the following:

".....and in the **Contract Data"**. at the end on the sentence ending with **agreement**

Clause 1.1 Definition of "**Commencement Date**" is added:

"**Commencement date**" means the date that the **agreement**, made in terms of the Form of Offer and Acceptance, comes into effect

Clause 1.1 Definition of "**Construction Guarantee"** is amended by replacing it with the following:

"Construction guarantee" means guarantee at call obtained by the **contractor** from an institution approved by the **employer** in terms of the **employer's** construction guarantee form as selected in the **schedule**

Clause 1.1 Definition of "**Construction Period**" is amended by replacing it with

Carried to Collection R

the following:

"**Construction period**" means the period commencing on the commencement date and ending on the date of practical completion

Clause 1.1 Definition of "**Corrupt Practice**" is added:

"Corrupt Practice" means the offering , giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution

Clause 1.1 Definition of "**Fraudulent Practice**" is added:

"Fraudulent Practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practice among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.

Clause 1.1 Definition of "**Interest**" is amended by replacing it with the following:

"**Interest**" means the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be the rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999).

Clause 1.1 Definition of "**Principal Agent**" is amended by replacing it with the following:

"Principal Agent" means the person or entity appointed by the **employer** and named in the **schedule**. In the event of a **principal agent** not being appointed, then all the duties and obligations of a **principal agent** as detailed in the **agreement** shall be fulfilled by a representative of the **employer** as named in the **schedule**.

Clause 1.1 Definition of "**Security**" is amended by replacing it with the following:

Security" means the form of security provided by the **employer** or **contractor**, as stated in the **schedule**, from which the **contractor** or **employer** may recover expense or loss

	Fixed	Item	
	Value Related	Item	
	Time Related	Item	
	Carried to Collection	R	

	Objective and Preparation (A2 - A14)				
2	Offer, acceptance and performance (clause 2)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
3	Documents (clause 3)				
	Clause 3.2.1 is amended by replacing "14.1" with "14.0"				
	Clause 3.7 is amended by the addition of the following:				
	The contractor shall supply and keep a copy of the JBCC Series 2000 Principal Building Agreement and Preliminaries applicable to this contract **on the site,** to which **the employer, principal agent and agents** shall have access at all times.				
	Clause 3.10 is amended by replacing the second reference to "**principal agent"** with the word "**employer**"				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
4	Design responsibility (clause 4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
5	Employer's agents (clause 5)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
6	Contractor's site representative (clause 6)				
		Fixed	Item		
		Carried to Collection	R		

		Value Related	Item	
		Time Related	Item	
7	Compliance with laws and regulations (clause 7) Note: A separate clause has been included in Section C: Specific Preliminaries of the **bills of quantities** for the **contractor** to have the opportunity to price for all the requirements of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
8	Works risk (clause 8)			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
9	Indemnities (clause 9) Clause 9.0 is amended by adding Clause 9.1.4: The **contractor** indemnifies and holds harmless the **employer** against all liability, losses, claims, damages, penalties, actions, proceedings or judgments (collectively referred to as "Losses") arising from any infringement of letters, patent design, trademark, name, copyright or other protected rights in respect of any machine, plant, work, materials, thing, system or method of using, fixing, working or arrangement used or fixed or supplied by the **contractor**, but such indemnity shall not cover any use of the equipment of part thereof otherwise than in accordance with the provisions of the specification. All payments and royalties payable in one sum or by installments or otherwise shall be included by the **contractor** in the price and shall be paid by him to those to whom they may be payable. The **contractor** shall reimburse the **employer** for all legal and other costs and expenses, including without limitation attorney's fees on attorney-client scale incurred by the **employer** in connection with investigation, defending or settling any Losses in connection with pending or threatening litigation in which the **employer** is a party.			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
		Carried to Collection	R	

10 Works insurances (clause 10)

Clause 10.0 is amended by the addition of the following clauses

10.5 Damage to the Works

(a) Without in any way limiting the **contractor's** obligations in terms of the contract, the **contractor** shall bear the full risk of damage to and/or destruction of the **works** by whatever cause during construction of the **works** and hereby indemnifies and holds harmless the **employer** against any such damage. The **contractor** shall take such precautions and security measures and other steps for the protection and security of the **works** as the **contractor** may deem necessary

b) The **contractor** shall at all times proceed immediately to remove or dispose of any debris arising from damage to or destruction of the **works** and to rebuild, restore, replace and/or repair the **works**

(c) The **employer** shall carry the risk of damage to or destruction of the **works** and material paid for by the **employer** that is the result of the excepted risks as set out in 10.6

(d) Where the **employer** bears the risk in terms of this contract, the **contractor** shall**,** if requested to do so, reinstate any damage or destroyed portions of the **works** and the costs of such reinstatement shall be measured and valued in terms of 32.0 hereof

10.6 Injury to Persons or loss of or damage to Properties

(a) The **contractor** shall be liable for and hereby indemnifies the **employer** against any liability, loss, claim or proceeding whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever arising out of or in the course of or caused by the execution of the **works** unless due to any act or neglect of any person for whose actions the **employer** is legally liable

(b) The **contractor** shall be liable for and hereby indemnifies the **employer** against any liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person, arising out of or in the course of or by reason of the execution of the **works** unless due to any act or neglect of any person for whose actions the **employer** is legally liable

c) The **contractor** shall, upon receiving a **contract instruction** from the **principal agent,** cause the same to be made good in a perfect and workmanlike manner at his own cost and in default thereof the **employer** shall be entitled to cause it to be made good and to recover the cost thereof from the **contractor** or to deduct the same from amounts due to the **contractor**

(d) The **contractor** shall be responsible for the protection and safety of such

Carried to Collection R

portions of the premises placed under his control by the **employer** for the purpose of executing the **works** until the issue of the **certificate of practical completion**

(e) Where the execution of the **works** involves the risk of removal of or interference with support to adjoining properties including land or structures or any structures to be altered or added to, the **contractor** shall ogtain adequate insurance and will remain adequately insured or insured to the specific limit stated in the contract against the death of or injury to persons or damage to such property consequent on such removal or interference with the support until such portion of the **works** has been completed

(f) The **contractor** shall at all times proceed immediately at his own cost to remove or dispose of any debris and to rebuild, restore, replace and/or repair such property and to execute the **works**

10.7 High risk insurance

In the event of the project being executed in a geological area classified as a "High Risk Area", that is an area which is subject to highly unstable subsurface conditions that might result in catastrophic ground movement evident by sinkhole or doline formation the following will apply:

10.7.1 Damage to the works

The **contractor** shall, from the commencement **date** of the **works** until the date of the **certificate of practical completion** bear the full risk of and hereby indemnifies and holds harmless the **employer** against any damage to and/or destruction of the **works** consequent upon a catastrophic ground movement as mentioned above. The **contractor** shall take such precautions and security measures and other steps for the protection of the **works** as he may deem necessary

When so instructed to do so by the principal agent, the contractor shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the works and to rebuild, restore, replace and/or repair the works, at the contractor

10.7.2 Injury to persons or loss of or damage to property

The **contractor** shall be liable for and hereby indemnifies and holds harmless the **employer** against any liability, loss, claim or proceeding arising at any time during the period of the contract whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of or caused by a catastrophic ground movement as mentioned above

The **contractor** shall be liable for and hereby indemnifies the **employer** against any and all liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the **site**, whether belonging to or under the control of the

Carried to Collection R

	employer or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned above, which occurred during the period of the contract **10.7.3** It is the responsibility of the **contractor** to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.7.1 and 10.7.2. Without limiting the **contractor's** obligations in terms of the contract, the **contractor** shall, within twenty-one (21) **calendar days** of the **commencement date** but before commencement of the **works**, submit to the **employer** proof of such insurance policy, if requested to do so **10.7.4** The **employer** shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred consequent upon the **contractor's** default of his obligations as set out in 10.7.1; 10.7.2 and 10.7.3. Such losses or damages may be recovered from the **contractor** or by deducting the same from any amounts still due under this contract or under any other contract presently or hereafter existing between the **employer** and the **contractor** and for this purpose all these contracts shall be considered one indivisible whole			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
11	Liability insurances (clause 11)			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
12	Effecting insurances (clause 12)			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
13	No clause (clause 13)			
		Carried to Collection	R	

14	Security (clause 14)			
	Clause 14.0 is amended by:-			
	i) The addition of the following clauses:-			
	Clause 14.7.3			
	"Hand the site over to the **contractor** subject to agreement that shall be made between the **employer** and the **contractor"**			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
	Execution (A15 - A23)			
15	Preparation for and execution of the works (clause 15)			
	Clause 15.1.1 is amended by replacing it with:			
	No clause			
	Clause 15.1.2 is amended by replacing it with:			
	The **security** selected in terms of 14.0			
	Clause 15.1 is amended by the addition of the following clause:			
	15.1.4 An acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) or latest edition, revision and ammendments, within twenty-one (21) **calendar days** of **commencement date**			
	Clause 15.2.1 is amended by replacing it with the following clause:			
	Give the **contractor** possession of the **site** within ten (10) **working days** of the **contractor** complying with the terms of 15.1			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
16	Access to the works (clause 16)			
		Fixed	Item	
		Carried to Collection	R	

		Value Related	Item		
		Time Related	Item		
17	Contract instructions (clause 17)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
18	Setting out of the works (clause 18)				
	The contractor shall notify the principal agent if any encroachments of adjoining foundations, buildings, structures, pavements, boundaries, etc. exist in order that the necessary arrangements may be made for the rectification of any such encroachments				
	The contractor shall perform tolerance control checks regularly throughout the contract period and report on this at regular interval to the Principal Agent in the approved format. Should the contractor fail to comply with this requirement to the satisfaction of the the Principal Agent, progressively as the structure is being constructed, the Employer will commission a Registered Land Surveyor to do so on the Contractor's behalf and at the Contractor's Expense.				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
19	Assignment (clause 19)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
20	Nominated sub-contractors (clause 20)				
	Clause 20.0				
	Clause 20.1.3 is amended by replacing it with the following:				
	No Clause				
		Fixed	Item		
		Carried to Collection	R		

		Value Related	Item		
		Time Related	Item		
21	Selected sub-contractors (clause 21)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
22	Employer's direct contractors (clause 22)				
	The Contractor shall allow the direct contractors and employers agents access to the work, allocate reasonable space in the building for storage of their materials, tools and equipment, all to the satisfaction of the Principal Agent. The contractor shall also allow the direct contractors, etc. free of charge, use of their ablution facilities and water and power supply to the and shall in no way hinder or prevent the execution of their works. Attendance may be priced against the relevant specified items in the bills of quantities.				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
23	Contractor's domestic sub-contractors (Clause 23)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	COMPLETION				
	Completion (A24-A30)				
24	Practical completion (clause 24)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

25	Works completion (clause 25)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
26	Final completion (clause 26)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
27	Latent defects liability period (clause 27)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
28	Sectional completion (clause 28)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

29 Revision of date of practical completion (clause 29)

Clause 29.1.1 shall be deemed to be omitted and replaced by the following:

Inclement weather shall be defined as weather in excess of the average rainfall (volume and period) for each calender month over the past ten (10) years as recorded by the nearest commonly recognised weather bureau in the region of the project

It shall be deemed that the contractor has adequately allowed in his programme and tendered rates for expenses which might result from delays due to average or below rainfall as described above

Add Clause 29.9 as follows:

Revision to the date for **practical completion** shall only be considered when work on the critical path of the agreed programme for the works is delayed."

Add Clause 29.10 as follows:

Clause 29.10 - Acceleration

Clause 29.10.1
Irrespective of whether or not the **principal agent** rules that the **contractor** is entitled to an extension of time or a revision of the date for **practical completion**, the **principal agent** shall nevertheless, at any time, be entitled to instruct the **contractor** in writing to accelerate the progress of the remaining **works** to ensure that the **works** are completed by the original date for **practical completion** or revised date as the case may be.

Clause 29.10.2
Upon receipt of such instruction, the **contractor** shall take all necessary steps to ensure that the **works** are completed timeously including the provision by him of additional resources, plant, manpower, etc and the working overtime or additional overtime beyond that contemplated at the time of tender (at all times adhering to the regulations and requirements of all authorities) and by all other adequate and proper means and methods. The **contractor** shall prove that such steps are being taken if called upon to do so.

Clause 29.10.3
The **contractor's** entitlement to compensation arising out of or in respect of any revision to the date for **practical completion** that may have been granted by the **principal agent** or alternatively where the **principal agent** has instructed the **contractor** to accelerate, shall be adjudicated strictly in terms of clause 32.

Fixed

Carried to Collection R

		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
30	Penalty for non-completion (clause 30)			
	Clause 30 is amended by replacing reference to 36.3 at end of sentence with 36.0			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
	Payment (A31 - A35)			
31	Interim payment to the contractor (clause 31)			
	Clause 31.9 is amended by replacing "seven (7) **calender** days" with "thirty (30) **calender** days" and by deleting the words "subject to the **contractor** giving the **employer** a tax invoice for the amount due			
	Clause 31.12 is amended by deleting the following			
	Payment shall be subject to the **employer** giving the **contractor** a tax invoice for the amount due			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
32	Adjustment to the contract value (clause 32)			
	Clause 32.0			
	Clauses 32.5.1, 32.5.4 and 32.5.7 are amended by the addition of the following at the end of the sentence:			
	"due to no fault of the **contractor"**			
		Fixed	Item	
		Value Related	Item	
		Carried to Collection	R	

		Time Related	Item		
33	Recovery of expense and loss (clause 33)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
34	Final account and final payment (clause 34)				
	Clause 34.0				
	Clause 34.2 is amended by inserting # next to 34.2				
	Clause 34.13 is amended by replacing "seven (7) **calendar days**" with "thirty (30) **calendar days**" and deleting the words "subject to the **employer** giving the **contractor** a tax invoice for the amount due"				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
35	Payment to other parties (clause 35)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

Cancellation (A36-A39)

36 Cancellation by employer - contractor's default (clause 36)

Clause 36.1 is amended by the additions of the following clauses:

36.1.3 refuses or neglects to comply strictly with any of the conditions of contract

36.1.4 estate being sequestrated, liquidated or surrendered in terms of the insolvency laws in force within the Republic of South Africa

36.1.5 in the judgement of the **employer**, has engaged in **corrupt** or **fraudulent practices** in competing for or in executing the contract

Clause 36.3 is amended by removing the reference to "No clause" and replacing the words "**principal agent**" with "**employer**"

Clause 36.0 is amended by the addition of the following clause:

36.7 Notwithstanding any clause to the contrary, on cancellation of this **agreement** either by the **employer** or the **contractor**; or for any reason whatsoever, the **contractor** shall on written instruction, discontinue with the **works** on a date stated and withdraw himself from the **site**. The **contractor** shall not be entitled to refuse to withdraw from the **works** on the grounds of any lien or right of retention or on the grounds of any other right whatsoever

Fixed	Item	
Value Related	Item	
Time Related	Item	

37 Cancellation by employer - loss and damage (clause 37)

Clause 37.3.5 is amended by replacing "ninety (90)" with "one-hundred and twenty (120)"

Clause 37.0 is amended by the addition of the following clause:

37.5 Notwithstanding any clause to the contrary, on cancellation of this **agreement** either by the **employer** or the **contractor**; or for any reason whatsoever, the **contractor** shall on written instruction, discontinue with the **works** on a date stated and withdraw himself from the **site**. The **contractor** shall not be entitled to refuse to withdraw from the **works** on the grounds of any lien or right of retention or on the grounds of any other right whatsoever

Fixed	Item	
Value Related	Item	
Time Related	Item	

Carried to Collection	R	

38	Cancellation by contractor - employer's default (clause 38) Clause 38.5.4 is amended by replacing "ninety (90) with "one-hundred and twenty (120)" Clause 38.0 is amended by the addition of the following clause: 38.7 Notwithstanding any clause to the contrary, on cancellation of this **agreement** either by the **employer** or the **contractor**; or for any reason whatsoever, the **contractor** shall on written instruction, discontinue with the **works** on a date stated and withdraw himself from the **site**. The **contractor** shall not be entitled to refuse to withdraw from the **works** on the grounds of any lien or right of retention or on the grounds of any other right whatsoever			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
39	Cancellation - cessation of the works (clause 39) Clause 39.3.5 is amended by the addition of the following at the end of the sentence: "within one-hundred and twenty (120) **working days** of completion of such report"			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
	<u>Dispute Settlement (A40)</u>			
40	Disputes Settlement (clause 40) Clause 40.2.2 is amended by replacing "one (1) year" with "three (3) years" Clause 40.6 is amended by removing the reference to: No clause Clause 40.7.1 is amended by replacing "(10)" with "(15)" and by the addition of the following: Whether or not mediation resolves the dispute, the parties shall bear their own cost concerning the mediation and equally share the costs of the mediator and related costs.			
		Fixed	Item	
		Carried to Collection	R	

		Value Related	Item	
		Time Related	Item	
	State Provision (A41)			
41	State Substitutions (clause 41)			
	Delete in the Substitute Provisions (41.0 State Clauses) clauses 40.2.1, 40.2.2, 40.3, 40.4, 40.5 and 40.6 and replace with the following:			
	40.1 Should any dispute between the **employer,** his **agents** or **principal agent** on the one hand and the contractors on the other arise out of this **agreement**, such dispute shall be referred to adjudication.			
	40.2 Adjudication shall be conducted in accordance with the edition of the JBCC Rules for Adjudication current at the time when the dispute is declared. The party, which raises the dispute, shall select three adjudicators from the panel of adjudicators published by the South African Institution of Civil Engineering or Association of Arbitrators (Southern Africa), determine their hourly fees and confirm that these adjudicators are available to adjudicate the dispute in question. The other party shall then select within 7 days one of the three nominated adjudicators, failing which the chairman for the time being of the Association of Arbitrators (Southern Africa) shall nominate an adjudicator. The **adjudicato**r shall be appointed in terms of the Adjudicators Agreement set out in C1.4 .			
	40.3 If provided in the **schedule**, a dispute shall be finally settled by a single Arbitrator to be agreed on between the parties or, failing such agreement within 28 days after referring the dispute to Arbitration, an Arbitrator nominated by the chairman for the time being of the Association of Arbitrators (Southern Africa).Any such reference shall be deemed to be a submission to the arbitration of a single arbitrator in terms of the Arbitration Act (Act No 42 of *1965,* as amended), or any legislation passed in substitution therefore. In the absence of any other agreed procedure, the arbitration shall take place in accordance with the Rules for the Conduct of Arbitrations issued by the Association of Arbitrators (Southern Africa) which are current at the time of the referral to arbitration. The Arbitrator shall, in his award, set out the facts and the provisions of the contract on which his award is based.			
	40.4 If the **schedule** provides for court proceedings to finally resolve disputes, disputes shall be determined by court proceedings.			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
		Carried to Collection	R	

Contract Variables (A41)

42 The Schedule (clause 42)

Tenderers are referred to the Contract Data and Notes to Tenderes for variable pertaining to this contract

Fixed	Item	
Value Related	Item	
Time Related	Item	

Carried to Collection R

Section No. 1
PRELIMINARIES
Bill No. 1
PRELIMINARIES
Rantobeng Secondary School

SECTION B: PRELIMINARIES

Definition and interpretation (B1)

43	Definition and interpretation See also clause A1.0 of Section A for additional and/or amended definitions which shall apply equally to this Section			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	

Documents (B2)

44	Checking of documents (B2.1) ***These bills of quantities:*** ***(1) contain pages and annexes as indexed, and;*** ***(2) are in multiple procurement format, i.e. all trades are fully measured with minor budgetary allowances*** ***Items in these bills of quantities are to be read and priced in conjunction with and the descriptions regarded as amplified by the Model Preambles for Trades, 2008 edition, as recommended and published by the Association of South African Quantity Surveyors and no claim arising from brevity of description of items fully described in the said Model Preambles for Trades will be entertained***			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
45	Provisional bills of quantities (B2.2)			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
		Carried to Collection	R	

46	Availability of construction documentation (B2.3)				
	The minor budgetary allowances included in this document will be separately procured, based on multiple procurement of selected sub-contractors during the construction period				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
47	Interests of agents (B2.4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
48	Priced documents (B2.5)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
49	Tender submission (B2.6)				
	Notwithstanding anything contained in this clause tenders shall be valid for a period of ninety (90) days from the closing date of tenders				
	Clause 2.6 is amended by replacing "JBCC Form of Tender" with "Form of Offer and Acceptance C1.1"				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	<u>The site (B3)</u>				
50	Defined works area (B3.1)				
		Fixed	Item		
		Value Related	Item		
		Carried to Collection	R		

Section No. 1
PRELIMINARIES
Bill No. 1
PRELIMINARIES
Rantobeng Secondary School

		Time Related	Item		
51	Geotechnical investigation (B3.2)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
52	Inspection of the site (B3.3)				
	Tenderers are instructed to familiarise themself before submission of their tender with regard to the relevant local site conditions, site accessibility, the nature of operations required, availability of labour and any conditions pertaining thereto, together with conditions relating to unloading, carting and storage of materials, equipment and tools required for the works.				
	No claims for extras arising from the contractor having failed to comply with this clause will be entertained				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
53	Existing premises occupied (B3.4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
54	Previous work - dimensional accuracy (B3.5)				
	Work executed under a previous contract and the extent thereof will be pointed out to the contractor by the principal agent on handing over of the site				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

55	Previous work - defects (B3.6)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
56	Services - known (B3.7)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
57	Services - unknown (B3.8)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
58	Protection of trees, etc (B3.9)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
59	Articles of value (B3.10)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
60	Inspection of adjoining properties, etc (B3.11)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

Management of contract (B4)

61 Management of the works (B4.1)

Fixed	Item	
Value Related	Item	
Time Related	Item	

62 Programming for the works (B4.2)

Clause B4.2 is hereby amended by the addition of the following:

Programme:

The contractor and the principal agent shall agree to a Contract Programme for the control of the Works.

The contractor shall submit a draft of the Contract Programme and method statement to the principal agent for approval together with the tender.

The contractor shall ensure that the contract programme:

1. Shall be prepared and drawn up to comply in all respects with the requirements of this Agreement.
2. shall be drawn up using logic developed during the tender period and complies with the planning requirements of the Client.
3. shall be in accordance with the dates given herein for possession and practical completion; and
4. shall be in sufficient and approved detail to ensure effective control of the work, including all items necessary to enable calculations to be made for the distribution of finance during the cashflow analysis.
5. shall be accompanied by a full written method statement

The principal agent shall examine and comment on the contract programme and method statement within two weeks of its submission.

Following on these comments the contractor shall amend the contract programme and method statement as may be necessary and submit the final contract programme and method statement to the principal agent for approval within a further two weeks thereafter.

The contract programme shall be processed by computer and be presented to the principal agent in the form of logic charts and bar charts in such a way as to determine the critical path and the float on non-critical activities. All supporting printouts must be available to the principal agent on demand.

The acceptance by the principal agent of the contract programme, or any revision thereof, does not necessarily sanction the accuracy of validity of the network logic, the correctness of individual activities in terms of description or

Carried to Collection R

duration, the comprehensiveness of networks or the discrepancies between drawings and any other documents presented by the contractor, and in no way relieves the responsibility of the contractor to comply with the requirements of the Agreement.

No policy decisions other than the planning requirements, procedures and policies provided, will be enforced on the contractor regarding construction of the project and the contractor shall be responsible at all times for ensuring the accuracy, validity and reasonableness of programming information.

Documentation will not be available in complete detail at the date of award of the contract. Non-availability of information will not be deemed an excuse for non-presentation of programmes. In the event of inadequate information, the contractor shall estimate the predicted time applications on available information and quality the submission accordingly.

Development of the contract programme and method statement

Within two weeks of award of the contract, the contractor shall submit an updated contract programme and written method statement which shall include the latest information in sufficient detail to permit comprehensive monitoring.

Progress of the works will be monitored by the principal agent. The contractor shall liaise with the principal agent in order to provide whatever information is required to facilitate such monitoring.

Revisions to the contract programme

Revisions to the contract programme may be introduced periodically by the contractor subject to compliance with the contract completion and handover dates.

Providing the required consultation between the relevant parties has highlighted the implications of the required changes, the programming strategy on the project may be changed and the changes noted and specified on logic charts delivered to the principal agent. The changes to the programme will be recorded as firm and binding once the principal agent has sanctioned the said changes.

A revision to the programme will not invalidate the contractual completion dates and applications for extensions of time will be processed by the principal agent in accordance with the conditions of contract.

Should the contractor fail to submit a request for revision to the construction programme , progress monitoring shall be based on the latest revised programme sanctioned by the principal agent.

The contractor shall make all his necessary revisions on the approved network sheets clearly marking, inter-alia, the logic changes and duration changes. These will then be processed by the necessary parties and then approved in the normal manner.

Progress Monitoring

Carried to Collection R

The contractor shall provide regular progress reports showing actual and expected progress against the latest contract programme. Progress reports shall be submitted at each site progress meeting and shall outline the progress against key target dates and deviation which has occurred against the most recently updated control programme due to the progress reflected in the as-built construction programme.

The status of each activity must also be reported as follows:

Target - If the activity is not complete, the latest predicted completion date shall be supplied.

Start - If the activity has commenced, the actual date shall be supplied.

Finish - If the activity is complete, the actual completion date shall be supplied.

Problems which may occur during execution of the contract must be specifically identified in progress reports under a separate section of the contractor's report.

Should problems occur during the execution of the contract or the scope of work be increased or decreased, the contractor may be requested to increase the extent or the detail of the programme.

The principal agent may recommend action to be taken by the contractor, including the revision of resource levels, but this information will not be binding on the contractor unless the recommendations are enforced in terms of the conditions of contract by the principal agent and will in no way relieve the contractor's responsibility to comply with the requirements of the Agreement.

Extension of time

Any extension of time which is granted by the principal agent will be annotated to affect selected activities in the programme and the associated activities will be incorporated by revisions to the programme by the contractor. Should the additional activities or the extension of time on existing activities fall on a non-critical area of the programme, extension will be limited to the activities affected by the said additional activities or extensions and the contract dates shall not be affected. If, however, the additional activities fall on the critical path, the principal agent shall take this into account when granting any extension of time in terms of the conditions of contract.

The contractor agrees that the contract completion date (i.e. the date for practical completion) has been stipulated in the contract for the benefit of the employer, so that, without derogating from the generality of the aforegoing principle it is provide that:

1. The contractor shall not be entitled to deliver the site and the works to the employer prior to the contract completion date and

2. Should there for any reason be any float period indicated in the contract programme prior to the contractual completion date then this float period shall be utilized to absorb any delays or extensions of time without affecting the contract completion date.

Carried to Collection R

	3. The contractor shall, at all times, ensure that, notwithstanding the approval or sanctioning, reviewing or inspection of a programme or any revision of a programme by the principal agent in the aforegoing terms, practical completion and completion of the works shall take place strictly in accordance with this Agreement. A defective or faulty programme, even if so sanctioned, approved, reviewed or inspected by the principal agent, shall therefore not constitute a cause for granting an extension of time for completion of the works or for entitling the contractor to the payment by the employer in terms of the contract of any loss, compensation or damage whatsoever. The contractor acknowledges that the principal agent's aforegoing participation in the approval of development of, revisions to and updating of the Contract Programme shall take place in consultation with the principal agent. The contractor shall therefore provide the principal agent with such co-operation and/or information and/or access as they may reasonably require for such purposes.			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
63	Progress meetings (B4.3)			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
64	Technical meetings (B4.4)			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
65	Labour and plant records (B4.5)			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
		Carried to Collection	R	

	Samples, shop drawings and manufacturer's instructions (B5)				
66	Samples of materials (B5.1)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
67	Workmanship samples (B5.2)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
68	Shop drawings (B5.3)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
69	Compliance with manufacturer's instructions (B5.4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	Temporary works and plant (B6)				
70	Deposits and fees (B6.1)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
71	Enclosure of the works (B6.2)				
		Fixed	Item		
		Carried to Collection	R		

		Value Related	Item		
		Time Related	Item		
72	Advertising (B6.3)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
73	Plant, equipment, sheds and offices (B6.4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
74	Main notice board (B6.5)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
75	Subcontractors notice board (B6.6)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	<u>Temporary services (B7)</u>				
76	Location (B7.1)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

77	Water (B7.2)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
78	Electricity (B7.3)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
79	Telecommunication facilities (B7.4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
80	Ablution facilities (B7.5)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	Prime cost amounts (B8)				
81	Responsibility for prime cost amounts (B8.1)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	Attendance on nominated and selected subcontractors (B9)				
82	General attendance (B9.1)				
	The schedule rates providing for attendance on **nominated subcontractors** and other **contractors**, will be adjusted only if the scope of the work has changed	Fixed	Item		
		Carried to Collection	R		

		Value Related	Item		
		Time Related	Item		
83	Special attendance (B9.2)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
84	Commissioning - Fuel, water and electricity (B9.3)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	Financial aspects (B10)				
85	Statutory taxes, duties and levies (B10.1)				
	Provision is made in the summary of these bills of quantities for the inclusion of Value Added Tax (VAT)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
86	Payment of preliminaries (B10.2)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
87	Adjustment of preliminaries (B10.3)				
	Clauses B10.3.1 and B10.3.2 are amended by replacing "within fifteen (15) **working days** of taking possession of the **site**" with "when submitting his priced **bills of quantities**"				
		Fixed	Item		
		Carried to Collection	R		

		Value Related	Item		
		Time Related	Item		
88	Payment certificate cash flow (B10.4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
	General (B11)				
89	Protection of works (B11.1)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
90	Protection/isolation of existing/sectionally occupied works(B11.2)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
91	Site security (B11.3)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
92	Notice before covering work (B11.4)				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

93	Disturbance (B11.5)				
			Fixed	Item	
			Value Related	Item	
			Time Related	Item	
94	Enviromental disturbance (B11.6)				
			Fixed	Item	
			Value Related	Item	
			Time Related	Item	
95	Works cleaning and clearing (B11.7)				
			Fixed	Item	
			Value Related	Item	
			Time Related	Item	
96	Vermin (B11.8)				
			Fixed	Item	
			Value Related	Item	
			Time Related	Item	
97	Overhand work (B11.9)				
			Fixed	Item	
			Value Related	Item	
			Time Related	Item	
98	Instruction manuals and guarantees (B11.10)				
			Fixed	Item	
			Value Related	Item	
			Time Related	Item	
		Carried to Collection		R	

99	As built information (B11.11)		
		Fixed	Item
		Value Related	Item
		Time Related	Item
100	Tenant installations (B11.12)		
		Fixed	Item
		Value Related	Item
		Time Related	Item

Schedule of variables (B12)

101 **Pre-tender information (B12.1)**

This **schedule** contains all variables referred to in this document and is divided into pretender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of these **Preliminaries.**

	Fixed	Item
	Value Related	Item
	Time Related	Item

12.1.1 **Provisional bills of quantities (B12.1.1)**

The quantities are provisional:

Yes

12.1.2 **Availability of construction documentation (B12.1.2)**

Construction documentation is complete:

Yes

12.1.3 **Interest of agents (B12.1.3)**

No

12.1.4 **Defined works area (B12.1.4)**

The area of the works to be occupied by the **contractor**, any restriction on the area and the limit of access or exit will be pointed out to the contractor by the **principal agent** on handing over of the site

	Carried to Collection	R

12.1.5 **Geotechnical investigation (B12.1.5)**

The geotechnical report is available for viewing at the offices of the **principal agent**

Yes

12.1.6 **Existing premises occupied (B12.1.6**)

[3.4] Specific requirements:
The **contractor** shall execute the works with as little noise and disturbance as possible

12.1.7 **Previous work - Dimensional accuracy (B12.1.7)**

[3.5] Details:
No additional details

12.1.8 **Previous work - defects**

[3.6} Details:
No additional details

12.1.8 **Services - known (B12.1.9)**

[3.7} Details:
Existing services and points of connection are shown on site plan and/or will be pointed out on site by the **principal agent**

12.1.10 ***Protection of trees***

[3.9] Specific requirements:
No trees to be damaged or removed except those specifically designated in writing by the **principal agent**

12.1.11 ***Inspection of adjoining properties***

[3.11] Specific requirements:
None

12.1.12 ***Enclosure of the works***

[6.2} Specific requirements:
Areas where work is taking place shall at all times be blocked off by appropriate means

Carried to Collection R

12.1.13 ***Offices***

[6.4.3] Specific requirements:
The **contractor** shall provide, maintain and remove on completion of the works an office for the exclusive use of the **principal agent**, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times.

12.1.14 Main notice board

[6.5] Specific requirements:
The **contractor** shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick round outer edges and projecting 12mm from face of boarding and rounded on front edge. The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines dark green. All wording shall be inscribed in dark green as per the coat of arms for SA. All wording shall be inscribed in dark green painted sans serif lettering.

12.1.15 ***Subcontractors' notice board***

[6.6] *A notice board is required* (yes/no) **No**
Specific requirements:

12.1.16 ***Water***

[7.2] Option A (by **contractor**) (yes/no) **Yes**

12.1.17 ***Electricity***

[7.3] Option A (by **contractor**) (yes/no) **Yes**

12.1.18 ***Telecommunications***

[7.4] Telephone (yes/no) **Yes**

Facsimile (yes/no) **Yes**

E-mail (yes/no) **Yes**

Carried to Collection R

12.1.19 ***Ablution facilities***

[7.5} Option A (by **contractor**) (yes/no) **Yes**

Option B (by **employer**) (yes/no) **No**

12.1.20 ***Protection of existing/sectionally occupied works***

[11.2] Protection is required (yes/no) **Yes**

12.1.21 ***Special attendance***

The contractor must obtain information from all subcontractors at tender stage regarding special attendance that might be required and make allowance for each and every subcontract that requires special attendance

[9.2] **Subcontractor** (1) Details:

Subcontractor (2) Details:

Subcontractor (3) Details:

12.1.22 ***Protection of the works***

[11.1] Specific requirements:
All work that requires protection during construction must be adequately protected up to practical completion by the **contractor**

12.1.23 ***Disturbance***

[11.5] Specific requirements:
The **contractor** shall keep the site, structures, etc well watered during operations to prevent dust and shall provide and erect and remove on completion of the **works** all necessary temporary dust screens all to the satisfaction of the **principal agent**

12.1.24 ***Environmental disturbance***

[11.6] Specific requirements:
None

102 **Post-tender information (B12.2)**

All post-tender information for this section will be detemined once tender is awarded

Fixed Item

Carried to Collection R

				Value Related	Item	
				Time Related	Item	
	12.2.1	***Payment of preliminaries***				
	[10.2]	Option A (prorated)	(yes/no)	**Yes**		
		Option B (calculated)	(yes/no)	**No**		
	12.2.2	***Adjustment of preliminaries***				
	[10.3]	*Option A (three categories)*	*(yes/no)*	***Yes***		
		Option B (detailed breakdown)	(yes/no)	**No**		
	12.2.3	***Additional agreed preliminaries items***				
		Details: None				
103	**Other post tender infornation (B12.3)**					
	All post-tender information for this section will be determined once tender is awarded					
				Fixed	Item	
				Value Related	Item	
				Time Related	Item	
				Carried to Collection	R	

SECTION C: SPECIFIC PRELIMINARIES

Section C contains specific preliminary items which apply to this contract except where N/A (Not Applicable) appears against an item

104 **Clause C1 - Contract drawings**

The drawings issued with the tender documents do not comprise the complete set but serve as a guide only for tendering purposes and for indicating the scope of the work to enable the tenderer to acquaint himself with the nature and extent of the **works** and the manner in which they are to be executed

Should any part of the drawings not be clearly understood by the the tenderer he shall, before submitting his tender, obtain clarification in writing from the **principal agent**

Fixed	Item	
Value Related	Item	
Time Related	Item	

105 **Clause C2 - General Preambles**

The "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the trades is deemed to be included herein and shall be read in conjuction with the bills of quantities and be referred to for the full decriptions of work to be done and materials to be used.

Fixed	Item	
Value Related	Item	
Time Related	Item	

106 **Clause C3 - Site instructions**

All site instructions issued on site shall be recorded in writing within seven (7) calendar days in site instruction book (A4 size and triplicate carbon format), which is to be provided and maintained by the contractor. The said site instruction book shall be kept on site at all times for the exclusive use of recording site instructions only

Site instructions may be issued by the architect or any of the consultants only. Copies of the site instructions are to be submitted to the architect and quantity surveyor within seven (7) calendar days of such recording in the site instruction book

Fixed	Item	
Value Related	Item	
Carried to Collection	R	

		Time Related	Item	
107	**Clause C4 - Trade Names** Wherever a trade name for any product has been described in the **bills of quantities,** the tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the **principal agent** being obtained prior to the closing date for submission of tenders If prior written approval for an alternative product is not obtained, the product described shall be deemed to have been tendered for			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
108	**Clause C5 - Overtime** Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the contractor unless the principal agent has specifically authorized and indicated in writing, prior to the execution thereof, that costs for such overtime will to be borne by the employer			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
109	**Clause C6 - As-built drawings** The position of construction breaks and the extent of individual concrete pours are to be recorded by the contractor on the structural engineer's drawings and are to be submitted to the principal agent and the structural engineer for their records			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
		Carried to Collection	R	

110 **Clause C5 - Labour record**

At the end of each week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all subcontractors on the works each day

Fixed	Item	
Value Related	Item	
Time Related	Item	

111 **Clause C6 - Plant record**

At the end of each calendar week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works

Fixed	Item	
Value Related	Item	
Time Related	Item	

112 **Clause C7 - Non-cession of monies**

The contractor shall not cede nor assign his rights or claims to any monies due or to become due to him under this contract

Fixed	Item	
Value Related	Item	
Time Related	Item	

Carried to Collection	R	

113 **Clause C8 - Occupational Health and Safety Act**

The **contractor** shall comply with all the requirements set out in the Construction Regulations, 2003 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993).

It is required of the **contractor** to thoroughly study the **latest** Health and Safety Specification that must be read together with and is deemed to be incorporated under this Section of the **bills of quantities / lump sum document.**

The **contractor** must take note that compliance with the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is compulsory. In the event of partial or total non-compliance, the **principal agent,** notwithstanding the provisions of clause A31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress **payment certificate** until the **contractor** provides satisfactory proof of compliance. The **contractor** shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment.

Provision for pricing of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is made under this clause and it is explicitly pointed out that all requirements of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained.

	Fixed	Item	
	Value Related	Item	
	Time Related	Item	

114 **Clause C9 - Viewing of the school areas**

The **site** is situated in a school area and the tenderer must arrange with the Principal or other responsible school staff to obtain permission to enter the **site** for tendering purposes

	Fixed	Item	
	Value Related	Item	
	Time Related	Item	

	Carried to Collection	R	

115	**Clause C10 - Commencement of Works in School Areas** As the **works** falls within a school area the **contractor** must give the Principal or other responsible staff member notice before commencement of the **works**. Should the **contractor** fail to make such arrangements, admission to the **site** may be refused and any additional costs will be for the **contractor's** account			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
116	**Clause C11 - Entrance Permits to School Areas** As the **works** falls within a school area the **contractor** shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under the control of the Principal, or chief security officer			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
117	**Clause C12 - Security Check of Personnel** The **principal agent** may require the **contractor** to have his personnel and workmen, or a certain number of them, security classified In the event of the **principal agent** requesting the removal of a person or persons from the **works** for security reasons, the **contractor** shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the **works** and the **site** and/or to any document or information relating to the **works**			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
		Carried to Collection	R	

118	**Clause C13 - HIV/Aids Awareness** It is required of the **contractor** to thoroughly study the HIV/AIDS Specification (PW 1544) of the Department that must be read together with and is deemed to be incorporated under this Section of the **bills of quantities.** Provision for pricing of HIV/AIDS awareness is made under items C10.1 to C10.5 hereafter and it is explicitly pointed out that all requirements of the aforementioned specification are deemed to be priced hereunder, as the said items represent the only method of measurement and no additional items or extras to the contract in this regard shall be entertained The **contractor** must take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the **principal agent**, notwithstanding the provisions of Clause A 31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress **payment certificate** until the **contractor** provides satisfactory proof of compliance. The **contractor** shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
119	**Clause C13.1 - Awareness Champion** Selection, appointment, briefing and making available of an Awareness Champion including provision of all relevant services, all in accordance with the HIV/AIDS Specification			
		Fixed	Item	
		Value Related	Item	
		Time Related	Item	
120	**Clause C13.2 - Awareness Workshop** Selection and appointment of a competent Service Provider approved by the **principal agent**, provision of a Service Provider Workshop Plan and a suitable venue, conducting of awareness workshops by means of traditional and/or modern multi-media techniques, including follow-up courses, making available all tuition material and performing assessment procedures, all in accordance with the HIV/AIDS Specification			
		Fixed	Item	
		Carried to Collection	R	

		Value Related	Item		
		Time Related	Item		
121	**Clause C13.3 - Posters, booklets, videos, etc.** Provision, displaying, maintaining and replacing when necessary of four plastic laminated posters, booklets and educational videos, etc. for the duration of the **construction period**, all in accordance with the HIV/AIDS Specification				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
122	**Clause C13.4 - Access to Condoms** Provision and maintenance of condom dispensers fixed in position, including male and female condoms, replenishing male and female condoms on a daily basis as required for the duration of the **construction period**, all in accordance with the HIV/AIDS Specification				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
123	**Clause C13.5- Monitoring** Monitoring HIV/AIDS awareness of workers, providing the **principal agent** with access to information including making available all reports, thoroughly completed and reflecting the correct information, for the duration of the **construction period** and close out, all in accordance with the HIV/AIDS Specification				
		Fixed	Item		
		Value Related	Item		
		Time Related	Item		
		Carried to Collection	R		

Section No. 1

PRELIMINARIES

Bill No. 1

PRELIMINARIES

COLLECTION

	Page No	Amount
Total Brought Forward from Page No.	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
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	16	
	17	
	18	
	19	
	20	
Carried Forward	R	

Section No. 1

PRELIMINARIES

Bill No. 1

PRELIMINARIES

COLLECTION

	Page No		Amount
Brought Forward		R	
Total Brought Forward from Page No.	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	38		
	39		
Carried Forward		R	

Section No. 1

PRELIMINARIES

Bill No. 1

PRELIMINARIES

COLLECTION

	Page No		Amount
Brought Forward		R	
Total Brought Forward from Page No.	40		
	41		
	42		
	43		
	44		
	45		
Carried to Final Summary		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

BILL NO. 1

DEMOLITIONS

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Demolitions

Tenderers are advised to visit the site before submitting a tender as to satisfy themselves with the nature and extent of the work to be done for the proper completion of the work

The submission of a tender will imply that the contractor has physically visited the site and fully understands the content and extend of the work described in this bill and no claims in this respect will be afterwards entertained

The contractor shall completely demolish the buildings, etc in a skilful, practical and same manner

Unless otherwise described, kitchen and other equipment, machinery, etc shall remain the propery of the employer and the removal from site thereof does not fall within the scope of this contract

Demolitions shall include breaking up and removing:

Any foundations (if so described);

All external screen walls, ramps, aprons, surface water channels, rainwater sumps, gulleys, etc attached to the building to be demolished;

Carried to Collection R

All services, manholes, etc in ground to a point not less than 1m beyond the perimeter of the building including plugging off ends of all remaining pipes, drains, etc, filling in holes where necessary and ramming and levelling to ground level

Where only a portion of a building is to be demolished, it shall be done without structural or other damage to the remaining portion of the building. Any such damage shall be made good by the contractor at his own expense

The contractor shall, before commencing work, obtain all necessary authorisation for carrying out the work, by whatever means including the use of pneumatic equipment or blasting, give all necessary notices and pay all charges and fees in connection therewith. He shall also comply with all regulations pertaining to rodent extermination and obtain the requisite Rodent Extermination Clearance Certificate and pay all necessary fees. All receipts and certificates shall be left in the safekeeping of the principal agent. All the above-mentioned charges and fees shall be paid by the contractor and included in his prices

The contractor shall give ample notice to the principal agent and local authorities regarding any disconnections necessary prior to the removal or interruption of electrical or telephone cables, water and sanitary services, etc

After the handing over of the site to the contractor, the full risk of any loss or damage to the buildings to be demolished shall be the responsibility of the contractor and he shall take such precautions as he deems necessary against such loss or damage

Explosives

No explosives whatsoever may be used for demolition purposes unless otherwise stated

Dimensions

Measurements given are approximate and the contractor is advised to view the site and any existing structures. The contractor is to acquaint himself thoroughly in respect of the exact measurements and any errors to the tendered rates in this regard will be for the contractor's expense

Carried to Collection R

	General				
	Water supply pipes and other piping in ground that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings to the satisfaction of the principal agent				
	Before and demolitions or alterations of existing buildings can take place the contractor must discuss with the school governing body the material from the demolitions or alterations that will become the property of the school. All such material agreed upon must be either be removed by the school or the contractor and handed over to the school before demolitions or alterations can start. All other material are to become the property of the contractor and are to be removed from the site				
	The contractor shall carry out the work with as little mess and noise possible and with a minimum of disturbance to the occupants. The contractor shall provide proper protection and provide and erect any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent, and remove when directed				
	DEMOLITIONS				
	Taking down and removing fencing including removal of posts, bases, etc				
1	Mesh fencing 1.8m high	m	189		
2	Palisade fencing 1.8m high	m	25		
	Demolish and remove				
3	One brick boundary or yard walls 1.8m high including grubbing up foundations, backfilling and levelling	m	6		
4	Concrete aprons, 90mm thick	m2	217		
5	5000 Litre PVC water tank and 3m high steel stand with timber platform including grubbing up bases, removing piping, sealing off water network, backfilling and levelling	No	3		
	Carried to Collection			R	

6	Cement block walled pond structure 3m diameter x 0.4m high including grubbing up foundations, backfilling and levelling	No	2		
7	Carport approximately 241m2 on plan and 2.5m high at eaves comprising corrugated roof covering on steel columns and beams including grubbing up bases, backfilling and levelling	No	1		
8	Open walkway, 2m wide comprising pit, concrete surface bed and brick walls including grubbing up foundations, backfilling and levelling	m2	26		
9	Single storey pit latrine building with lean to roof approximately 9m2 on plan and 2.5m high at eaves comprising pit, concrete surface bed, one brick external walls and internal walls and corrugated roof covering on timber trusses including grubbing up foundations, backfilling and levelling	No	1		
10	Septic tank approximately 25m2 on plan and 3m deep comprising concrete surface bed and slab, one brick external walls and internal walls including cutting and sealing off piping, grubbing up foundations, backfilling and levelling	No	1		
11	Single storey corrugated iron structure with flat roof approximately 34m2 on plan and 2.5m high at eaves comprising concrete surface bed, cement block walls 1.5m high on two sides, corrugated roof covering on poles including grubbing up foundations, backfilling and levelling	No	1		
12	Single storey kitchen with flat roof approximately 22m2 on plan and 3.2m high at eaves comprising concrete surface bed, one brick external walls and corrugated roof covering on timber trusses including grubbing up foundations, backfilling and levelling	No	1		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 1

DEMOLITIONS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	49		
	50		
	51		
	52		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 2

ALTERATIONS

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

General

Making good of finishes shall be deemed to include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary

The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)

Removal of doors, windows, frames, etc

Where doors, windows, etc are described as taken out, this shall be understood to include for removal of all beads, architraves, ironmongery, etc. Doors, windows, etc that are to be re-fixed are to be provided with new architraves

Doors, fanlights, windows, fittings, frames, linings, etc which are to remain the property of the employer shall be carefully taken out, temporarily stored and handed over to the employer

Carried to Collection R

Doors, fanlights, windows, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately

Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc and making good to match existing

Forming new openings or altering openings in existing walls

Where new openings are formed or openings altered in existing walls, the wall above the opening shall be broken out and a new brick, in-situ or prestressed concrete lintel inserted, complete with the necessary reinforcement, formwork, turning piece, etc, the jambs and portions of openings as described shall be built up with new brickwork or blockwork properly toothed and bonded to existing, cavities of hollow walls shall be closed where necessary and finishes shall be made good all round and into reveals

Building up openings

Where existing openings are described as building up, the existing surfaces all round shall be prepared as necessary, brickwork or blockwork properly toothed and bonded to existing, wedged up to underside of existing lintel and finishes shall be made good on both sides

Cement screeds and pavings, granolithic, etc shall be levelled and prepared for the raising of brickwork

Protection

The contractor must protect all work not removed such as walls, floors, doors, windows or other joinery, loose and fixed fittings and electrical appliances, etc, from damage during the progress of the work and provide all necessary materials for so doing

Carried to Collection R

	REMOVAL OF EXISTING WORK				
	Note:				
	All usable material such as roof sheets, windows, etc to be handed over to the employer. All other material (except where stated for re-use) to be removed from site by the contractor				
	Taking up and removing precast concrete				
1	60mm Thick paving blocks including levelling and compaction after removal	m2	405		
	Breaking down and removing brickwork etc				
2	Half brick walls	m2	14		
3	One brick walls	m2	158		
	Taking out and removing doors, windows, etc from brickwork to be demolished				
4	Timber single door and steel frame not exceeding 2,5m2	No	5		
5	Steel safe door and frame not exceeding 2,5m2	No	1		
	Taking out and removing doors from steel frames (frames to remain) including new striking plates, repairs to steel frame and preparation thereof to receive new doors				
6	Timber single door not exceeding 2,5m2	No	6		
7	Steel single door not exceeding 2,5m2	No	3		
	Taking out and removing pressed steel door frames and steel/timber doors including repairs to brickwork and preparation thereof to receive new frames				
8	Steel single door and frame not exceeding 2,5m2	No	4		
	Taking out and removing doors, windows, etc, including thresholds, sills, etc (building up openings and making good finishes elsewhere)				
9	Timber single door and steel frame not exceeding 2,5m2	No	2		
	Carried to Collection			R	

	Taking down and removing roofs, floors, panelling, ceilings, partitions, etc				
10	Corrugated iron roof covering and timber purlins including fascias, barge boards, gutters, downpipes, etc	m2	494		
11	Pitched roof 24.5 x 10 x 1.9m high overall, of timber trusses and purlins, corrugated sheet steel covering, ceilings and cornices, eaves soffit covering, fascias, barge boards, gutters and rainwater pipes	No	1		
12	Fibre cement ceilings, including cornices, timber brandering, etc	m2	550		
	Taking out and removing sundry joinery work, fittings, etc				
13	Timber skirtings	m	18		
14	Timber slatted seating on steel framework	m	3		
15	Timber wall cupboard 2000 x 300 x 600mm high	No	1		
	Taking out and removing ironmongery				
16	Striking plates from steel door frames and prepare frame to receive new	No	11		
17	Writing boards, notice boards, white boards, etc including repairs to plaster backing where applicable	m2	73		
	Taking out and removing steel gates from steel frames (frames to remain) or brickwork including repairs to steel frame or brickwork and preparation thereof to receive new gates				
18	Steel gate and frame not exceeding 2,5m2	No	9		
	Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screed, plaster, tile finishes, etc				
19	25mm Granolithic from floors	m2	410		
20	Internal plaster from walls and columns	m2	15		
21	External plaster from walls, columns and beams	m2	16		
	Carried to Collection			R	

	Hacking up/off and removing ceramic tiles including removing mortar bed or adhesive from concrete or brickwork and preparing surfaces for new screed, plaster, tile finish, etc				
22	Tiles to floors	m2	159		
23	Tiles to walls	m2	4		
24	Tile skirtings 100mm high	m	42		
	Taking out and removing piping, including cutting off as necessary, holderbats and making good floor and wall finishes (making good tiling and paintwork elsewhere)				
25	Copper piping not exceeding 50mm internal diameter	m	2		
26	PVC piping not exceeding 50mm internal diameter	m	8		
27	PVC piping not exceeding 110mm internal diameter	m	3		
	Taking out and removing sanitary fittings, tanks, geysers, etc, including disconnecting from pipes, traps, etc and making good floor and wall finishes (making good tiling and paintwork elsewhere)				
28	Stainless steel sink and drainer including timber cupboard 2000 x 600 x 900mm high	No	1		
29	Vitreous china wash hand basin	No	2		
30	Vitreous china WC pan with cistern and flush pipe	No	2		
31	Chromium plated pillar taps	No	2		
32	Chromium plated wall mixer	No	1		
	Taking out and removing glass and mirrors				
33	Glass from steel windows, including cleaning out rebates and preparing for new safety glass	m2	93		
	BUILDING UP OPENINGS				
	Carried to Collection			R	

	Brickwork in NFP bricks in class II mortar in building up openings, including bonding new to existing and making good cement plaster on both sides (making good paintwork elsewhere)				
34	Opening 900 x 2100mm high overall in half brick wall	No	1		
35	Opening 900 x 2100mm high overall in one brick wall	No	1		
	PREPARATORY WORK TO EXISTING SURFACES				
	Repairs to cracks				
36	Repairs to small cracks in walls by removing plaster 300mm wide, nail metal lath pieces over cracks and replaster	m	18		
37	Repairs to large cracks in walls by removing plaster 300mm wide, epoxy fix 6mm diameter steel rods, 500mm girth (bend into staples with 100mm long ends) in pre-drilled holes in brickwork at 200mm centres, nail metal lath pieces over the area and replaster	m	10		
38	Repairs to large cracks in surface beds by removing concrete 50mm wide, filling gap with epoxy and fitting approved aluminium floor expansion joint cover over	m	22		
	Preparing brickwork to receive sills				
39	Hack off plaster and prepare brickwork to receive new internal window sill (sill elsewhere)	m	33		
40	Take out two brick courses under existing windows, insert SANS approved dampproof course, close up brickwork and prepare to receive new external window sill (sill elsewhere)	m	33		
	MAKING GOOD OF FINISHES, ETC				
	Making good cement screeds				
41	Floors where half brick walls removed	m	4		
42	Floors where one brick walls removed	m	42		
	Making good untinted granolithic				
43	25mm Thick on floors in patches	m2	112		
	Carried to Collection			R	

	Making good internal cement plaster				
44	Walls where half brick walls removed	m2	6		
45	Walls where one brick walls removed	m2	13		
46	Walls in patches	m2	12		
	Making good external cement plaster				
47	Walls in patches	m2	14		
	OPENINGS THROUGH EXISTING WALLS ETC				
	Altering plain openings through brick walls, including prestressed concrete lintels, making good cement plaster on both sides and into reveals and with 20 MPa concrete thresholds with steel trowelled finish (making good paintwork elsewhere)				
48	Existing opening 800 x 2100mm high for door with steel frame 900 x 2100mm high overall through half brick wall	No	1		
	Breaking out for and forming openings through brick walls for new doors and frames, including prestressed concrete lintels, making good cement plaster on both sides and into reveals and with 20 MPa concrete thresholds with steel trowelled finish (new doors and frames and making good paintwork elsewhere)				
49	Opening for door with steel frame 900 x 2100mm high overall through half brick wall	No	1		
50	Opening for door with steel frame 900 x 2100mm high overall through one brick wall	No	2		
	SUNDRIES				
	Wash down thorougly with sugarsoap and remove all stains, paint marks, etc, repoint and re-mortar joints as required on existing				
51	Face brick work	m2	891		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 2

ALTERATIONS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	54		
	55		
	56		
	57		
	58		
	59		
	60		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 3

EARTHWORKS

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Nature of ground

A soils investigation has been carried out on the site and the report is available from the principal agent. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"

“Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness

“Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones, pebbles or pieces of concrete not exceeding 0,03m3 in volume

Subterranean water

No subterranean water is expected

The water table is expected to vary between approximately 3m and 10m below natural ground level. The removal of subterranean water is given separately

Carried to Collection R

	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 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 Samples of potential fill material obtained from excavations, trench excavations, etc are to be submitted to and approved by the engineer prior the re-use thereof as "filling" All filling obtained from a commercial source should comply to minimum G5 standard Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source Filling in general shall be compacted to the prescribed percentage Mod AASHTO density Cleaning-up of disturbed areas The contractor will be liable to, upon completion, rehabilitate all those areas of the site used for spoiling, mixing of concrete or any other disturbances caused to the site by the contractor by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent				
	EXCAVATIONS, ETC				
	Excavation in earth not exceeding 2m deep				
1	Trenches for walls to ramps and steps	m3	3		
	Carried to Collection			R	

	Risk of collapse of excavations				
2	Sides of trench and hole excavations not exceeding 1,5m deep	m2	11		
	FILLING, ETC				
	Selected earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage approximately 100m from the perimeter of the excavations or stock piles, compacted to 95% Mod. AASHTO density				
3	Under ramps, etc	m3	2		
4	Backfilling to trenches, holes, etc	m3	1		
	FILLING, ETC				
	Compaction of ground surfaces				
5	Compaction of ground surface under aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	344		
6	Compaction of ground surface under ramps, steps, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	7		
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
7	Post-construction treatment under floors, etc including drilling through wall and floors and pumping soil insecticide into filling, sealing off holes, etc	m2	785		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 3

EARTHWORKS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	62		
	63		
	64		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 4

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels not exceeding 20m2

All reinforced concrete is to be compacted with a mechanical vibrator

Cost of tests

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

Formwork

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

Carried to Collection R

	The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks" <u>Fabric reinforcement</u> Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps				
	<u>UNREINFORCED CONCRETE</u>				
	<u>20MPa/19mm concrete</u>				
1	Steps	m3	1		
2	Ramps	m3	2		
3	Aprons cast in panels	m3	33		
4	Extra over concrete ramps for thickening size 150mm deep, 200mm top and tapering to 100mm at bottom including all excavation to 100mm, backfilling, etc.	m	3		
5	Extra over concrete aprons for thickening size 150mm deep, 200mm top and tapering to 100mm at bottom including all excavation to 100mm, backfilling, etc.	m	364		
	<u>REINFORCED CONCRETE CAST ON/IN FORMWORK</u>				
	Carried to Collection			R	

	25MPa/19mm concrete				
6	Surface beds cast in panels on existing	m3	2		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
7	Surface beds	m2	12		
8	Ramps, etc to falls	m2	7		
9	Aprons, etc to falls	m2	344		
	ROUGH FORMWORK (DEGREE OF ACCURACY II)				
	Rough formwork to sides				
10	Steps	m2	2		
11	Risers of steps not exceeding 300mm high or wide	m	5		
12	Edges of surface beds not exceeding 300mm high or wide	m	12		
13	Edges of aprons not exceeding 300mm high or wide	m	364		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 4

CONCRETE, FORMWORK & REINFORCEMENT

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	66		
	67		
	68		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 5				
	MASONRY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Sizes in descriptions				
	Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick				
	Brickwork				
	Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining work				
	Face bricks				
	Bricks shall be ordered timeously to obtain uniformity in size and colour				
	All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws				
	Pointing				
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc				
	SUPERSTRUCTURE				
	Brickwork of NFP bricks in class II mortar				
1	Piers	m3	2		
	Carried to Collection			R	

2	Half brick walls	m2	23		
3	Half brick walls in beamfilling	m2	12		
4	One brick walls	m2	39		
5	One brick walls in ramp walls	m2	3		
6	One brick walls in firewalls	m2	30		
	BRICKWORK SUNDRIES				
	Bonding new brickwork to existing				
7	Forming toothings and bonding new brickwork to existing	m2	1		
	2,5mm Brickwork reinforcement				
8	75mm Wide reinforcement built in horizontally	m	51		
9	150mm Wide reinforcement built in horizontally	m	212		
10	150mm Wide reinforcement built in horizontally in ramp walls	m	35		
	Prestressed fabricated concrete lintels including necessary temporary supports				
11	110 x 75mm Lintels in lengths not exceeding 3m	m	29		
	Galvanised wire ties etc				
12	4mm Diameter roof tie 2m girth bent double with one end fixed to timber and other end built into brickwork	No	42		
	FACE BRICKWORK				
	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
13	Extra over brickwork for face brickwork in ramp walls	m2	9		
	"Corobrik Middelwit Fynbos Geel" brick-on-edge header course copings, sills, etc pointed with recessed joints on all exposed faces				
14	Coping on top of one brick wall	m	9		
	Carried to Collection			R	

	FIBRE-CEMENT WINDOW SILLS				
	Natural grey sills in single lengths bedded in cement mortar, including metal fixing lugs, etc				
15	15 x 150mm Wide sills set flat and slightly projecting	m	33		
16	15 x 220mm Wide sills set sloping and slightly projecting	m	33		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 5

MASONRY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	70		
	71		
	72		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 6				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m2	1		
	Carried Forward to Summary of Section No. 2			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 7				
	ROOF COVERINGS ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Profiled metal sheeting and accessories				
	Roof sheets shall be fixed to every purlin by means of patented KL700 clips and Class 3 fasteners. Flashings shall be fixed by way of patented S10 brackets (sliding brackets where roof sheets are 30m or longer), in strict accordance with the manufacturer's specifications by an approved sub-contractor. A written and approved five-year guarantee of water-tightness shall be issued after approval of the roofs by the manufacturer				
	Prices to include for all cutting and waste and relevant fixing material, unless otherwise described				
	Sheet metal flashings shall have minimum 100mm laps and linings to valleys, etc minimum 225mm laps				
	All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0,5mm "Global Roofing Solutions Klip-Tite" Z275 (Light Industrial) galvanised troughed sheet steel complying with ISQ 550 (3T) (A653) with a "Chromadek" finish to one side and standard backing coat, Pebble Grey to other, fixed to timber purlins or rails				
1	Roof covering with pitch not exceeding 25 degrees	m2	814		
	Carried to Collection			R	

	0,58mm Z275 spelter galvanised steel sheet accessories iron with "Chromadek" finish to one side with a Pebble Grey backing coat to preceding roof covering				
2	Standard type FK7 counter flashing	m	7		
3	Standard type FK7 counter flashing, including fixing and sealing top edge of flashing against bottom jamb of louvre (louvre elsewhere)	m	7		
4	Standard type FK3 ridge or hip flashing	m	83		
5	Standard type FK8 headwall flashing	m	7		
6	Standard type FK13 barge or gable flashing	m	7		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 7

ROOF COVERINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	75		
	76		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 8

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Fixing

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

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Decorative thermosetting plastic laminate covering

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Decorative laminate finishes shall be glued under pressure

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be red or medium brown meranti, even in grain and colour

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

Carried to Collection R

PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC

Supplementary preambles for plate nailed timber roof construction

The design, manufacturing and installation of the complete prefabricated timber roof construction to be executed by an approved firm of specialists, under a written guarantee, which shall lodge the design with the principal agent for approval before the work commence

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

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

Bolts shall be in accordance with BS 4190 or SANS 135

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

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

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

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

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

Carried to Collection R

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

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

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

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

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

Tendered rates to include for the design and manufacturing of the complete timber roof construction (including all wall plates, purlins, battens, bracing, connections, etc as may be required), transport, loading and unloading, storing under cover and protecting from the weather, hoisting and fixing in position all elements and necessary supervision

Unless otherwise described, the following specifications will apply:

All trusses to be with a 20° pitch at approximately 1100mm centres. Trusses shall be designed for a live load of 0.50 kN/m2 and the dead load consists of 0.5mm thick "Klip-Tite" galvanised troughed sheet steel roof covering on 50 x 76mm purlins at maximum 1200mm centres, 6mm nutec-cement nailed-up ceilings on 38 x 38mm brandering at 400mm centres and 100mm thick fibre insulation blanket laid on top of ceilings

Carried to Collection R

	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	Allow for the preparation and submission of the following documents in respect of all buildings				
1	Detailed shop drawings indicating truss sizes, truss positions, bracings, details, etc. to be submitted for approval prior the commencement of any fabrication		Item		
2	Design certificate indicating the licensed programme used, SANS specifications adhered to, general procedures and loadings adopted, sizes and grading of timber components, details, etc.		Item		
3	Erection guarantee certificate after the whole completed roof truss structure have been inspected, all defective work have been taken out and made good, etc. to the full satisfaction of the Principal Agent		Item		
	The following in pre-fabricated roof trusses manufactured from "CCA Tanalith" pre-treated wrought softwood				
4	Roof construction to double pitched roof of three classroom block with stores (approximately 320m2 roof covering area measured on slope) supplied and erected complete in position including all necessary bracing, gangboarding, purlins, splayed eaves purlins, wall plates, etc	No	1		
	Sawn softwood				
5	38 x 114mm Truss ends in replacing rotten timbers of approximately 1m length and fix to existing	No	30		
	Sundries				
6	Two coats carbolineum on sawn timbers	m2	15		
	EAVES, VERGES, ETC				
	High density plain fibre-cement fascias and barge boards				
7	10 x 225mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	166		
	Carried to Collection			R	

	Fibre-cement socketless barge boards				
8	200 x 80mm Barge boards, including aluminium H-profile jointing strips etc	m	44		
	SKIRTINGS				
	Wrought meranti				
9	19 x 76mm Skirting including 19mm quarter round nailed	m	592		
	DOORS, ETC				
	Wrot meranti doors, hung to steel frames (Exposure Class 1)				
10	40mm Framed batten door 914 x 2032mm high of 40 x 150mm top rail and stiles, 18 x 150mm middle ledge and braces and 40 x 220mm bottom rail, filled in with 18mm V-jointed one side boarding and covered on other side with 4mm plywood with veneer to match door, let into and including rebates all round	No	11		
	"Doors Direct" semi-solid flush doors with 3,2mm prime-coated finished white hardboard covering on both sides, hung to steel frames				
11	40mm Door 813 x 2032mm high	No	6		
	SHELVING				
	ADJUSTABLE SHELVING				
	Laminated S.A. Pine shelving				
12	22mm Thick shelves, 305mm wide, screwed from underside to steel brackets (brackets elsewhere)	m	20		
13	22mm Thick shelves, 457mm wide, screwed from underside to steel brackets (brackets elsewhere)	m	25		
	FLOOR AND WALL CUPBOARDS				
	Carried to Collection			R	

	General notes on floor and wall cupboards Interior carcasses, shelves, bottoms, etc to be 16mm thick interior grade particle board with white "Melamine" decorative thermosetting plastic laminate to all exposed surfaces. Carcasses to be fitted at back with 6mm thick white tempered hardboard backing All exposed parts of carcasses, sides, etc to be 16mm thick interior grade particle board with "Vancouver Maple Melamine" decorative thermosetting plastic laminate to all exposed surfaces Kickplates to be 16mm thick interior grade particle board with "Vancouver Maple Renolit" decorative thermosetting plastic laminate to all exposed surfaces Doors to be 16mm thick interior grade particle board with two long postformed vertical edges with "Vancouver Maple Renolit" decorative thermosetting laminate on all surfaces Hinges to be "Hettich" type and drawer runners to be of 500mm long metal telescopic type. All units to supplied and installed complete with approved handles, hinges and other ironmongery The following cupboard fittings are given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc (tops are measured separately) Prices are to include for all necessary filler pieces against walls etc				
	WASH-UP CUPBOARDS IN PREP AND WASH-UP AREA OF LIFE SCIENCE "Cupboard Connections" or similar approved				
14	Floor cupboard type F750, 750 x 550 x 880mm high with sides, bottom, divisions, shelf, back and two hinged doors	No	1		
	Carried to Collection			R	

15	Sink floor cupboard type F750, 750 x 550 x 880mm high with sides, bottom, divisions, shelf, back and two hinged doors (sink elsewhere)	No	2		
16	Floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, division, shelf, back and two hinged doors	No	2		
17	Floor drawer cupboard type F450/4, 450 x 550 x 880mm high with sides, bottom, division, shelf, back, dividing framework and four drawers	No	2		
	Water resistant particle board with 1mm "Vancouver Maple Formica" decorative thermosetting plastic laminate on one side and balancing plastic laminate on other side				
18	32mm Thick tops, 600mm wide with one long postform "90 degrees Delta" profile leading edge	m	5		
19	Leave or form hole in 32mm thick top for single bowl sink (sink elsewhere)	No	2		

PROVISIONAL SUMS

SUPPLEMENTARY PREAMBLES

Cash discount

No cash discount. All provisional sums are "NET"

Fuel, power and water for commissioning plant

The cost of water, power and fuel for the commissioning of plant shall be borne by the sub-contractor appointed for the relevant sub-contract works in terms of the conditions under which they have/are contracted for the specialist work involved

Profit

Provisional sums are net and do not include builder's discount. The Contractor may allow next to "Profit" items for any profit he might consider necessary

Carried to Collection R

Attendance

It will be expected from the Contractor to render all general attendance and, if specifically so described, special attendance services to each relevant Specialist, all in accordance with the Clauses set out in the "Preliminaries" section

The item "Attendance" which follows each of the provisional sums for sub-contractors' work, shall be deemed to cover all the Contractor's costs incurred in providing free of charge to the sub-contractors, the following:

1 The services as set out in the clauses in the "Preliminaries" section

2 Making good in all trades and cleaning down and removal of rubbish on completion

The Contractor may allow next to "Attendance" items for the recovery of such costs he might consider necessary

Also refer to the Clauses in the "Preliminaries" section for the definitions and adjustment of "Attendance" and "Special Attendance" respectively

Domestic sub-contracts

These scheduled allowances are for work to be executed under separate domestic sub-contracts by firms of Specialists nominated by the Employer and/or Principal Agent

All provisional sums cover the supply and installation of material, equipment, plant, etc., including the commissioning thereof, where applicable

PROVISIONAL SUMS FOR DOMESTIC SUB-CONTRACT WORKS

Laboratory workstations and demonstrantion tables in life science

20	Provide the amount of R400,000.00 (Four hundred thousand Rand) for joinery in life science	Item		400 000.00
21	Allow for profit on above if required	Item		

Carried to Collection R

Section No. 2
RENOVATIONS AND ALTERATIONS TO EXISTING
Bill No. 8
CARPENTRY AND JOINERY
Rantobeng Secondary School

22	Allow for attendance	Item			
	<u>Laboratory seating</u>				
23	Provide the amount of R44,000.00 (Forty four thousand Rand) for laboratory seating in life science	Item			44 000.00
24	Allow for profit on above if required	Item			
25	Allow for attendance	Item			
	<u>Joinery in science</u>				
26	Provide the amount of R50,000.00 (Fifty thousand Rand) for upgrading of joinery in science	Item			50 000.00
27	Allow for profit on above if required	Item			
28	Allow for attendance	Item			
	<u>Joinery in library</u>				
29	Provide the amount of R100,000.00 (One hundred thousand Rand) for upgrading of joinery and shelving in library	Item			100 000.00
30	Allow for profit on above if required	Item			
31	Allow for attendance	Item			
	<u>Joinery in computer</u>				
32	Provide the amount of R100,000.00 (One hundred and fifty thousand Rand) for joinery in computer	Item			100 000.00
33	Allow for profit on above if required	Item			
34	Allow for attendance	Item			
	<u>Equipment in life science</u>				
35	Provide the amount of R240,000.00 (Two hundred and forty thousand Rand) for equipment in life science	Item			240 000.00
36	Allow for profit on above if required	Item			
37	Allow for attendance	Item			
	Carried to Collection			R	

	Equipment in science			
38	Provide the amount of R100,000.00 (One hundred thousand Rand) for equipment in science	Item		100 000.00
39	Allow for profit on above if required	Item		
40	Allow for attendance	Item		
	Computer equipment in computer			
41	Provide the amount of R300,000.00 (Three hundred thousand Rand) for computer equipment	Item		300 000.00
42	Allow for profit on above if required	Item		
43	Allow for attendance	Item		
	Carried to Collection		R	

Section No. 2
RENOVATIONS AND ALTERATIONS TO EXISTING
Bill No. 8
CARPENTRY AND JOINERY
Rantobeng Secondary School

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 8

CARPENTRY AND JOINERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	78		
	79		
	80		
	81		
	82		
	83		
	84		
	85		
	86		
	87		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 9				
	CEILINGS, ETC.				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted", these bolts have been given elsewhere				
	Ceilings				
	Unless otherwise described, ceilings shall be deemed to be horizontal				
	CEILING TIMBERS, BEADS, INSULATION, ETC				
	Wrought meranti				
1	19 x 45mm External cornices nailed	m	152		
	Insulation				
2	100mm glass fibre insulation blanket to manufacturer's specification, laid on ceiling	m2	687		
	NAILED-UP CEILINGS				
	Carried to Collection			R	

	6mm Fibre-cement plain ceiling boards with H-profile galvanised steel jointing strips				
3	Ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	687		
4	External ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	130		
5	Extra over ceiling for opening for 610 x 610mm trap door of 50 x 76mm wrought softwood rebated framing with one cross brander covered with ceiling board and fitted flush in opening, including necessary trimmers around	No	11		
	Gypsum plasterboard cornices				
6	76mm Coved cornices plugged	m	416		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 9

CEILINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	89		
	90		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 10				
	FLOOR COVERINGS, PLASTIC LININGS, ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Fixing				
	Floor coverings, wall linings, etc shall, where applicable, be fixed with adhesive as recommended by the manufacturers of the flooring, linings, etc				
	Prices to include for any self-levelling compound that may be needed by the firm of specialists to level out uneven screeds				
	FLOOR COVERINGS				
	300 x 300 x 2,5mm "FloorworX Superflex" fully-flexible vinyl tiles to SANS 786				
1	On floors	m2	21		
	2,5mm "FloorworX Superflex" fully-flexible vinyl sheeting with welded joints to SANS 786				
2	On floors	m2	143		
3	On floors in thresholds	m2	1		
4	On sides of surface bed platforms	m2	2		
	SKIRTINGS, NOSINGS, ETC				
	"FloorworX Extruda" skirtings, nosings, etc				
5	MSN120 vinyl stair nosings	m	12		
	Carried to Collection			R	

	POLISH, SEALERS, ETC				
	Strip with "FloorworX Stripper" scrub with "FloorworX Rinse" and seal with three coats "FloorworX Gloss Sealer", all in accordance with the manufacturer's instructions				
6	On vinyl floor tiles	m2	166		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 10

FLOOR COVERINGS, PLASTIC LININGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	92		
	93		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 11				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Preparation of door frames				
	Descriptions for flush bolts, door closers, floor springs, etc. shall be deemed to include all necessary preparations to door frames to accommodate same				
	"En-suite" locks				
	All "en-suite" locks shall be ordered to operate in a dedicated master keyed and/or grand master keyed lock system as described				
	Proprietary items				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items				
	Prices are to be based on the specific products/articles specified				
	CATCHES, CABIN HOOKS, ETC				
	Approved				
1	Brass plated window stay	No	41		
2	Brass plated window fastener	No	42		
3	Chromium plated standard striking plate fixed to existing steel door frames	No	11		
	Carried to Collection			R	

	In accordance with "Halstead" catalogue				
4	No. 166 SC Cabin hook and eye, 100mm long, including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	11		
	LOCKS				
	Keys				
	Unless otherwise described locks shall have two keys each				
	Manufactured by "Assa Abloy"				
5	UN33403X000200 brass padlock	No	14		
6	2261-76SS 4-lever upright mortice lock	No	18		
	HANDLES				
	Manufactured by "Assa Abloy"				
7	"Waterbok AL6W45-24AS" lever handle on 45 x 178mm back plate for lever lock	Pairs	18		
	LETTERS, NAME PLATES, ETC				
	Manufactured by "Assa Abloy"				
8	150 x 150mm SS5066E-06SSE06 stainless steel plate with a fire extinguisher symbol	No	14		
9	150 x 150mm SS5066E-06SSE05 stainless steel plate with a fire hose reel symbol	No	5		
	SUNDRIES				
	Manufactured by "Assa Abloy"				
10	9002AS door stop, plugged	No	20		
	SHELVES ETC				
	"Shelco" proprietary type steel shelving with standard powder coated finish				
11	Double slot wall band, 1829mm long, plugged	No	20		
	Carried to Collection			R	

12	305mm Shelf bracket	No	30		
13	457mm Shelf bracket	No	70		
	STEEL LOCKERS, ETC				
	"Greenfield" steel lockers with standard baked enamel finish				
14	"G25" double door steel cupboard, 760 x 610 x 1700mm high with four shelves	No	18		
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC				
	Manufactured by "Vitrex"				
15	Model 2300 pinning boards (code 2309) 2400 x 1200mm high, plugged	No	28		
16	Model 2200 white writing boards (code 2309) 2400 x 1200mm high, plugged	No	3		
17	Code 1017 Enamelled green folding type wall mounted writing board 4800 x 900mm high overall, consisting of one fixed panel 2400 x 900mm high, two fixed panels each 1200 x 900mm high and two swing leaves each 1200 x 900mm high complete with chalk rail, etc, plugged	No	9		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 11

IRONMONGERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	95		
	96		
	97		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 12

METALWORK

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

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

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Preparation of metal surfaces

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer. All scratches, chips or blemishes to be made good on site after erection

Carried to Collection R

Door frames

Unless otherwise described, all frames shall be single rebated and suitable for 40mm thick doors, factory fitted with three washered butt hinges for each door and factory primed complying with SANS Specification 909. Striking plates to be of the chromium plated type

Steel windows

Burglar proofing to be type B20 burglar bars, unless otherwise described. All furniture to be chromium plated

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria

Glazing shall comply with SAGGA regulations. Glass shall be type as shown on the window schedules and/or drawings appended to these bills of quantities and/or as described in the headings to window descriptions. Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings

Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed

For purpose made windows and doors, refer to drawings annexed to these bills of quantities

The following certificates shall be provided prior to commencement of site work:

1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product

2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

Carried to Collection R

	3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process				
	4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked				
	5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years				
	Sealing of all abutments All windows, frames, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicone sealant along all joints				
	STEEL HANDRAILS, BALUSTRADES, ETC				
	Welded balustrading to walkways				
1	Balustrading 1m high formed of hollow section and flat section steel to steps and landings to match existing including fixing to concrete	m	7		
	WELDED SCREENS, GATES, ETC				
	Gates to external doors				
2	Single gate 925 x 2100mm high of 50 x 50 x 2.5mm tubular section framed surround, mitred and welded at angles, filled in with 10 x 10mm square section bars at 45 degrees at 100mm centres and fitted with three suitable hinges welded to and including 100 x 50 x 5mm angle section outer frame, the outer frame bolted to brickwork with six M10 x 90mm rawlbolts and the gate fitted with approved 150mm sliding bolt welded to middle rail with keep in brickwork (padlock elsewhere)	No	5		
	PRESSED STEEL DOOR FRAMES				
	Carried to Collection			R	

	1,2mm Single rebated frames suitable for half brick walls				
3	Frame for door 813 x 2032mm high	No	2		
	1,2mm Single rebated frames suitable for one brick walls				
4	Frame for door 813 x 2032mm high	No	2		
5	Frame for door 914 x 2032mm high	No	1		
	COMBINATION DOORS AND FRAMES				
	Standard "NTY" or similar approved purpose made 1,2mm thick double rebated door frames suitable for one-brick walls				
6	"NTY 914 Classroom Combo" combination door frame with security gate (both opening out), consisting of frame for door 914 x 2032mm high fitted with three parliament hinges with and including single security gate and frame, 914 x 2032mm high overall of 25 x 25 2mm hollow section frame mitred and welded at angles and two 25 x 25 x 2mm hollow section horizontal middle rails, gate filled in with 12 x 12mm square solid section vertical rails at 100mm centres and fitted with locking bolt suitable for padlock (padlock elsewhere), frame formed of 15 x 15 x 2mm hollow section stiles and top rail mitred and welded at angles and fitted with three hinges welded to gate and frame, frame factory welded at maximum 250mm centre to door frame	No	4		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 12

METALWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	99		
	100		
	101		
	102		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 13

PLASTERING

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Granolithic

The method to be used shall be either the monolithic method or the bonded method

For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic

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

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

Carried to Collection R

	Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be throughly 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 Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying Coloured granolithic shall be tinted with an approved colouring pigment mixed into the granolithic in the proportion of 1kg pigment per pocket of cement, of uniform appearance and consistent colour throughout				
	SCREEDS				
	Screeds steel trowelled, on concrete				
1	30mm Thick to floors and landings	m2	164		
2	30mm Thick to floors and landings in thresholds	m2	1		
3	30mm Thick to edges of surface bed platforms	m2	2		
	Screeds wood floated for tiles, on concrete				
4	30mm Thick to floors and landings	m2	518		
5	30mm Thick to floors and landings in thresholds	m2	3		
	GRANOLITHIC				
	Carried to Collection			R	

	Untinted wood floated granolithic, on concrete				
6	30mm Thick on treads and risers of steps including reedings	m2	2		
7	30mm Thick on stepped outer edges of steps	m2	2		
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
8	On walls	m2	74		
9	On narrow widths	m2	1		
10	On narrow widths where existing door frames replaced	m2	7		
	EXTERNAL PLASTER				
	Cement plaster wood floated, on brickwork				
11	On walls	m2	75		
12	On narrow widths	m2	7		
13	On narrow widths where existing door frames replaced	m2	7		
	CORNER PROTECTORS, DIVIDING STRIPS, ETC				
14	30 x 3mm Flat section brass dividing strips between different floor finishes	m	11		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 13

PLASTERING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	104		
	105		
	106		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 12				
	TILING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Patterns				
	Unless otherwise described, tiles shall be laid with continuous joints in both directions				
	Fixing				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	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				
	WALL TILING				
	200 x 200 x 5mm White matt ceramic tiles fixed with adhesive to plaster (plaster elsewhere) and flush jointed with white waterproofed grout				
1	On walls in isolated panels, splashbacks, etc	m2	4		
2	On narrow widths	m2	1		
	Carried to Collection			R	

	FLOOR TILING				
	Ceramic floor tiles (PC amount of R140 per m2 excluding VAT) fixed with adhesive to screed (screed elsewhere) and flush pointed with dark grey tinted waterproof jointing compound				
3	On floors and landings	m2	663		
4	On floors and landings in openings	m2	4		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 14

TILING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	108		
	109		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 14

PLUMBING AND DRAINAGE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Wire gratings

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

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

Stainless steel for economy basins, domestic sinks and worktops 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

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

Waste unions

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

Carried to Collection R

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

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

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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 "?" type. Capillary solder fittings shall comply with ISO 2016

Carried to Collection R

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

Fixing of pipes

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

Paper wrapping to pipes

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

Disinfection of water pipework

Water pipework is to be disinfected at completion

Petrolatum anti-corrosion tape

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with ?% overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Carried to Collection R

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Laying, backfilling, bedding, etc of pipes

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

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

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of ?% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

Carried to Collection R

	As-built drawings Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere) Regulations All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work and a Certificate of Compliance must be issued after completion of the installation				
	RAINWATER DISPOSAL				
	0,6mm Galvanised sheet steel seamless gutters and rainwater pipes				
1	100 x 100mm Roof gutters with beaded front edge	m	32		
2	Extra over gutter for corner	No	8		
3	Extra over gutter for outlet for 100 x 100mm pipe	No	5		
4	Extra over existing gutter for cutting out and inserting outlet for 100 x 100mm diameter pipe	No	11		
5	100 x 100mm Diameter rainwater pipes	m	56		
6	Extra over rainwater pipe for shoe	No	10		
7	Extra over rainwater pipe for eaves or plinth offset	No	10		
	0,6mm Galvanised sheet steel seamless gutters and rainwater pipes with powder coated finish on outside				
8	100 x 100mm Roof gutters with beaded front edge	m	144		
9	Extra over gutter for corner	No	4		
10	Extra over gutter for stopped end	No	8		
11	Extra over gutter for outlet for 100mm diameter pipe	No	18		
	Carried to Collection			R	

12	100mm Diameter rainwater pipes	m	64		
13	Extra over rainwater pipe for shoe	No	18		
14	Extra over rainwater pipe for eaves or plinth offset	No	18		
	SANITARY FITTINGS				
	Manufactured by "Franke"				
15	900 x 500mm Type "Quinline QLX611" with end bowl on cupboard (cupboard elsewhere)	No	2		
16	1500 x 500mm Type "Quinline QLX622" with two centre bowls on cupboard (cupboard elsewhere)	No	1		
17	"Rondo RDX610-45" preparation bowl, 380mm internal diameter, fitted to top of cabinet (cabinet elsewhere)	No	14		
	WASTE UNIONS ETC				
	Manufactured by "Cobra"				
18	38mm "316" chromium plated unslotted bath or sink waste union	No	18		
	TRAPS ETC				
	Manufactured by "Marley"				
19	40 x 50mm rubber double bowl wash trough or sink reseal "P" or "S" trap combination	No	1		
	Manufactured by "Cobra"				
20	"365/50" chromium plated bottle trap	No	17		
	TAPS, VALVES, ETC				
	Manufactured by "Broen"				
21	15mm "Uniflex 25340841001-52B" laboratory pillar tap with overarm swivel outlet	No	15		
22	15mm "Uniflex 25350101035" laboratory wall type sink mixer	No	2		
	SANITARY PLUMBING				
	Carried to Collection			R	

	PVC-U soil and vent pipes				
23	50mm Pipes	m	51		
24	50mm Pipes under surface beds including cutting through concrete and repairs to same	m	18		
25	110mm Pipes	m	4		
	Extra over PVC-U soil and vent pipes for fittings				
26	50mm Bend	No	34		
27	50mm Access bend	No	18		
28	50mm Junction	No	12		
29	50mm Access junction	No	8		
30	110mm Access junction	No	3		
31	110 x 50mm Access reducing junction	No	4		
32	110mm "GI Two-way" vent valve	No	1		
	Testing				
33	Testing waste pipe system		Item		
	WATER SUPPLIES				
	Class 0 copper pipes with capillary couplings				
34	15mm Pipes	m	36		
35	22mm Pipes	m	54		
	Extra over class 0 copper pipes for capillary fittings				
36	15mm Fittings	No	72		
37	22mm Fittings	No	36		
	FIRE APPLIANCES ETC				
	Manufactured by "Safequip"				
38	9 Kg "Blue Crane" dry chemical powder fire extinguisher	No	14		
	Carried to Collection			R	

39	Fire hose reel complete with 30m plastic hose, chromium plated stopcock, shut-off nozzle and wall bracket	No	6		
	WATER SUPPLIES TO FIRE APPLIANCES				
	Galvanised medium steel pipes with screwed and socketed joints				
40	25mm Pipes	m	15		
41	25mm Pipes laid in and including trenches under floors, aprons, etc	m	24		
	Extra over galvanised medium steel pipes with screwed and socketed joints for steel fittings				
42	25mm Fittings	No	24		
	Testing				
43	Testing fire water pipe system		Item		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 15

PLUMBING AND DRAINAGE

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	111		
	112		
	113		
	114		
	115		
	116		
	117		
	118		
Carried Forward to Summary of Section No. 2		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 15				
	GLAZING				
	PREAMBLES				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6.38mm Normal strength (NS) clear laminated safety glass				
1	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	69		
	6.38mm Normal strength (NS) obscure tinted laminated safety glass				
2	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	23		
	Carried Forward to Summary of Section No. 2			R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 16

PAINTWORK

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Paint specifications

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

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

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Previously painted metal surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal

Carried to Collection R

	Previously painted wood surfaces Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
1	Walls	m2	82		
	ON EXTERNAL FLOATED PLASTER SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
2	Walls	m2	89		
	ON FIBRE-CEMENT BOARD SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
3	Ceilings and cornices, including priming metal jointing strips and nailheads	m2	687		
4	External ceilings and cornices, including priming metal jointing strips and nailheads	m2	130		
5	Fascias and barge boards, including priming metal jointing strips	m2	100		
6	Existing fascias and barge boards (not painted), including priming metal jointing strips	m2	108		
7	Sills	m2	13		
	ON METAL SURFACES				
	Carried to Collection			R	

	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200), prime with "Plascon Metalcare Galvanised Iron Primer (GIP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
8	Door frames	m2	15		
9	Existing eaves gutters (not painted)	m2	62		
10	Existing rainwater downpipes (not painted)	m2	9		
11	Rainwater downpipes	m2	43		
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200)", prime with "Plascon Metalcare Galvanised Iron Primer" (UC501) and apply two finishing coats "Plascon Super Universal Enamel" paint				
12	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	47		
	Clean with "Plascon Aquasolv Degreaser (GR1), prime with "Plascon Multi-surface Primer (WUP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
13	Galvanised mild steel pipes not exceeding 300mm girth (Provisional)	m	6		
14	Copper pipes not exceeding 300mm girth (Provisional)	m	6		
	ON WOOD SURFACES				
	Sand down to a smooth finish, prime with "Plascon Wood Primer (UC2)", and apply two finishing coats "Plascon Waterbased Velvaglo (TSE Tint Bases) sating enamel paint				
15	Doors	m2	21		
	Sand down to a smooth finish, stop with "Polycell Woodfiller", stain with "Plascon Woodcare Stain (W-range)" (colour meranti), apply one coat "Plascon Woodcare Ultra Varnish (X44)" thinned with 1:3 mineral turpentine (AZH1), and two finishing coats "Plascon Woodcare Ultra (X44)" suede varnish				
16	Skirtings, rails, etc not exceeding 300 mm girth	m	592		
	Carried to Collection			R	

	Sand down to a smooth finish, stop with "Polycell Woodfiller", apply one coat raw linseed oil thinned with 1:3 mineral turpentine (AZH1), and two finishing coats "Plascon Woodcare Waterbased Premium Exterior Range (WSP23)" clear suede varnish				
17	External cornices, rails, etc not exceeding 300 mm girth	m	152		
	Sand down to a smooth finish, stain with "Plascon Woodcare Stain W-Range" (colour meranti) and apply three coats "Plascon Woodcare Wood Preservative (FPR 1)"				
18	Doors	m2	44		
	Sand down to a smooth finish and apply three coats "Woodoc 10" wood sealer				
19	Shelves	m2	36		
	ON PVC-U SURFACES				
	Clean with "Plascon Aquasolv Degreaser (GR1), prime with "Plascon Multi-surface Primer (WUP1)" and apply two finishing coats "Plascon Super Universal Enamel paint				
20	Pipes not exceeding 300mm girth (Provisional)	m	8		
	PAINTWORK ETC TO PREVIOUSLY PAINTED WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Remove old paint completely by appropriate means, fill all defects with "Polycell Polyfilla", prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint on work in poor condition				
21	Internal walls	m2	321		
	Carried to Collection			R	

	Remove loose and flaking paint, clean with "Polycell Sugar Soap", clean with water, fill all cracks with "Polycell Polyfilla", sand glossy enamel surfaces to a matt finish and apply one coat "Plascon Universal Undercoat" (UC1) and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint on work in good condition				
22	Internal walls	m2	360		
	ON EXTERNAL FLOATED PLASTER SURFACES				
	Remove old paint completely by appropriate means, fill all defects with "Polycell Polyfilla", prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint on work in poor condition				
23	External walls	m2	247		
	ON FIBRE-CEMENT BOARD SURFACES				
	Remove old paint completely by appropriate means, fill all defects with "Polycell Mendall 90", prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint on work in poor condition				
24	Ceilings and cornices, including priming metal jointing strips and nailheads	m2	160		
25	Fascias and barge boards	m2	19		
	Remove loose and flaking paint, clean with "Polycell Sugar Soap", clean with water, fill all cracks with "Polycell Mendall 90", sand glossy enamel surfaces to a matt finish and apply one coat "Plascon Universal Undercoat" (UC1) and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint on work in good condition				
26	Ceilings and cornices, including priming metal jointing strips and nailheads	m2	182		
	ON METAL SURFACES				
	Carried to Collection			R	

	Remove old paint completely by appropriate means, spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200), prime with "Plascon Metalcare Galvanised Iron Primer (GIP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint on work in poor condition				
27	On door frames	m2	21		
	Remove loose and flaking paint, clean with "Polycell Sugar Soap", clean with water, sand glossy enamel surfaces to a matt finish and apply one coat "Plascon Universal Undercoat" (UC1) and two finishing coats "Plascon Super Universal Enamel" paint on work in good condition				
28	On door frames	m2	12		
	Remove old paint completely by appropriate means, spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200)", prime with "Plascon Metalcare Galvanised Iron Primer" (UC501) and apply two finishing coats "Plascon Super Universal Enamel" paint on work in poor condition				
29	On windows with burglar bars (both sides measured of the full flat area)	m2	232		
30	On gates, grilles, burglar screens, balustrading, etc (both sides measured over the full flat area)	m2	13		
	Remove loose and flaking paint, clean with "Polycell Sugar Soap", clean with water, sand glossy enamel surfaces to a matt finish and apply one coat "Plascon Universal Undercoat" (UC1) and two finishing coats "Plascon Super Universal Enamel" paint on work in good condition				
31	On windows with burglar bars (both sides measured of the full flat area)	m2	275		
32	On gates, grilles, burglar screens, balustrading, etc (both sides measured over the full flat area)	m2	244		
33	Recordroom and strongroom doors and frames	m2	5		
	Carried to Collection			R	

	ON WOOD SURFACES				
	Note:				
	Knots in wood to be cleaned from resin with laquer thinners and treated with "Plascon Woodcare Knot Seal (PK 2). Allow to dry completely before proceeding with varnish/painting				
	Sand down to a smooth finish and apply three coats "Plascon Woodcare Wood Preservative (FPR Range)" oil based wood preservative on work in good condition				
34	On doors	m2	21		
35	On external cornices, rails, etc not exceeding 300 mm girth	m	8		
	Remove loose and flaking paint, clean with "Polycell Sugar Soap", clean with water, fill all defects with "Polycell Mendall 90", sand lightly to form a matt surface, spot prime bare surfaces with "Plascon Wood Primer (UC 2), apply one coat "Plascon Universal Undercoat (UC 1) and two coats "Plascon Super Universal Enamel" enamel paint on work in good condition				
36	On doors	m2	11		
	Carried to Collection			R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No. 17

PAINTWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	121		
	122		
	123		
	124		
	125		
	126		
	127		
Carried Forward to Summary of Section No. 2		R	

Section No. 2

RENOVATIONS AND ALTERATIONS TO EXISTING

SECTION SUMMARY - RENOVATIONS AND ALTERATIONS TO EXISTING

Bill No		Page No		Amount
1	DEMOLITIONS	53		
2	ALTERATIONS	61		
3	EARTHWORKS	65		
4	CONCRETE, FORMWORK & REINFORCEMENT	69		
5	MASONRY	73		
6	WATERPROOFING	74		
7	ROOF COVERINGS, ETC	77		
8	CARPENTRY AND JOINERY	88		
9	CEILINGS, ETC	91		
10	FLOOR COVERINGS, PLASTIC LININGS, ETC	94		
11	IRONMONGERY	98		
12	METALWORK	103		
13	PLASTERING	107		
14	TILING	110		
15	PLUMBING AND DRAINAGE	119		
16	GLAZING	120		
17	PAINTWORK	128		
	Carried to Final Summary		R	

Item No		Quantity	Rate	Amount

SECTION NO. 3

ADMINISTRATION BLOCK

BILL NO.1

FOUNDATIONS

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Nature of ground

A soils investigation has been carried out on the site and the report is available from the principal agent. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"

“Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness

“Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones, pebbles or pieces of concrete not exceeding 0,03m3 in volume

Subterranean water

No subterranean water is expected

The water table is expected to vary between approximately 3m and 10m below natural ground level. The removal of subterranean water is given separately

Carried to Collection R

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

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

Samples of potential fill material obtained from excavations, trench excavations, etc are to be submitted to and approved by the engineer prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Cleaning-up of disturbed areas

The contractor will be liable to, upon completion, rehabilitate all those areas of the site used for spoiling, mixing of concrete or any other disturbances caused to the site by the contractor by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent

EXCAVATIONS, ETC

Excavation in earth not exceeding 2m deep

1	Trenches	m3	69		

Carried to Collection R

	Extra over trench and hole excavations in earth for excavation in				
2	Soft rock	m3	14		
3	Hard rock	m3	7		
	Risk of collapse of excavations				
4	Sides of trench and hole excavations not exceeding 1,5m deep	m2	206		
	Extra over all excavations for carting away				
5	Surplus material from excavations and/or stockpiles on site to a dumping site to be located by the contractor	m3	13		
	Keeping excavations free of water				
6	Keeping excavations free of all water other than subterranean water		Item		
	FILLING, ETC				
	Selected earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage approximately 100m from the perimeter of the excavations or stock piles, compacted to 95% Mod. AASHTO density				
7	Under floors, steps, pavings, etc	m3	29		
8	Backfilling to trenches, holes, etc	m3	27		
	Filling of natural gravel material (G5) supplied by the contractor, compacted to 95% Mod AASHTO density				
9	Under floors, steps, pavings etc.	m3	61		
	Filling of coarse river sand supplied by the contractor, consolidated				
10	Under floors etc	m3	7		
	WEED KILLERS, INSECTICIDES, ETC				
	Carried to Collection			R	

	Soil insecticide in accordance with SANS 5859				
11	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	270		
12	To bottoms and sides of trenches etc	m2	206		
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
13	"Modified AASHTO Density" test	No	8		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa/19mm concrete				
14	Strip footings	m3	29		
	TEST CUBES				
	Concrete strength test cubes				
15	Making and testing a set of three 150 x 150 x 150mm concrete strength test cubes	Sets	2		
	REINFORCEMENT				
	Mild steel reinforcement to structural concrete work				
16	8mm Diameter bars	t	0.12		
	High tensile steel reinforcement to structural concrete work				
17	12mm Diameter bars	t	0.63		
	BRICKWORK IN FOUNDATIONS				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
18	One brick walls	m2	115		
	Carried to Collection			R	

	2,5mm Brickwork reinforcement				
19	150mm Wide reinforcement built in horizontally	m	687		
	FACE BRICKWORK				
	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
20	Extra over brickwork for face brickwork	m2	44		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 1

FOUNDATIONS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	130		
	131		
	132		
	133		
	134		
Carried Forward to Summary of Section No. 3		R	

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO.2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels not exceeding 20m2

All reinforced concrete is to be compacted with a mechanical vibrator

Cost of tests

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

Formwork

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

Carried to Collection R

	The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks" <u>Fabric reinforcement</u> Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps				
	<u>REINFORCED CONCRETE CAST ON/IN FORMWORK</u>				
	<u>25MPa/19mm concrete</u>				
1	Surface beds cast in panels on waterproofing	m3	27		
2	Slabs	m3	1		
	<u>TEST CUBES</u>				
	<u>Concrete strength test cubes</u>				
3	Making and testing a set of three 150 x 150 x 150mm concrete strength test cubes	Sets	3		
	<u>CONCRETE SUNDRIES</u>				
	Carried to Collection			R	

	Finishing top surfaces of concrete smooth with a wood float				
4	Surface beds, etc	m2	270		
5	Slabs	m2	5		
	ROUGH FORMWORK (DEGREE OF ACCURACY II)				
	Rough formwork to sides				
6	Edges of slabs not exceeding 300mm high or wide	m	10		
	Rough formwork to soffits				
7	Slabs propped up exceeding 1.5m and not exceeding 3m high	m2	5		
	MOVEMENT JOINTS ETC				
	Two layers of 375 micron dampproof course in slip joints between horizontal concrete and brick surfaces including cement mortar bed				
8	Not exceeding 300mm wide	m	11		
	Expansion joints with 10mm bitumen impregnated softboard between vertical concrete and brick surfaces				
9	Not exceeding 300mm high to edges of surface beds	m	258		
	REINFORCEMENT				
	Mild steel reinforcement to structural concrete work				
10	8mm Diameter bars	t	0.20		
	High tensile steel reinforcement to structural concrete work				
11	12mm Diameter bars	t	0.18		
	Mesh reinforcement				
12	Type 193 fabric reinforcement in concrete surface beds, etc	m2	270		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 2

CONCRETE, FORMWORK & REINFORCEMENT

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	136		
	137		
	138		
Carried Forward to Summary of Section No. 3		R	

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 3

MASONRY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes in descriptions

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

Brickwork

Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining work

Face bricks

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

All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws

Pointing

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

Precast concrete paving

Paving is to be laid in accordance with SABS 1200 MJ, SABS 1058 and the Concrete Masonry Association's specifications

Carried to Collection R

	Paving is to be laid to herringbone pattern on and including 25mm (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere) Clean sand is to be swept into joints between roadstones				
	SUPERSTRUCTURE				
	Brickwork of NFP bricks in class II mortar				
1	Piers	m3	1		
2	Half brick walls	m2	87		
3	One brick walls	m2	291		
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc				
4	One brick walls	m2	28		
	BRICKWORK SUNDRIES				
	Steel bar reinforcement				
5	6mm Diameter mild steel bars built in horizontally	t	0.01		
	2,5mm Brickwork reinforcement				
6	75mm Wide reinforcement built in horizontally	m	124		
7	150mm Wide reinforcement built in horizontally	m	396		
	Prestressed fabricated concrete lintels including necessary temporary supports				
8	110 x 75mm Lintels in lengths not exceeding 3m	m	47		
	Turning pieces to lintels etc				
9	110mm Wide turning pieces	m	36		
10	230mm Wide turning pieces	m	15		
	Galvanised wire ties etc				
11	4mm Diameter roof tie 2m girth bent double with one end built into brickwork and other end fixed to timber	No	92		
	Carried to Collection			R	

	FACE BRICKWORK				
	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
12	Extra over brickwork for face brickwork	m2	198		
13	Extra over brickwork for internal face brickwork	m2	56		
14	Extra over brickwork to piers and pilasters for face brickwork	m2	13		
15	Extra over brickwork for brick-on-edge header course lintels pointed on all exposed faces	m	51		
16	Half brick wall in beamfilling	m2	13		
17	Half brick walls pointed on one side	m2	74		
18	Fair cutting and fitting around pipe not exceeding 100mm diameter	No	9		
	"Corobrik Middelwit Fynbos Geel" brick-on-edge header course copings, sills, etc pointed with recessed joints on all exposed faces				
19	110mm Wide sills set level and slightly protecting	m	8		
20	220mm Wide sills set sloping and slightly protecting	m	36		
	FIBRE-CEMENT WINDOW SILLS				
	Natural grey sills in single lengths bedded in class II mortar including metal fixing lugs etc				
21	15 x 150mm Wide sills set level and slightly projecting	m	29		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 3

MASONRY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	140		
	141		
	142		
Carried Forward to Summary of Section No. 3		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 4				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m2	41		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
2	Under surface beds	m2	270		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 5				
	ROOF COVERINGS ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Profiled metal sheeting and accessories				
	Roof sheets shall be fixed to every purlin by means of patented KL700 clips and Class 3 fasteners. Flashings shall be fixed by way of patented S10 brackets (sliding brackets where roof sheets are 30m or longer), in strict accordance with the manufacturer's specifications by an approved sub-contractor. A written and approved five-year guarantee of water-tightness shall be issued after approval of the roofs by the manufacturer				
	Prices to include for all cutting and waste and relevant fixing material, unless otherwise described				
	Sheet metal flashings shall have minimum 100mm laps and linings to valleys, etc minimum 225mm laps				
	All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0,5mm "Global Roofing Solutions Klip-Tite" Z275 (Light Industrial) galvanised troughed sheet steel complying with ISQ 550 (3T) (A653) with a "Chromadek" finish to one side and standard backing coat, Pebble Grey to other, fixed to timber purlins or rails				
1	Roof covering with pitch not exceeding 25 degrees	m2	385		
	Carried to Collection			R	

	0,58mm Z275 spelter galvanised steel sheet accessories iron with "Chromadek" finish to one side with a Pebble Grey backing coat to preceding roof covering				
2	Standard type FK7 counter flashing, including fixing and sealing top edge of flashing against bottom jamb of louvre (louvre elsewhere)	m	13		
3	Standard type FK3 ridge or hip flashing	m	65		
4	Standard type FK8 headwall flashing	m	13		
5	Standard type FK13 barge or gable flashing	m	16		
6	Purpose made valley gutter, 450mm girth	m	15		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 5

ROOF COVERINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	145		
	146		
Carried Forward to Summary of Section No. 3		R	

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 6

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Fixing

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

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Decorative thermosetting plastic laminate covering

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Decorative laminate finishes shall be glued under pressure

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be red or medium brown meranti, even in grain and colour

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

Carried to Collection R

PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC

Supplementary preambles for plate nailed timber roof construction

The design, manufacturing and installation of the complete prefabricated timber roof construction to be executed by an approved firm of specialists, under a written guarantee, which shall lodge the design with the principal agent for approval before the work commence

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

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

Bolts shall be in accordance with BS 4190 or SANS 135

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

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

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

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

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

Carried to Collection R

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

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

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

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

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

Tendered rates to include for the design and manufacturing of the complete timber roof construction (including all wall plates, purlins, battens, bracing, connections, etc as may be required), transport, loading and unloading, storing under cover and protecting from the weather, hoisting and fixing in position all elements and necessary supervision

Unless otherwise described, the following specifications will apply:

All trusses to be with a 20° pitch at approximately 1100mm centres. Trusses shall be designed for a live load of 0.50 kN/m2 and the dead load consists of 0.5mm thick "Klip-Tite" galvanised troughed sheet steel roof covering on 50 x 76mm purlins at maximum 1200mm centres, 6mm nutec-cement nailed-up ceilings on 38 x 38mm brandering at 400mm centres and 100mm thick fibre insulation blanket laid on top of ceilings

Carried to Collection R

	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	Allow for the preparation and submission of the following documents in respect of all buildings				
1	Detailed shop drawings indicating truss sizes, truss positions, bracings, details, etc. to be submitted for approval prior the commencement of any fabrication		Item		
2	Design certificate indicating the licensed programme used, SANS specifications adhered to, general procedures and loadings adopted, sizes and grading of timber components, details, etc.		Item		
3	Erection guarantee certificate after the whole completed roof truss structure have been inspected, all defective work have been taken out and made good, etc. to the full satisfaction of the Principal Agent		Item		
	The following in pre-fabricated roof trusses manufactured from "CCA Tanalith" pre-treated wrought softwood				
4	Roof construction to double pitched roof with four hipped ends and four valleys for administration block (approximately 385m2 roof covering area measured on slope) supplied and erected complete in position including all necessary bracing, gangboarding, purlins, splayed eaves purlins, wall plates, etc	No	1		
	Sundries				
5	Two coats carbolineum on sawn timbers	m2	19		
	EAVES, VERGES, ETC				
	High density plain fibre-cement fascias and barge boards				
6	10 x 225mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	91		
	SKIRTINGS				
	Carried to Collection			R	

	Wrought meranti				
7	19 x 76mm Skirting including 19mm quarter round nailed	m	235		
	DOORS, ETC				
	"Doors Direct" semi-solid flush doors with 3,2mm prime-coated finished white hardboard covering on both sides, hung to steel frames				
8	40mm Door 813 x 2032mm high	No	11		
	"Pella Prince" vinyl folding doors including sliding gear, ironmongery, etc				
9	Single door for opening 1.2 x 1.2m high fixed to timber frame (frame elsewhere)	No	1		
	FRAMED FRAMES, MULLIONS, TRANSOMS, ETC				
	Wrought meranti				
10	75 x 120mm Rebated and splayed frames plugged	m	4		
11	19 x 270mm Window sill with four labours plugged	m	3		
	SHELVING				
	ADJUSTABLE SHELVING				
	Laminated S.A. Pine shelving				
12	22mm Thick shelves, 305mm wide, screwed from underside to steel brackets (brackets elsewhere)	m	25		
13	22mm Thick shelves, 457mm wide, screwed from underside to steel brackets (brackets elsewhere)	m	41		
	FREE STANDING FLOOR MOUNTED BENCHES				
	Carried to Collection			R	

	General notes on free standing benches Frames for seating (and back rests where applicable) to be of 25 x 25 x 1.6mm powder coated square hollow section framework with adjustable levellers fitted to bottom legs. Legs to be bolted to floor with two 10mm x 75mm long anchor bolts after levelling. Steel framework to be at maximum 750mm centres supported by 20 x 2mm flat bar cross braces Seating (and back rests) to be provided with five rows of 20 x 70mm wrought saligna slats with rounded top edges at 95mm centres screwed from underside to steel framework. All back rests to be provided with 20 x 50mm wrought saligna top rail with rounded front edge, screwed from underside to steel framework. All slats and rails to be finished off with three coats approved matt varnish The following benches have been measured as complete units i.e. the components of the units have not been 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, metalwork, paint or varnish finishes, etc The following floor benches are given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, hardwood slats, ironmongery, metalwork, paint or varnish finishes, etc **FLOOR MOUNTED WALL BENCHES IN WAITING AREA OF ADMINISTRATION** "Cupboard Connections" or similar approved				
14	Type SFFM floor mounted benches without backrests	m	8		
	FLOOR AND WALL CUPBOARDS				
	Carried to Collection			R	

	General notes on floor and wall cupboards Interior carcasses, shelves, bottoms, etc to be 16mm thick interior grade particle board with white "Melamine" decorative thermosetting plastic laminate to all exposed surfaces. Carcasses to be fitted at back with 6mm thick white tempered hardboard backing All exposed parts of carcasses, sides, etc to be 16mm thick interior grade particle board with "Vancouver Maple Melamine" decorative thermosetting plastic laminate to all exposed surfaces Kickplates to be 16mm thick interior grade particle board with "Vancouver Maple Renolit" decorative thermosetting plastic laminate to all exposed surfaces Doors to be 16mm thick interior grade particle board with two long postformed vertical edges with "Vancouver Maple Renolit" decorative thermosetting laminate on all surfaces Hinges to be "Hettich" type and drawer runners to be of 500mm long metal telescopic type. All units to supplied and installed complete with approved handles, hinges and other ironmongery The following cupboard fittings are given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc (tops are measured separately) Prices are to include for all necessary filler pieces against walls etc **KITCHEN CUPBOARDS IN KITCHEN OF ADMINISTRATION** "Cupboard Connections" or similar approved				
15	Wall cupboard type W450, 450 x 300 x 600mm high with top, sides, bottom, shelf, back and one hinged door	No	1		
	Carried to Collection			R	

16	Wall cupboard type W900, 900 x 300 x 600mm high with top, sides, bottom, shelf, back and two hinged doors	No	1		
17	Wall cupboard type W600 MICRO, 600 x 300 x 450mm high with top, sides and bottom	No	1		
18	Floor cupboard type F600, 600 x 550 x 880mm high with sides, bottom, division, shelf, back and one hinged door	No	1		
19	Floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, division, shelf, back and two hinged doors	No	2		
20	Sink floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, divisions, shelf, back and two hinged doors (sink elsewhere)	No	1		
21	Floor corner cupboard type FCU900, 1800mm overall x 550 x 880mm high with sides, bottom, division, shelf, back and one folding hinged door	No	1		
22	Floor drawer cupboard type F450/4, 450 x 550 x 880mm high with sides, bottom, division, shelf, back, dividing framework and four drawers	No	1		
	Water resistant particle board with 1mm "Vancouver Maple Formica" decorative thermosetting plastic laminate on one side and balancing plastic laminate on other side				
23	32mm Thick tops, 600mm wide with one long postform "90 degrees Delta" profile leading edge	m	5		
24	Leave or form hole in 32mm thick top for single bowl sink (sink elsewhere)	No	1		
	CUPBOARDS IN GENERAL OFFICE OF ADMINISTRATION				
	"Cupboard Connections" or similar approved				
25	Wall cupboard type HW900, 900 x 300 x 1080mm high with top, sides, bottom, shelves, back and two hinged doors	No	2		
26	Wall cupboard type HW600 GLASS, 600 x 300 x 1080mm high with top, sides, bottom, shelves, back and one glass panelled hinged door	No	1		
	Carried to Collection			R	

27	Wall cupboard type HW900 GLASS, 900 x 300 x 1080mm high with top, sides, bottom, shelves, back and two glass panelled hinged doors	No	2		
28	Floor drawer cupboard type F600/4, 600 x 550 x 880mm high with sides, bottom, division, shelf, back, dividing framework and four drawers	No	1		
29	Floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, division, shelf, back and two hinged doors	No	4		
	Water resistant particle board with 1mm "Vancouver Maple Formica" decorative thermosetting plastic laminate on one side and balancing plastic laminate on other side				
30	32mm Thick tops, 600mm wide with one long postform "90 degrees Delta" profile leading edge	m	4		
	CUPBOARDS IN PRINCIPAL'S OFFICE IN ADMINISTRATION				
	"Cupboard Connections" or similar approved				
31	Floor cupboard type F600, 600 x 550 x 880mm high with sides, bottom, division, shelf, back and one hinged door	No	2		
32	Floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, division, shelf, back and two hinged doors	No	4		
33	Floor drawer cupboard type F600/4, 600 x 550 x 880mm high with sides, bottom, division, shelf, back, dividing framework and four drawers	No	1		
	Water resistant particle board with 1mm "Vancouver Maple Formica" decorative thermosetting plastic laminate on one side and balancing plastic laminate on other side				
34	32mm Thick tops, 600mm wide with one long postform "90 degrees Delta" profile leading edge	m	5		
	CUPBOARDS IN VICE PRINCIPAL'S OFFICE IN ADMINISTRATION				
	Carried to Collection			R	

	"Cupboard Connections" or similar approved				
35	Floor cupboard type F600, 600 x 550 x 880mm high with sides, bottom, division, shelf, back and one hinged door	No	2		
36	Floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, division, shelf, back and two hinged doors	No	1		
37	Floor drawer cupboard type F600/4, 600 x 550 x 880mm high with sides, bottom, division, shelf, back, dividing framework and four drawers	No	1		
	Water resistant particle board with 1mm "Vancouver Maple Formica" decorative thermosetting plastic laminate on one side and balancing plastic laminate on other side				
38	32mm Thick tops, 600mm wide with one long postform "90 degrees Delta" profile leading edge	m	3		
	CUPBOARDS IN PRINTING ROOM IN ADMINISTRATION				
	"Cupboard Connections" or similar approved				
39	Floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, division, shelf, back and two hinged doors	No	2		
40	Floor cupboard type F900, 900 x 550 x 880mm high with sides, bottom, division and shelf (no doors)	No	1		
	Water resistant particle board with 1mm "Vancouver Maple Formica" decorative thermosetting plastic laminate on one side and balancing plastic laminate on other side				
41	32mm Thick tops, 600mm wide with one long postform "90 degrees Delta" profile leading edge	m	3		
	CUPBOARDS IN RECEPTION IN ADMINISTRATION				
	"Cupboard Connections" or similar approved				
42	Floor drawer cupboard type F600/4, 600 x 550 x 880mm high with sides, bottom, division, shelf, back, dividing framework and four drawers	No	3		
	Carried to Collection			R	

43	Floor cupboard type F500 (Computer), 500 x 550 x 880mm high with sides, bottom, division and shelves (no doors)	No	1			
44	Floor corner cupboard type FCU900, 1800mm overall x 550 x 880mm high with sides, bottom, division, shelf, back and one folding hinged door	No	1			
	Water resistant particle board with 1mm "Vancouver Maple Formica" decorative thermosetting plastic laminate on one side and balancing plastic laminate on other side					
45	32mm Thick tops, 600mm wide with one long postform "90 degrees Delta" profile leading edge including supporting top against wall and floor cupboards for 1820mm clean opening below	m	5			
	Carried to Collection			R		

Section No. 3

ADMINISTRATION BLOCK

Bill No. 6

CARPENTRY AND JOINERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	148		
	149		
	150		
	151		
	152		
	153		
	154		
	155		
	156		
	157		
	158		
Carried Forward to Summary of Section No. 3		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 7				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted", these bolts have been given elsewhere				
	Ceilings				
	Unless otherwise described, ceilings shall be deemed to be horizontal				
	CEILING TIMBERS, BEADS, INSULATION, ETC				
	Wrought meranti				
1	19 x 45mm External cornices nailed	m	13		
	Insulation				
2	100mm glass fibre insulation blanket to manufacturer's specification, laid on ceiling	m2	265		
	NAILED-UP CEILINGS				
	Carried to Collection			R	

	6mm Fibre-cement plain ceiling boards with H-profile galvanised steel jointing strips				
3	Ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	265		
4	External ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	5		
5	Extra over ceiling for opening for 610 x 610mm trap door of 50 x 76mm wrought softwood rebated framing with one cross brander covered with ceiling board and fitted flush in opening, including necessary trimmers around	No	1		
	Gypsum plasterboard cornices				
6	76mm Coved cornices plugged	m	307		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 7

CEILINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	160		
	161		
Carried Forward to Summary of Section No. 3		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Preparation of door frames				
	Descriptions for flush bolts, door closers, floor springs, etc. shall be deemed to include all necessary preparations to door frames to accommodate same				
	"En-suite" locks				
	All "en-suite" locks shall be ordered to operate in a dedicated master keyed and/or grand master keyed lock system as described				
	Proprietary items				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items				
	Prices are to be based on the specific products/articles specified				
	HINGES, BOLTS, ETC				
	Manufactured by "Assa Abloy"				
1	AL8294AS mortised WC indicator bolt	Sets	2		
	LOCKS				
	Carried to Collection			R	

	Keys				
	Unless otherwise described locks shall have two keys each				
	Manufactured by "Assa Abloy"				
2	21314-76SS bathroom/WC deadlock	No	2		
3	2261-76SS 4-lever upright mortice lock	No	9		
	"EN-SUITE" LOCKS				
	The following locks are to be suitable for master and grand master key operation				
	Manufactured by "Assa Abloy"				
4	Masterkey	No	1		
	REBATE CONVERSION KITS				
	Manufactured by "Assa Abloy"				
5	2900SS rebate conversion set for euro-profile locks	No	1		
	HANDLES				
	Manufactured by "Assa Abloy"				
6	"Waterbok AL6W45-24AS" lever handle on 45 x 178mm back plate for lever lock	Pairs	9		
7	AL5D63-06AS pull handle on 152 x 76mm back plate	No	2		
8	AL5D66-06AS push plate	No	2		
	DOOR CLOSERS				
	Manufactured by "Assa Abloy"				
9	7836SC slide channel door closer	No	2		
	LETTERS, NAME PLATES, ETC				
	Carried to Collection			R	

	Manufactured by "Assa Abloy"				
10	150 x 150mm SS5066E-06SSE10 stainless steel plate with a male symbol	No	1		
11	150 x 150mm SS5066E-06SSE11 stainless steel plate with a female symbol	No	1		
12	150 x 150mm SS5066E-06SSE06 stainless steel plate with a fire extinguisher symbol	No	4		
13	150 x 150mm SS5066E-06SSE05 stainless steel plate with a fire hose reel symbol	No	1		
14	150 x 150mm SS5066E-06SSE16 stainless steel plate with a running man symbol	No	2		
15	150 x 150mm SS5066E-06SSE08 stainless steel plate with a red or green arrow symbol	No	7		
	SUNDRIES				
	Manufactured by "Assa Abloy"				
16	9002AS door stop, plugged	No	17		
17	AL8722AS hat and coat hook	No	2		
	Manufactured by "Afrimedics"				
18	Government Regulation 7 epoxy powder coated first aid metal box, including standard school kit equipment, plugged	No	1		
	Manufactured by "The Safe Shop"				
19	50 Key CAB50 Slimline design wall mounted key cabinet, plugged	No	1		
	BATHROOM FITTINGS				
	In accordance with "Buchel" catalogue				
20	19mm Diameter chromium plated towel rail 600mm long including end brackets	No	3		
21	120 x 90 x 205mm High "B-2111 Bobrick Classic" stainless steel soap dispenser, plugged	No	3		
	Carried to Collection			R	

22	150 x 155 x 280mm High "B-4288 Bobrick Contura" stainless steel two-tier lockable toilet roll dispenser, plugged	No	2		
23	265 x 220 x 230mm High "B-261 Bobrick Classic" stainless steel waste receptacle	No	3		
24	275 x 102 x 355mm High "B-262 Bobrick Classic" stainless steel towel dispenser, plugged	No	2		
	SHELVES ETC				
	"Shelco" proprietary type steel shelving with standard powder coated finish				
25	Double slot wall band, 1829mm long, plugged	No	31		
26	305mm Shelf bracket	No	52		
27	457mm Shelf bracket	No	72		
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC				
	Manufactured by "Vitrex"				
28	Model 2300 pinning boards (code 2309) 2400 x 1200mm high, plugged	No	3		
29	Model 2300 pinning boards (code 2310) 3000 x 1200mm high, plugged	No	4		
30	Model 2200 white writing boards (code 2309) 2400 x 1200mm high, plugged	No	3		
	VENETIAN BLINDS				
	"Windovert" aluminium venetian blinds with 25mm blades, fitted and plugged within the window reveal; complete with hold down brackets, operating chains, tilt rods, etc, to be installed by a specialist subcontractor				
31	Venetian blind for 533 x 949mm high window (Admin)	No	5		
32	Venetian blind for 1022 x 949mm high window (Admin)	No	3		
33	Venetian blind for 1511 x 1264mm high window (Admin)	No	14		
34	Venetian blind for 2044 x 1264mm high window (Admin)	No	1		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 8

IRONMONGERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	163		
	164		
	165		
	166		
Carried Forward to Summary of Section No. 3		R	

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 9

METALWORK

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

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

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Preparation of metal surfaces

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer. All scratches, chips or blemishes to be made good on site after erection

Carried to Collection R

Door frames

Unless otherwise described, all frames shall be single rebated and suitable for 40mm thick doors, factory fitted with three washered butt hinges for each door and factory primed complying with SANS Specification 909. Striking plates to be of the chromium plated type

Steel windows

Burglar proofing to be type B20 burglar bars, unless otherwise described. All furniture to be chromium plated

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria

Glazing shall comply with SAGGA regulations. Glass shall be type as shown on the window schedules and/or drawings appended to these bills of quantities and/or as described in the headings to window descriptions. Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings

Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed

For purpose made windows and doors, refer to drawings annexed to these bills of quantities

The following certificates shall be provided prior to commencement of site work:

1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer supplying the architectural aluminium product

2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

Carried to Collection R

	3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process				
	4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked				
	5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years				
	Sealing of all abutments All windows, frames, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicone sealant along all joints				
	STEEL GATES, SCREENS, ETC				
	Gates				
1	Double gate and frame 1575 x 2100mm high overall with frame of 25 x 25 x 1.6mm tubular section framed surround, mitred and welded at angles with eight 50 x 50 x 5mm flat section brackets, once holed and welded on at sides and bolted to wall with eight M10 x 95mm expansion bolts (expansion bolts elsewhere), gate in two equal leaves, each leaf formed of 25 x 25 x 1.6mm tubular section framed surround, mitred and welded at angles with two horizontal middle rails 150mm apart to form three panels, all panels filled in with 12 x 12mm mild steel solid section vertical rails at maximum 100mm centres, the gate fitted with four pairs 100mm bullet hinges welded to gate and frame including approved 180mm barrel bolts welded to inside bottom and top of one leaf with keep let into brickwork or concrete and gate supplied with suitable lock case with and including "Assa Abloy 2261-76SS" four lever upright mortice lock and one pair "Assa Abloy AL6W45-24AS handles on 178 x 45mm backplate	No	2		
2	10mm Diameter x 95mm long sleeved masonry anchor bolt	No	16		
	Carried to Collection			R	

	PRESSED STEEL DOOR FRAMES				
	1,2mm Single rebated frames suitable for half brick walls				
3	Frame for door 813 x 2032mm high	No	10		
	1,2mm Single rebated frames suitable for one brick walls				
4	Frame for door 813 x 2032mm high	No	1		
	STEEL WINDOWS, DOORS, ETC				
	Standard residential awning type windows with 12 x 12mm solid horisontal burglar bars at 150mm centres to all sashes				
5	Window type SWE31S, 533 x 949mm high	No	5		
6	Window type SWE37S, 1022 x 949mm high	No	3		
7	Window type SWE418, 1511 x 1264mm high	No	14		
8	Composite window type SWE37S/SWE37S, size 2044 x 949mm high	No	1		
	Steel glazing beads, coupling transoms, coupling mullions, etc				
9	Standard residential section coupling transom, 949mm long	No	1		
	STEEL LOUVRES, ETC				
	Purpose made louvres				
10	Epoxy powder coated (colour to match roof sheeting) triangular shaped (on elevation) residential section louvred ventilators 2400mm wide (at horizontal bottom) x 440mm high overall, filled in with type LC fixed horizontal louvre blades fixed to surround and covered at back with No 256 galvanised mesh mosquito gauze, fixed with and including 3 x 20mm steel flat section cover strips screwed on	No	2		
	STEEL STRONG ROOM DOORS, VENTILATORS, ETC.				
	Carried to Collection			R	

	"Mutual Safes" strongroom doors etc suitable for 230mm walls fixed to brickwork or concrete				
11	Model DS50/2 SABS category 2 (Light duty) strong room door complete with two 7 lever keylocks and 3 wheel combination lock	No	1		
12	185 x 185 mm Double ended strongroom telescopic ventilator for 230mm wall, complete with two 255 x 255 mm face plates, baffle plates, fixing lugs, etc	No	2		
13	Standard safe doorstop	No	1		
	ALUMINIUM DOORS				
	Natural anodised aluminium doors glazed with 6.38mm clear PVB laminated safety glass as per "Wispeco" system, complete with subframes, ironmongery, glass, sealing, etc and fixing to brickwork or concrete				
14	Double swing door with frame suitable for opening 1575 x 2100mm high overall in two equal leaves to swing to both sides, each leaf formed of two stiles, top, bottom and middle rail to form two sashes each in fixed panel with and including one pair "Assa Abloy" AL5512-200BBAS back-to-back cranked pull handles to each leaf, one leaf fitted with 40mm "Assa Abloy" L-21315-40PL narrow stile deadlock, 40mm T2X20/40NGMK euro-profile single cylinder and one pair "Assa Abloy" 5305-05 escutcheons, other leaf fitted with one pair 150mm "Assa Abloy" AL8208-150AS" flush, both leaves fitted with "Dorma" BTS75 V/EN2-5 stainless steel double action floor spring complete with cover plate, bottom strap, top centre and non-hold open action installed complete	No	2		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 9

METALWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	168		
	169		
	170		
	171		
	172		
Carried Forward to Summary of Section No. 3		R	

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 10

PLASTERING

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Granolithic

The method to be used shall be either the monolithic method or the bonded method

For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic

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

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

Carried to Collection R

	Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be throughly 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 Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying Coloured granolithic shall be tinted with an approved colouring pigment mixed into the granolithic in the proportion of 1kg pigment per pocket of cement, of uniform appearance and consistent colour throughout				
	SCREEDS				
	Screeds wood floated for tiles, on concrete				
1	30mm Thick to floors and landings	m2	270		
2	30mm Thick to floors and landings in thresholds	m2	3		
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
3	On walls	m2	540		
4	On narrow widths	m2	14		
	Carried to Collection			R	

	Cement plaster wood floated for tiles, on brickwork				
5	On walls	m2	31		
6	On narrow widths	m2	1		
	Cement plaster steel trowelled, on concrete				
7	On ceilings and beams	m2	5		
	CORNER PROTECTORS, DIVIDING STRIPS, ETC				
8	30 x 3mm Flat section aluminium cover strips screwed to floor between different floor finishes	m	7		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 10

PLASTERING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	174		
	175		
	176		
Carried Forward to Summary of Section No. 3		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 11				
	TILING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Patterns				
	Unless otherwise described, tiles shall be laid with continuous joints in both directions				
	Fixing				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	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				
	WALL TILING				
	200 x 200 x 5mm White matt ceramic tiles fixed with adhesive to plaster (plaster elsewhere) and flush jointed with white waterproofed grout				
1	On walls	m2	31		
2	On walls in isolated panels, splashbacks, etc	m2	3		
	Carried to Collection			R	

3	On narrow widths	m2	1		
	FLOOR TILING				
	Ceramic floor tiles (PC amount of R140 per m2 excluding VAT) fixed with adhesive to screed (screed elsewhere) and flush pointed with dark grey tinted waterproof jointing compound				
4	On floors and landings	m2	260		
5	On floors and landings in openings	m2	3		
	Ceramic floor tiles (PC amount of R160 per m2 excluding VAT) fixed with adhesive to screed (screed elsewhere) and flush pointed with dark grey tinted waterproof jointing compound				
6	On floors and landings	m2	10		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 11

TILING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	178		
	179		
Carried Forward to Summary of Section No. 3		R	

Section No. 3
ADMINISTRATION BLOCK
Bill No. 11
TILING
Rantobeng Secondary School

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 12

PLUMBING AND DRAINAGE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Wire gratings

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

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

Stainless steel for economy basins, domestic sinks and worktops 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

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

Waste unions

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

Carried to Collection R

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

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

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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 "?" type. Capillary solder fittings shall comply with ISO 2016

Carried to Collection R

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

Fixing of pipes

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

Paper wrapping to pipes

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

Disinfection of water pipework

Water pipework is to be disinfected at completion

Petrolatum anti-corrosion tape

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with ?% overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Carried to Collection R

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Laying, backfilling, bedding, etc of pipes

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

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

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of ?% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

Carried to Collection R

	As-built drawings Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	Regulations All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work and a Certificate of Compliance must be issued after completion of the installation				
	RAINWATER DISPOSAL				
	0,6mm Galvanised sheet steel seamless gutters and rainwater pipes with powder coated finish on outside				
1	100 x 100mm Roof gutters with beaded front edge	m	91		
2	Extra over gutter for corner	No	12		
3	Extra over gutter for outlet for 100mm diameter pipe	No	12		
4	100mm Diameter rainwater pipes	m	42		
5	Extra over rainwater pipe for shoe	No	12		
6	Extra over rainwater pipe for eaves or plinth offset	No	12		
	SANITARY FITTINGS				
	Manufactured by "Franke"				
7	900 x 500mm Type "Quinline QLX611" with end bowl on cupboard (cupboard elsewhere)	No	1		
	Manufactured by "Vaal Sanitaryware"				
8	456 x 290mm "Bantam" lavatory basin with two tapholes fixed to wall with and including two fixing bolts	No	3		
	Carried to Collection			R	

9	"Hibiscus" close-coupled wc suite comprising pan with double flap heavy duty thermoplastic seat and matching 9 litre cistern	No	2		
	WASTE UNIONS ETC				
	Manufactured by "Cobra"				
10	32mm "308" chromium plated unslotted basin waste union	No	3		
11	38mm "316" chromium plated unslotted bath or sink waste union	No	1		
	TRAPS ETC				
	Manufactured by "Cobra"				
12	"345/50" chromium plated bottle trap	No	3		
13	"365/50" chromium plated bottle trap	No	1		
	TAPS, VALVES, ETC				
	Manufactured by "Cobra"				
14	25mm "1001/125-25" brass full way gate valve	No	1		
15	15mm "232/350" angle regulating valve with 350mm long flexible service connection	No	8		
16	15mm "108LK" brass hose bib tap	No	1		
17	15mm "211-15 Star" pillar tap	No	6		
18	15mm "266/041/108 Star" wall type sink mixer with overarm swivel outlet	No	1		
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
19	50mm Pipes	m	14		
20	50mm Pipes laid in and including trenches not exceeding 1m deep	m	1		
21	110mm Pipes	m	3		
	Carried to Collection			R	

	Extra over PVC-U soil and vent pipes for fittings				
22	50mm Bend	No	8		
23	50mm Access bend	No	3		
24	50mm Junction	No	1		
25	50mm Access junction	No	2		
26	110mm Access junction	No	2		
27	110 x 50mm Access reducing junction	No	2		
28	110mm "GI Two-way" vent valve	No	2		
	Testing				
29	Testing waste pipe system		Item		
	WATER SUPPLIES				
	Class 0 copper pipes with capillary couplings				
30	15mm Pipes	m	10		
31	22mm Pipes	m	69		
	Extra over class 0 copper pipes for capillary fittings				
32	15mm Fittings	No	26		
33	22mm Fittings	No	18		
	ELECTRIC WATER HEATERS				
	Manufactured by "Kwikot"				
34	150 Litre "Megaflo" electric water heater mounted horizontally on roof timbers	No	1		
35	"KwikTray" (code GSTP-1650) polyethylene tray size 1350 x 600mm with 50mm PVC adaptor for 40mm overflow pipe and fix in position	No	1		
	PVC-U pipes				
36	40mm Overflow pipes	m	3		
	Carried to Collection			R	

	Extra over PVC-U pipes for fittings				
37	40mm Bend	No	1		
38	38mm Sawn softwood boarding for geyser platform formed of 38 x 228mm boards butt-jointed and nailed to truss tie beams.	m2	2		
	Manufactured by "Cobra"				
39	"PB 1.10 RB" vacuum breaker	No	2		
40	"PA 3.132 Masterflo 1" pressure reducing valve	No	1		
41	25mm "1001/125-25" brass full way gate valve	No	2		
	Testing				
42	Testing water pipe system		Item		
	FIRE APPLIANCES ETC				
	Manufactured by "Safequip"				
43	9 Kg "Blue Crane" dry chemical powder fire extinguisher	No	4		
44	Fire hose reel complete with 30m plastic hose, chromium plated stopcock, shut-off nozzle and wall bracket	No	1		
	WATER SUPPLIES TO FIRE APPLIANCES				
	Class 16 PVC-U pressure pipes with solvent welded joints				
45	25mm Pipes laid in and including trenches under floors, aprons, etc	m	2		
	Extra over Class 16 PVC-U pressure pipes for fittings with solvent welded joints				
46	50mm Elbow	No	1		
47	50mm Reducer	No	1		
	Galvanised medium steel pipes with screwed and socketed joints				
48	25mm Pipes	m	2		
	Carried to Collection			R	

49	25mm Pipes laid in and including trenches under floors, aprons, etc	m	9		
	<u>Extra over galvanised medium steel pipes with screwed and socketed joints for steel fittings</u>				
50	25mm Fittings	No	3		
	<u>Testing</u>				
51	Testing fire water pipe system		Item		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 12

PLUMBING AND DRAINAGE

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	181		
	182		
	183		
	184		
	185		
	186		
	187		
	188		
	189		
Carried Forward to Summary of Section No. 3		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 13				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6.38mm Normal strength (NS) clear laminated safety glass				
1	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	27		
	6.38mm Normal strength (NS) obscure tinted laminated safety glass				
2	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	3		
	MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with bevelled edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
3	Mirror 400 x 600mm high with four screws	No	3		
	Carried Forward to Summary of Section No. 3			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 14				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Paint specifications				
	All painting shall be done in accordance with "Plascon" specifications unless otherwise described				
	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				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
1	Walls	m2	554		
2	Ceilings and beams	m2	5		
	ON EXTERNAL FLOATED PLASTER SURFACES				
	Carried to Collection			R	

	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
3	Ceilings and beams ("Pastel" colour group)	m2	2		
	ON FIBRE-CEMENT BOARD SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
4	Ceilings and cornices, including priming metal jointing strips and nailheads	m2	265		
5	External ceilings and cornices, including priming metal jointing strips and nailheads	m2	5		
6	Fascias and barge boards, including priming metal jointing strips	m2	28		
7	Sills	m2	5		
	ON METAL SURFACES				
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200), prime with "Plascon Metalcare Galvanised Iron Primer (GIP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
8	Door frames	m2	12		
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200)", prime with "Plascon Metalcare Galvanised Iron Primer" (UC501) and apply two finishing coats "Plascon Super Universal Enamel" paint				
9	Windows with burglar bars	m2	70		
10	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	13		
	Carried to Collection			R	

	Clean with "Plascon Aquasolv Degreaser (GR1), prime with "Plascon Multi-surface Primer (WUP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
11	Galvanised mild steel pipes not exceeding 300mm girth (Provisional)	m	2		
12	Copper pipes not exceeding 300mm girth (Provisional)	m	3		
	ON WOOD SURFACES				
	Sand down to a smooth finish, seal knots with "Plascon Woodcare Knot Seal (PK2)", prime with "Plascon Wood Primer (UC2)", and apply two finishing coats "Plascon Super Universal Enamel" paint				
13	Roof timbers at eaves and verges	m2	38		
	Sand down to a smooth finish, prime with "Plascon Wood Primer (UC2)", and apply two finishing coats "Plascon Waterbased Velvaglo (TSE Tint Bases) sating enamel paint				
14	Doors	m2	40		
	Sand down to a smooth finish, stop with "Polycell Woodfiller", stain with "Plascon Woodcare Stain (W-range)" (colour meranti), apply one coat "Plascon Woodcare Ultra Varnish (X44)" thinned with 1:3 mineral turpentine (AZH1), and two finishing coats "Plascon Woodcare Ultra (X44)" suede varnish				
15	Framed frames, sills, etc not exceeding 300 mm girth	m	5		
16	Skirtings, rails, etc not exceeding 300 mm girth	m	235		
	Sand down to a smooth finish and apply three coats "Woodoc 10" wood sealer				
17	Shelves	m2	53		
	Sand down to a smooth finish, stop with "Polycell Woodfiller", apply one coat raw linseed oil thinned with 1:3 mineral turpentine (AZH1), and two finishing coats "Plascon Woodcare Waterbased Premium Exterior Range (WSP23)" clear suede varnish				
18	External cornices, rails, etc not exceeding 300 mm girth	m	13		
	Carried to Collection			R	

	ON PVC-U SURFACES				
	Clean with "Plascon Aquasolv Degreaser (GR1), prime with "Plascon Multi-surface Primer (WUP1)" and apply two finishing coats "Plascon Super Universal Enamel paint				
19	Pipes not exceeding 300mm girth (Provisional)	m	7		
	Carried to Collection			R	

Section No. 3

ADMINISTRATION BLOCK

Bill No. 14

PAINTWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	192		
	193		
	194		
	195		
Carried Forward to Summary of Section No. 3		R	

Section No. 3

ADMINISTRATION BLOCK

SECTION SUMMARY - ADMINISTRATION BLOCK

Bill No		Page No		Amount
1	FOUNDATIONS	135		
2	CONCRETE, FORMWORK & REINFORCEMENT	139		
3	MASONRY	143		
4	WATERPROOFING	144		
5	ROOF COVERINGS, ETC	147		
6	CARPENTRY AND JOINERY	159		
7	CEILINGS, ETC	162		
8	IRONMONGERY	167		
9	METALWORK	173		
10	PLASTERING	177		
11	TILING	180		
12	PLUMBING AND DRAINAGE	190		
13	GLAZING	191		
14	PAINTWORK	196		

Carried to Final Summary R

Item No		Quantity	Rate	Amount

SECTION NO. 4

5 X 4-CLASSROOM AND 2 X 3-CLASSROOM BLOCKS

BILL NO.1

FOUNDATIONS

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Nature of ground

A soils investigation has been carried out on the site and the report is available from the principal agent. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"

“Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness

“Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones, pebbles or pieces of concrete not exceeding 0,03m3 in volume

Subterranean water

No subterranean water is expected

The water table is expected to vary between approximately 3m and 10m below natural ground level. The removal of subterranean water is given separately

Carried to Collection R

	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 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 Samples of potential fill material obtained from excavations, trench excavations, etc are to be submitted to and approved by the engineer prior the re-use thereof as "filling" All filling obtained from a commercial source should comply to minimum G5 standard Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source Filling in general shall be compacted to the prescribed percentage Mod AASHTO density Cleaning-up of disturbed areas The contractor will be liable to, upon completion, rehabilitate all those areas of the site used for spoiling, mixing of concrete or any other disturbances caused to the site by the contractor by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent				
	EXCAVATIONS, ETC				
	Excavation in earth not exceeding 2m deep				
1	Trenches	m3	346		
	Carried to Collection			R	

	Extra over trench and hole excavations in earth for excavation in				
2	Soft rock	m3	35		
3	Hard rock	m3	17		
	Risk of collapse of excavations				
4	Sides of trench and hole excavations not exceeding 1,5m deep	m2	1 124		
	Extra over all excavations for carting away				
5	Surplus material from excavations and/or stockpiles on site to a dumping site to be located by the contractor	m3	17		
	Keeping excavations free of water				
6	Keeping excavations free of all water other than subterranean water		Item		
	FILLING, ETC				
	Selected earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage approximately 100m from the perimeter of the excavations or stock piles, compacted to 95% Mod. AASHTO density				
7	Under floors, steps, pavings, etc	m3	206		
8	Backfilling to trenches, holes, etc	m3	123		
	Filling of natural gravel material (G5) supplied by the contractor, compacted to 95% Mod AASHTO density				
9	Under floors, steps, pavings etc.	m3	407		
	Filling of coarse river sand supplied by the contractor, consolidated				
10	Under floors etc	m3	94		
	WEED KILLERS, INSECTICIDES, ETC				
	Carried to Collection			R	

	Soil insecticide in accordance with SANS 5859				
11	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	1 884		
12	To bottoms and sides of trenches etc	m2	1 701		
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
13	"Modified AASHTO Density" test	No	57		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa/19mm concrete				
14	Strip footings	m3	144		
	TEST CUBES				
	Concrete strength test cubes				
15	Making and testing a set of three 150 x 150 x 150mm concrete strength test cubes	Sets	14		
	MOVEMENT JOINTS ETC				
	Expansion joints with 10mm bitumen impregnated softboard between vertical concrete surfaces, including necessary formwork				
16	Not exceeding 300mm high through foundations	m	70		
	REINFORCEMENT				
	Mild steel reinforcement to structural concrete work				
17	8mm Diameter bars	t	0.60		
	High tensile steel reinforcement to structural concrete work				
18	12mm Diameter bars	t	4.17		
	Carried to Collection			R	

	BRICKWORK IN FOUNDATIONS				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
19	One brick walls	m2	659		
	BRICKWORK SUNDRIES				
	Joint forming material in movement joints				
20	10mm Bitumen impregnated softboard built in vertically between brick skins	m2	47		
	2,5mm Brickwork reinforcement				
21	150mm Wide reinforcement built in horizontally	m	4 738		
	FACE BRICKWORK				
	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
22	Extra over brickwork for face brickwork	m2	293		
	"Corobrik Middelwit Fynbos Geel" brick-on-edge header course copings, sills, etc pointed with recessed joints on all exposed faces				
23	220mm Wide copings on top of one brick wall	m	210		
	WATERSTOPS, SEALING STRIPS, JOINT SEALANTS, ETC				
	Two part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc				
24	10 x 20mm In expansion joints in walls including raking out expansion joint filler as necessary	m	10		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 1

FOUNDATIONS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	198		
	199		
	200		
	201		
	202		
Carried Forward to Summary of Section No. 4		R	

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO.2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels not exceeding 20m2

All reinforced concrete is to be compacted with a mechanical vibrator

Cost of tests

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

Formwork

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

Carried to Collection R

	The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks" Fabric reinforcement Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps				
	REINFORCED CONCRETE CAST ON/IN FORMWORK				
	25MPa/19mm concrete				
1	Surface beds cast in panels on waterproofing	m3	139		
2	Walkway surface beds cast in panels on waterproofing	m3	31		
	TEST CUBES				
	Concrete strength test cubes				
3	Making and testing a set of three 150 x 150 x 150mm concrete strength test cubes	Sets	14		
	CONCRETE SUNDRIES				
	Carried to Collection			R	

	Finishing top surfaces of concrete smooth with a wood float				
4	Surface beds, etc	m2	1 544		
5	Walkway surface beds, etc to falls	m2	340		
	MOVEMENT JOINTS ETC				
	Two layers of 375 micron dampproof course in slip joints between horizontal concrete and brick surfaces including cement mortar bed				
	Expansion joints with 10mm bitumen impregnated softboard between vertical concrete and brick surfaces				
6	Not exceeding 300mm high to edges of surface beds	m	1 256		
	Saw-cut joints				
7	5 x 35mm Saw-cut joints in top of concrete	m	460		
	Vertical construction joints through concrete including thick cement slurry to one face				
8	Surface beds not exceeding 300mm high	m	10		
	REINFORCEMENT				
	Mesh reinforcement				
9	Type 193 fabric reinforcement in concrete surface beds, etc	m2	1 544		
10	Type 193 fabric reinforcement in concrete walkway surface beds, etc	m2	340		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 2

CONCRETE, FORMWORK & REINFORCEMENT

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	204		
	205		
	206		
Carried Forward to Summary of Section No. 4		R	

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 3

MASONRY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes in descriptions

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

Brickwork

Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining work

Face bricks

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

All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws

Pointing

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

Precast concrete paving

Paving is to be laid in accordance with SABS 1200 MJ, SABS 1058 and the Concrete Masonry Association's specifications

Carried to Collection R

	Paving is to be laid to herringbone pattern on and including 25mm (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere) Clean sand is to be swept into joints between roadstones				
	SUPERSTRUCTURE				
	Brickwork of NFP bricks in class II mortar				
1	Piers	m3	21		
2	One brick walls	m2	2 171		
3	One brick walls in firewalls	m2	336		
	BRICKWORK SUNDRIES				
	Joint forming material in movement joints				
4	10mm Bitumen impregnated fibre board built in vertically between brick skins	m2	225		
	Steel bar reinforcement				
5	6mm Diameter mild steel bars built in horizontally	t	1.87		
	2,5mm Brickwork reinforcement				
6	150mm Wide reinforcement built in horizontally	m	4 378		
	Turning pieces to lintels etc				
7	110mm Wide turning pieces	m	267		
8	230mm Wide turning pieces	m	210		
	Galvanised wire ties etc				
9	4mm Diameter roof tie 2m girth bent double with one end built into brickwork and other end fixed to timber	No	650		
	FACE BRICKWORK				
	Carried to Collection			R	

	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
10	Extra over brickwork for face brickwork	m2	2 482		
11	Extra over brickwork for internal face brickwork	m2	660		
12	Extra over brickwork to piers and pilasters for face brickwork	m2	255		
13	Extra over brickwork for brick-on-edge header course lintels pointed on all exposed faces	m	477		
14	Half brick wall in beamfilling	m2	37		
	"Corobrik Middelwit Fynbos Geel" brick-on-edge header course copings, sills, etc pointed with recessed joints on all exposed faces				
15	110mm Wide sills set level and slightly protecting	m	267		
16	220mm Wide sills set sloping and slightly protecting	m	267		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 3

MASONRY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	208		
	209		
	210		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 4				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m2	280		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
2	Under surface beds	m2	1 884		
	WATERSTOPS, SEALING STRIPS, JOINT SEALANTS, ETC				
	Silicone sealing compound including backing cord, bond breaker, primer, etc				
3	5 x 30mm In saw-cut joints in floors	m	460		
	Carried to Collection			R	

	Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc				
4	10 x 20mm In expansion joints in floors, including raking out expansion joint filler as necessary	m	10		
5	10 x 20mm In expansion joints in walls, including raking out expansion joint filler as necessary	m	52		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 4

WATERPROOFING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	212		
	213		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 5				
	ROOF COVERINGS ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Profiled metal sheeting and accessories				
	Roof sheets shall be fixed to every purlin by means of patented KL700 clips and Class 3 fasteners. Flashings shall be fixed by way of patented S10 brackets (sliding brackets where roof sheets are 30m or longer), in strict accordance with the manufacturer's specifications by an approved sub-contractor. A written and approved five-year guarantee of water-tightness shall be issued after approval of the roofs by the manufacturer				
	Prices to include for all cutting and waste and relevant fixing material, unless otherwise described				
	Sheet metal flashings shall have minimum 100mm laps and linings to valleys, etc minimum 225mm laps				
	All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0,5mm "Global Roofing Solutions Klip-Tite" Z275 (Light Industrial) galvanised troughed sheet steel complying with ISQ 550 (3T) (A653) with a "Chromadek" finish to one side and standard backing coat, Pebble Grey to other, fixed to timber purlins or rails				
1	Roof covering with pitch not exceeding 25 degrees	m2	2 639		
	Carried to Collection			R	

	0,58mm Z275 spelter galvanised steel sheet accessories iron with "Chromadek" finish to one side with a Pebble Grey backing coat to preceding roof covering				
2	Standard type FK7 counter flashing, including fixing and sealing top edge of flashing against bottom jamb of louvre (louvre elsewhere)	m	48		
3	Standard type FK3 ridge or hip flashing	m	340		
4	Standard type FK8 headwall flashing	m	48		
5	Standard type FK13 barge or gable flashing	m	50		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 5

ROOF COVERINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	215		
	216		
Carried Forward to Summary of Section No. 4		R	

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 6

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Fixing

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

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Decorative thermosetting plastic laminate covering

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Decorative laminate finishes shall be glued under pressure

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be red or medium brown meranti, even in grain and colour

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

Carried to Collection R

PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC

Supplementary preambles for plate nailed timber roof construction

The design, manufacturing and installation of the complete prefabricated timber roof construction to be executed by an approved firm of specialists, under a written guarantee, which shall lodge the design with the principal agent for approval before the work commence

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

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

Bolts shall be in accordance with BS 4190 or SANS 135

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

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

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

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

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

Carried to Collection R

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

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

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

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

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

Tendered rates to include for the design and manufacturing of the complete timber roof construction (including all wall plates, purlins, battens, bracing, connections, etc as may be required), transport, loading and unloading, storing under cover and protecting from the weather, hoisting and fixing in position all elements and necessary supervision

Unless otherwise described, the following specifications will apply:

All trusses to be with a 20° pitch at approximately 1100mm centres. Trusses shall be designed for a live load of 0.50 kN/m2 and the dead load consists of 0.5mm thick "Klip-Tite" galvanised troughed sheet steel roof covering on 50 x 76mm purlins at maximum 1200mm centres, 6mm nutec-cement nailed-up ceilings on 38 x 38mm brandering at 400mm centres and 100mm thick fibre insulation blanket laid on top of ceilings

Carried to Collection R

	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	<u>Allow for the preparation and submission of the following documents in respect of all buildings</u>				
1	Detailed shop drawings indicating truss sizes, truss positions, bracings, details, etc. to be submitted for approval prior the commencement of any fabrication		Item		
2	Design certificate indicating the licensed programme used, SANS specifications adhered to, general procedures and loadings adopted, sizes and grading of timber components, details, etc.		Item		
3	Erection guarantee certificate after the whole completed roof truss structure have been inspected, all defective work have been taken out and made good, etc. to the full satisfaction of the Principal Agent		Item		
	<u>The following in pre-fabricated roof trusses manufactured from "CCA Tanalith" pre-treated wrought softwood</u>				
4	Roof construction to double pitched roof with two hipped ends for 3-classroom block (approximately 308m2 roof covering area measured on slope) supplied and erected complete in position including all necessary bracing, gangboarding, purlins, splayed eaves purlins, wall plates, etc	No	2		
5	Roof construction to double pitched roof with two hipped ends for 4-classroom block (approximately 404m2 roof covering area measured on slope) supplied and erected complete in position including all necessary bracing, gangboarding, purlins, splayed eaves purlins, wall plates, etc	No	5		
	<u>Sundries</u>				
6	Two coats carbolineum on sawn timbers	m2	65		
	<u>EAVES, VERGES, ETC</u>				
	Carried to Collection			R	

	High density plain fibre-cement fascias and barge boards				
7	10 x 225mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	609		
	SKIRTINGS				
	Wrought meranti				
8	19 x 76mm Skirting including 19mm quarter round nailed	m	782		
	DOORS, ETC				
	Wrought meranti doors, hung to steel frames (Exposure Class 1)				
9	40mm Framed batten door 914 x 2032mm high of 40 x 150mm top rail and stiles, 18 x 150mm middle ledge and braces and 40 x 220mm bottom rail, filled in with 18mm V-jointed one side boarding and covered on other side with 4mm plywood with veneer to match door, let into and including rebates all round	No	26		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 6

CARPENTRY AND JOINERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	218		
	219		
	220		
	221		
	222		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 7				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted", these bolts have been given elsewhere				
	Ceilings				
	Unless otherwise described, ceilings shall be deemed to be horizontal				
	CEILING TIMBERS, BEADS, INSULATION, ETC				
	Wrought meranti				
1	19 x 45mm External cornices nailed	m	455		
	Insulation				
2	100mm glass fibre insulation blanket to manufacturer's specification, laid on ceiling	m2	1 544		
	NAILED-UP CEILINGS				
	Carried to Collection			R	

	6mm Fibre-cement plain ceiling boards with H-profile galvanised steel jointing strips				
3	Ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	1 544		
4	External ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	340		
5	Extra over ceiling for opening for 610 x 610mm trap door of 50 x 76mm wrought softwood rebated framing with one cross brander covered with ceiling board and fitted flush in opening, including necessary trimmers around	No	26		
	Gypsum plasterboard cornices				
6	76mm Coved cornices plugged	m	806		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 7

CEILINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	224		
	225		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Preparation of door frames				
	Descriptions for flush bolts, door closers, floor springs, etc. shall be deemed to include all necessary preparations to door frames to accommodate same				
	"En-suite" locks				
	All "en-suite" locks shall be ordered to operate in a dedicated master keyed and/or grand master keyed lock system as described				
	Proprietary items				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items				
	Prices are to be based on the specific products/articles specified				
	CATCHES, CABIN HOOKS, ETC				
	In accordance with "Halstead" catalogue				
1	No. 166 SC cabin hook and eye, 100mm long, including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	26		
	LOCKS				
	Carried to Collection			R	

	Keys				
	Unless otherwise described locks shall have two keys each				
	Manufactured by "Assa Abloy"				
2	UN33403X000200 brass padlock	No	26		
3	2261-76SS 4-lever upright mortice lock	No	26		
	HANDLES				
	Manufactured by "Assa Abloy"				
4	"Waterbok AL6W45-24AS" lever handle on 45 x 178mm back plate for lever lock	Pairs	26		
	LETTERS, NAME PLATES, ETC				
	Manufactured by "Assa Abloy"				
5	150 x 150mm SS5066E-06SSE06 stainless steel plate with a fire extinguisher symbol	No	26		
6	150 x 150mm SS5066E-06SSE05 stainless steel plate with a fire hose reel symbol	No	7		
7	150 x 150mm SS5066E-06SSE08 stainless steel plate with a red or green arrow symbol	No	33		
	STEEL LOCKERS, ETC				
	"Greenfield" steel lockers with standard baked enamel finish				
8	"G25" double door steel cupboard, 760 x 610 x 1700mm high with four shelves	No	52		
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC				
	Manufactured by "Vitrex"				
9	Model 2300 pinning boards (code 2309) 2400 x 1200mm high, plugged	No	52		
	Carried to Collection			R	

10	Code 1017 Enamelled green folding type wall mounted writing board 4800 x 900mm high overall, consisting of one fixed panel 2400 x 900mm high, two fixed panels each 1200 x 900mm high and two swing leaves each 1200 x 900mm high complete with chalk rail, etc, plugged	No	26		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 8

IRONMONGERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	227		
	228		
	229		
Carried Forward to Summary of Section No. 4		R	

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 9

METALWORK

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

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

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Preparation of metal surfaces

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer. All scratches, chips or blemishes to be made good on site after erection

Carried to Collection R

Door frames

Unless otherwise described, all frames shall be single rebated and suitable for 40mm thick doors, factory fitted with three washered butt hinges for each door and factory primed complying with SANS Specification 909. Striking plates to be of the chromium plated type

Steel windows

Burglar proofing to be type B20 burglar bars, unless otherwise described. All furniture to be chromium plated

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria

Glazing shall comply with SAGGA regulations. Glass shall be type as shown on the window schedules and/or drawings appended to these bills of quantities and/or as described in the headings to window descriptions. Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings

Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed

For purpose made windows and doors, refer to drawings annexed to these bills of quantities

The following certificates shall be provided prior to commencement of site work:

1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer supplying the architectural aluminium product

2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

Carried to Collection R

	3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process				
	4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked				
	5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years				
	Sealing of all abutments All windows, frames, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicone sealant along all joints				
	COMBINATION DOORS AND FRAMES				
	Standard "NTY" or similar approved purpose made 1,2mm thick double rebated door frames suitable for one-brick walls				
1	"NTY 914 Classroom Combo" combination door frame with security gate (both opening out), consisting of frame for door 914 x 2032mm high fitted with three parliament hinges with and including single security gate and frame, 914 x 2032mm high overall of 25 x 25 2mm hollow section frame mitred and welded at angles and two 25 x 25 x 2mm hollow section horizontal middle rails, gate filled in with 12 x 12mm square solid section vertical rails at 100mm centres and fitted with locking bolt suitable for padlock (padlock elsewhere), frame formed of 15 x 15 x 2mm hollow section stiles and top rail mitred and welded at angles and fitted with three hinges welded to gate and frame, frame factory welded at maximum 250mm centre to door frame	No	26		
	STEEL WINDOWS, DOORS, ETC				
	Carried to Collection			R	

	Standard horisontal pivot type school windows with 12 x 12mm solid burglar bars to all sashes to line up with vertical and horisontal section of window				
2	Composite window type 5/8, size 1143 x 1272mm high	No	234		
	STEEL LOUVRES, ETC				
	Purpose made louvres				
3	Epoxy powder coated (colour to match roof sheeting) triangular shaped (on elevation) residential section louvred ventilators 3620mm wide (at horizontal bottom) x 660mm high overall, filled in with type LC fixed horizontal louvre blades fixed to surround and covered at back with No 256 galvanised mesh mosquito gauze, fixed with and including 3 x 20mm steel flat section cover strips screwed on	No	14		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 9

METALWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	231		
	232		
	233		
	234		
Carried Forward to Summary of Section No. 4		R	

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 10

PLASTERING

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Granolithic

The method to be used shall be either the monolithic method or the bonded method

For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic

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

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

Carried to Collection R

	Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be throughly 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 Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying Coloured granolithic shall be tinted with an approved colouring pigment mixed into the granolithic in the proportion of 1kg pigment per pocket of cement, of uniform appearance and consistent colour throughout				
	SCREEDS				
	Screeds wood floated for tiles, on concrete				
1	30mm Thick to floors and landings	m2	1 544		
2	30mm Thick to floors and landings in thresholds	m2	3		
	GRANOLITHIC				
	Untinted wood floated granolithic, on concrete				
3	Average 30mm thick to walkway	m2	340		
	Untinted steel trowelled granolithic, on concrete				
4	30mm Thick to floors and landings in thresholds	m2	3		
	Carried to Collection			R	

	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
5	On walls	m2	1 338		
6	On narrow widths	m2	95		
	Cement plaster wood floated for tiles, on brickwork				
	CORNER PROTECTORS, DIVIDING STRIPS, ETC				
7	30 x 3mm Flat section brass dividing strips between different floor finishes	m	24		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 10

PLASTERING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	236		
	237		
	238		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 11				
	TILING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Patterns				
	Unless otherwise described, tiles shall be laid with continuous joints in both directions				
	Fixing				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	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				
	FLOOR TILING				
	Ceramic floor tiles (PC amount of R140 per m2 excluding VAT) fixed with adhesive to screed (screed elsewhere) and flush pointed with dark grey tinted waterproof jointing compound				
1	On floors and landings	m2	1 544		
2	On floors and landings in openings	m2	3		
	Carried Forward to Summary of Section No. 4			R	

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 12

PLUMBING AND DRAINAGE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Wire gratings

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

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

Stainless steel for economy basins, domestic sinks and worktops 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

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

Waste unions

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

Carried to Collection R

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

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

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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 "?" type. Capillary solder fittings shall comply with ISO 2016

Carried to Collection R

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

Fixing of pipes

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

Paper wrapping to pipes

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

Disinfection of water pipework

Water pipework is to be disinfected at completion

Petrolatum anti-corrosion tape

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with ?% overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Carried to Collection R

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Laying, backfilling, bedding, etc of pipes

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

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

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of ?% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

Carried to Collection R

	As-built drawings Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	Regulations All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work and a Certificate of Compliance must be issued after completion of the installation				
	RAINWATER DISPOSAL				
	0,6mm Galvanised sheet steel seamless gutters and rainwater pipes with powder coated finish on outside				
1	100 x 100mm Roof gutters with beaded front edge	m	609		
2	Extra over gutter for corner	No	28		
3	Extra over gutter for outlet for 100mm diameter pipe	No	80		
4	100mm Diameter rainwater pipes	m	272		
5	Extra over rainwater pipe for shoe	No	80		
6	Extra over rainwater pipe for eaves or plinth offset	No	80		
	FIRE APPLIANCES ETC				
	Manufactured by "Safequip"				
7	9 Kg "Blue Crane" dry chemical powder fire extinguisher	No	26		
8	Fire hose reel complete with 30m plastic hose, chromium plated stopcock, shut-off nozzle and wall bracket	No	7		
	WATER SUPPLIES TO FIRE APPLIANCES				
	Carried to Collection			R	

	Class 16 PVC-U pressure pipes with solvent welded joints				
9	25mm Pipes laid in and including trenches under floors, aprons, etc	m	13		
	Extra over Class 16 PVC-U pressure pipes for fittings with solvent welded joints				
10	50mm Elbow	No	7		
11	50mm Reducer	No	7		
	Galvanised medium steel pipes with screwed and socketed joints				
12	25mm Pipes	m	10		
	Extra over galvanised medium steel pipes with screwed and socketed joints for steel fittings				
13	25mm Fittings	No	14		
	Testing				
14	Testing fire water pipe system		Item		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 12

PLUMBING AND DRAINAGE

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	241		
	242		
	243		
	244		
	245		
	246		
Carried Forward to Summary of Section No. 4		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 13				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6.38mm Normal strength (NS) clear laminated safety glass				
1	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	211		
	6.38mm Normal strength (NS) obscure tinted laminated safety glass				
2	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	128		
	Carried Forward to Summary of Section No. 4			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 14				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Paint specifications				
	All painting shall be done in accordance with "Plascon" specifications unless otherwise described				
	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				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
1	Walls	m2	1 433		
	ON FIBRE-CEMENT BOARD SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
2	Ceilings and cornices, including priming metal jointing strips and nailheads	m2	1 544		
	Carried to Collection			R	

3	External ceilings and cornices, including priming metal jointing strips and nailheads	m2	340		
4	Fascias and barge boards, including priming metal jointing strips	m2	280		
	ON METAL SURFACES				
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200), prime with "Plascon Metalcare Galvanised Iron Primer (GIP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
5	Door frames	m2	47		
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200)", prime with "Plascon Metalcare Galvanised Iron Primer" (UC501) and apply two finishing coats "Plascon Super Universal Enamel" paint				
6	Windows with burglar bars	m2	678		
7	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	96		
	Clean with "Plascon Aquasolv Degreaser (GR1), prime with "Plascon Multi-surface Primer (WUP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
8	Galvanised mild steel pipes not exceeding 300mm girth (Provisional)	m	10		
	ON WOOD SURFACES				
	Sand down to a smooth finish, seal knots with "Plascon Woodcare Knot Seal (PK2)", prime with "Plascon Wood Primer (UC2)", and apply two finishing coats "Plascon Super Universal Enamel" paint				
9	Roof timbers at eaves and verges	m2	277		
	Carried to Collection			R	

	Sand down to a smooth finish, stop with "Polycell Woodfiller", stain with "Plascon Woodcare Stain (W-range)" (colour meranti), apply one coat "Plascon Woodcare Ultra Varnish (X44)" thinned with 1:3 mineral turpentine (AZH1), and two finishing coats "Plascon Woodcare Ultra (X44)" suede varnish				
10	Skirtings, rails, etc not exceeding 300 mm girth	m	782		
	Sand down to a smooth finish, stop with "Polycell Woodfiller", apply one coat raw linseed oil thinned with 1:3 mineral turpentine (AZH1), and two finishing coats "Plascon Woodcare Waterbased Premium Exterior Range (WSP23)" clear suede varnish				
11	External cornices, rails, etc not exceeding 300 mm girth	m	455		
	Sand down to a smooth finish, stain with "Plascon Woodcare Stain W-Range" (colour meranti) and apply three coats "Plascon Woodcare Wood Preservative (FPR 1)"				
12	Doors	m2	102		
	Carried to Collection			R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

Bill No. 14

PAINTWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	249		
	250		
	251		
Carried Forward to Summary of Section No. 4		R	

Section No. 4

5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)

SECTION SUMMARY - 5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (

Bill No		Page No		Amount
1	FOUNDATIONS	203		
2	CONCRETE, FORMWORK & REINFORCEMENT	207		
3	MASONRY	211		
4	WATERPROOFING	214		
5	ROOF COVERINGS, ETC	217		
6	CARPENTRY AND JOINERY	223		
7	CEILINGS, ETC	226		
8	IRONMONGERY	230		
9	METALWORK	235		
10	PLASTERING	239		
11	TILING	240		
12	PLUMBING AND DRAINAGE	247		
13	GLAZING	248		
14	PAINTWORK	252		
	Carried to Final Summary		R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

2 X 8-SEATER (INCLUDING 2 DISABLED FACILITIES) AND 2 URINALS ENVIROLOO ABLUTIONS

BILL NO.1

FOUNDATIONS

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Nature of ground

A soils investigation has been carried out on the site and the report is available from the principal agent. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc, the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"

“Soft rock” shall mean hard material, the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness

“Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones, pebbles or pieces of concrete not exceeding 0,03m3 in volume

Carried to Collection R

Subterranean water

No subterranean water is expected

The water table is expected to vary between approximately 3m and 10m below natural ground level. The removal of subterranean water is given separately

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

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

Samples of potential fill material obtained from excavations, trench excavations, etc are to be submitted to and approved by the engineer prior the re-use thereof as "filling"

All filling obtained from a commercial source should comply to minimum G5 standard

Should any material be found unsuitable and the use thereof be disapproved, such material shall be disposed and approved material must be sourced and imported from an approved commercial source

Filling in general shall be compacted to the prescribed percentage Mod AASHTO density

Carried to Collection R

	Cleaning-up of disturbed areas The contractor will be liable to, upon completion, rehabilitate all those areas of the site used for spoiling, mixing of concrete or any other disturbances caused to the site by the contractor by grading the area to follow the adjacent ground contours and afterwards compacted to 80% Mod AASHTO density, all to the full satisfaction of the principal agent				
	EXCAVATIONS, ETC				
	Excavation in earth not exceeding 2m deep				
1	Trenches	m3	48		
2	Pits	m3	76		
	Extra over trench and hole excavations in earth for excavation in				
3	Soft rock	m3	12		
4	Hard rock	m3	6		
	Risk of collapse of excavations				
5	Sides of trench and hole excavations not exceeding 1,5m deep	m2	146		
6	Sides of pit excavations not exceeding 1,5m deep	m2	108		
	Extra over all excavations for carting away				
7	Surplus material from excavations and/or stockpiles on site to a dumping site to be located by the contractor	m3	86		
	Keeping excavations free of water				
8	Keeping excavations free of all water other than subterranean water		Item		
	FILLING, ETC				
	Carried to Collection			R	

	Selected earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage approximately 100m from the perimeter of the excavations or stock piles, compacted to 95% Mod. AASHTO density				
9	Under floors, steps, pavings, etc	m3	18		
10	Backfilling to trenches, holes, etc	m3	20		
	Filling of coarse river sand supplied by the contractor, consolidated				
11	Under floors etc	m3	4		
12	Under pit floors etc	m3	2		
	WEED KILLERS, INSECTICIDES, ETC				
	Soil insecticide in accordance with SANS 5859				
13	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	80		
14	To bottoms and sides of trenches etc	m2	206		
15	To bottoms and sides of pits etc	m2	162		
	TESTS				
	Prescribed tests to determine degree of compaction or other properties of ground or filling				
16	"Modified AASHTO Density" test	No	2		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa/19mm concrete				
17	Strip footings	m3	16		
18	Pit surface beds	m3	4		
19	Extra over pit surface beds for thickening size 80mm deep, 545mm top and tapering to 460mm at bottom including all excavation to 80mm, backfilling, etc	m	46		
	Carried to Collection			R	

	TEST CUBES				
	Concrete strength test cubes				
20	Making and testing a set of three 150 x 150 x 150mm concrete strength test cubes	Sets	2		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
21	Pit surface beds	m2	50		
	REINFORCEMENT				
	Mild steel reinforcement to structural concrete work				
22	8mm Diameter bars	t	0.06		
	High tensile steel reinforcement to structural concrete work				
23	12mm Diameter bars	t	0.32		
	Fabric reinforcement				
24	Type 193 fabric reinforcement in pit surface beds etc	m2	50		
	BRICKWORK IN FOUNDATIONS				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
25	Half brick walls	m2	20		
26	One brick walls	m2	60		
27	One brick pit walls	m2	110		
28	Horizontal projecting bands band one course high and 110mm projection	m	88		
	BRICKWORK SUNDRIES				
	2,5mm Brickwork reinforcement				
29	75mm Wide reinforcement built in horizontally	m	140		
	Carried to Collection			R	

30	150mm Wide reinforcement built in horizontally	m	406		
31	150mm Wide reinforcement built in horizontally in pit walls	m	712		
	FACE BRICKWORK				
	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
32	Extra over brickwork for face brickwork	m2	36		
	INTERNAL PLASTER				
	Cement plaster wood floated, on brickwork				
33	On pit walls	m2	120		
	PAINTWORK ON INTERNAL FLOATED PLASTER SURFACES				
	Two coats approved black epoxy paint				
34	On pit walls	m2	120		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 1

FOUNDATIONS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	254		
	255		
	256		
	257		
	258		
	259		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

BILL NO.2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Concrete general

Surface beds cast in panels shall be cast in panels not exceeding 20m2

All reinforced concrete is to be compacted with a mechanical vibrator

Cost of tests

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

Formwork

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

Carried to Collection R

	The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks" <u>Fabric reinforcement</u> Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps				
	<u>REINFORCED CONCRETE CAST ON/IN FORMWORK</u>				
	<u>25MPa/19mm concrete</u>				
1	Surface beds cast in panels on waterproofing	m3	8		
2	Pit slabs	m3	4		
	<u>TEST CUBES</u>				
	<u>Concrete strength test cubes</u>				
3	Making and testing a set of three 150 x 150 x 150mm concrete strength test cubes	Sets	2		
	<u>CONCRETE SUNDRIES</u>				
	Carried to Collection			R	

	Finishing top surfaces of concrete smooth with a wood float				
4	Surface beds, etc	m2	80		
5	Pit slabs	m2	50		
	ROUGH FORMWORK (DEGREE OF ACCURACY II)				
	Rough formwork to sides				
6	Edges of pit slabs not exceeding 300mm high or wide	m	28		
	PERMANENT FORMWORK				
	Permanent formwork left in place formed of 0,6mm corrugated sheeting supported by carbolineum treated gumpoles to the satisfaction of the Principal Agent to soffits				
7	Slabs for pit propped up not exceeding 1,5m high	m2	50		
	Rough formwork to form				
8	500mm Diameter opening through 85mm thick slab	No	16		
	MOVEMENT JOINTS ETC				
	Expansion joints with 10mm bitumen impregnated softboard between vertical concrete and brick surfaces				
9	Not exceeding 300mm high to edges of surface beds	m	188		
	Saw-cut joints				
10	5 x 35mm Saw-cut joints in top of concrete	m	16		
	REINFORCEMENT				
	Mesh reinforcement				
11	Type 193 fabric reinforcement in concrete surface beds, etc	m2	80		
12	Type 395 fabric reinforcement in concrete pit slabs, etc	m2	50		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 2

CONCRETE, FORMWORK & REINFORCEMENT

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	261		
	262		
	263		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

BILL NO. 3

MASONRY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Sizes in descriptions

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

Brickwork

Brickwork shall be carried up in a uniform manner, no part being raised more than 1.2m above adjoining work

Face bricks

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

All cutting to face bricks must be done by cutting saw and prices to include for the use of mechanical cutting saws

Pointing

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

Precast concrete paving

Paving is to be laid in accordance with SABS 1200 MJ, SABS 1058 and the Concrete Masonry Association's specifications

Carried to Collection R

	Paving is to be laid to herringbone pattern on and including 25mm (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere) Clean sand is to be swept into joints between roadstones				
	SUPERSTRUCTURE				
	Brickwork of NFP bricks in class II mortar				
1	Half brick walls	m2	42		
2	One brick walls	m2	268		
	BRICKWORK SUNDRIES				
	Steel bar reinforcement				
3	6mm Diameter mild steel bars built in horizontally	t	0.10		
	2,5mm Brickwork reinforcement				
4	75mm Wide reinforcement built in horizontally	m	50		
5	150mm Wide reinforcement built in horizontally	m	732		
	Prestressed fabricated concrete lintels including necessary temporary supports				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	38		
	Turning pieces to lintels etc				
7	110mm Wide turning pieces	m	10		
8	230mm Wide turning pieces	m	10		
	Galvanised wire ties etc				
9	4mm Diameter roof tie 2m girth bent double with one end built into brickwork and other end fixed to timber	No	72		
	FACE BRICKWORK				
	Carried to Collection			R	

	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
10	Extra over brickwork for face brickwork	m2	208		
11	Extra over brickwork for brick-on-edge header course lintels pointed on all exposed faces	m	20		
12	Half brick wall in beamfilling	m2	12		
13	Fair cutting and fitting around pipe not exceeding 100mm diameter	No	16		
	"Corobrik Middelwit Fynbos Geel" brick-on-edge header course copings, sills, etc pointed with recessed joints on all exposed faces				
14	220mm Copings on top of one brick walls	m	16		
15	220mm Wide sills set sloping and slightly protecting	m	10		
	FIBRE-CEMENT WINDOW SILLS				
	Natural grey sills in single lengths bedded in class II mortar including metal fixing lugs etc				
16	15 x 150mm Wide sills set level and slightly projecting	m	10		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 3

MASONRY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	265		
	266		
	267		
Carried Forward to Summary of Section No. 5		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 4				
	WATERPROOFING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMP-PROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m2	28		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
2	Under surface beds	m2	66		
	WATERSTOPS, SEALING STRIPS, JOINT SEALANTS, ETC				
	Silicone sealing compound including backing cord, bond breaker, primer, etc				
3	5 x 30mm In saw-cut joints in floors	m	16		
	Carried Forward to Summary of Section No. 5			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 5				
	ROOF COVERINGS ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Profiled metal sheeting and accessories				
	Roof sheets shall be fixed to every purlin by means of patented KL700 clips and Class 3 fasteners. Flashings shall be fixed by way of patented S10 brackets (sliding brackets where roof sheets are 30m or longer), in strict accordance with the manufacturer's specifications by an approved sub-contractor. A written and approved five-year guarantee of water-tightness shall be issued after approval of the roofs by the manufacturer				
	Prices to include for all cutting and waste and relevant fixing material, unless otherwise described				
	Sheet metal flashings shall have minimum 100mm laps and linings to valleys, etc minimum 225mm laps				
	All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0,5mm "Global Roofing Solutions Klip-Tite" Z275 (Light Industrial) galvanised troughed sheet steel complying with ISQ 550 (3T) (A653) with a "Chromadek" finish to one side and standard backing coat, Pebble Grey to other, fixed to timber purlins or rails				
1	Roof covering with pitch not exceeding 25 degrees	m2	166		
	Carried to Collection			R	

	0,58mm Z275 spelter galvanised steel sheet accessories iron with "Chromadek" finish to one side with a Pebble Grey backing coat to preceding roof covering				
2	Standard type FK7 counter flashing, including fixing and sealing top edge of flashing against bottom jamb of louvre (louvre elsewhere)	m	6		
3	Standard type FK3 ridge or hip flashing	m	36		
4	Standard type FK8 headwall flashing	m	6		
5	Standard type FK13 barge or gable flashing	m	8		
	Sundries				
6	Leave or form 320mm diameter hole through roof covering for ventilation pipe of "Enviro Loo" toilet unit ("Enviro Loo" toilet unit elsewhere), including flashing all round and leaving watertight	No	16		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 5

ROOF COVERINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	270		
	271		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

BILL NO. 6

CARPENTRY AND JOINERY

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Fixing

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

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted" the bolts have been given elsewhere

Decorative thermosetting plastic laminate covering

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Decorative laminate finishes shall be glued under pressure

Hardwoods

All hardwoods shall be specially selected, well seasoned, free from sapwood and kiln dried. Meranti shall be red or medium brown meranti, even in grain and colour

Sealing of all abutments

All cupboards, counter tops, shelves, etc. abutting walls, tiled surfaces, etc. to be sealed watertight with an approved silicon sealant along all joints

Carried to Collection R

PLATE NAILED TIMBER ROOF TRUSS CONSTRUCTION ETC

Supplementary preambles for plate nailed timber roof construction

The design, manufacturing and installation of the complete prefabricated timber roof construction to be executed by an approved firm of specialists, under a written guarantee, which shall lodge the design with the principal agent for approval before the work commence

All trusses shall be fabricated by an approved truss manufacturer who holds a current Certificate of Competence awarded by the Institute for Timber Construction

Trusses should be handled and erected in accordance with SANS 10243

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

Bolts shall be in accordance with BS 4190 or SANS 135

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

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

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

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

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

Carried to Collection R

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

All trusses shall be designed by a registered Professional Engineer in accordance with SANS 0163 ("Design of Timber Structures") and Code 0160 ("Loadings")

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

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

All purlins must be properly nailed to roof trusses and thereafter secured to rafters with 2mm thick galvanised wire ties wrapped around rafter with ends tied together and prices for trusses to include therefor

Tendered rates to include for the design and manufacturing of the complete timber roof construction (including all wall plates, purlins, battens, bracing, connections, etc as may be required), transport, loading and unloading, storing under cover and protecting from the weather, hoisting and fixing in position all elements and necessary supervision

Unless otherwise described, the following specifications will apply:

All trusses to be with a 20° pitch at approximately 1100mm centres. Trusses shall be designed for a live load of 0.50 kN/m2 and the dead load consists of 0.5mm thick "Klip-Tite" galvanised troughed sheet steel roof covering on 50 x 76mm purlins at maximum 1200mm centres, 6mm nutec-cement nailed-up ceilings on 38 x 38mm brandering at 400mm centres and 100mm thick fibre insulation blanket laid on top of ceilings

Carried to Collection R

	Dimensions in descriptions of trusses are nominal and actual measurements are to be obtained from the architect/engineer and/or taken on site before design or fabrication commences				
	Allow for the preparation and submission of the following documents in respect of all buildings				
1	Detailed shop drawings indicating truss sizes, truss positions, bracings, details, etc. to be submitted for approval prior the commencement of any fabrication		Item		
2	Design certificate indicating the licensed programme used, SANS specifications adhered to, general procedures and loadings adopted, sizes and grading of timber components, details, etc.		Item		
3	Erection guarantee certificate after the whole completed roof truss structure have been inspected, all defective work have been taken out and made good, etc. to the full satisfaction of the Principal Agent		Item		
	The following in pre-fabricated roof trusses manufactured from "CCA Tanalith" pre-treated wrought softwood				
4	Roof construction to double pitched roof with two hipped ends for ablution block (approximately 83m2 roof covering area measured on slope) supplied and erected complete in position including all necessary bracing, gangboarding, purlins, splayed eaves purlins, wall plates, etc	No	2		
	Sundries				
5	Two coats carbolineum on sawn timbers	m2	20		
	EAVES, VERGES, ETC				
	High density plain fibre-cement fascias and barge boards				
6	10 x 225mm Fascias and barge boards including galvanised steel H-profile jointing strips	m	76		
	DOORS, ETC				
	Carried to Collection			R	

	Wrought meranti doors, hung to steel frames (Exposure Class 1)				
7	40mm Framed batten door 813 x 2032mm high of 40 x 150mm top rail and stiles, 18 x 150mm middle ledge and braces and 40 x 220mm bottom rail, filled in with 18mm V-jointed one side boarding and covered on other side with 4mm plywood with veneer to match door, let into and including rebates all round	No	4		
8	40mm Framed batten door 914 x 2032mm high of 40 x 150mm top rail and stiles, 18 x 150mm middle ledge and braces and 40 x 220mm bottom rail, filled in with 18mm V-jointed one side boarding and covered on other side with 4mm plywood with veneer to match door, let into and including rebates all round	No	4		
	"Doors Direct" semi-solid flush doors with 3,2mm prime-coated finished white hardboard covering on both sides, hung to steel frames				
9	40mm Door 813 x 2032mm high	No	12		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 6

CARPENTRY AND JOINERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	273		
	274		
	275		
	276		
	277		
Carried Forward to Summary of Section No. 5		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 7				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted", these bolts have been given elsewhere				
	Ceilings				
	Unless otherwise described, ceilings shall be deemed to be horizontal				
	CEILING TIMBERS, BEADS, INSULATION, ETC				
	Wrought meranti				
1	19 x 45mm External cornices nailed	m	30		
	Insulation				
2	100mm glass fibre insulation blanket to manufacturer's specification, laid on ceiling	m2	74		
	NAILED-UP CEILINGS				
	Carried to Collection			R	

	6mm Fibre-cement plain ceiling boards with H-profile galvanised steel jointing strips				
3	Ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	74		
4	External ceilings including 38 x 38mm sawn softwood brandering at 400mm centres	m2	14		
5	Extra over ceiling for opening for 610 x 610mm trap door of 50 x 76mm wrought softwood rebated framing with one cross brander covered with ceiling board and fitted flush in opening, including necessary trimmers around	No	4		
	Gypsum plasterboard cornices				
6	76mm Coved cornices plugged	m	90		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 7

CEILINGS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	279		
	280		
Carried Forward to Summary of Section No. 5		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 8				
	IRONMONGERY				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Preparation of door frames				
	Descriptions for flush bolts, door closers, floor springs, etc. shall be deemed to include all necessary preparations to door frames to accommodate same				
	"En-suite" locks				
	All "en-suite" locks shall be ordered to operate in a dedicated master keyed and/or grand master keyed lock system as described				
	Proprietary items				
	Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items				
	Prices are to be based on the specific products/articles specified				
	HINGES, BOLTS, ETC				
	Manufactured by "Assa Abloy"				
1	AL8294AS mortised WC indicator bolt	Sets	12		
2	37651AS helping hand WC indicator bolt with keep fixed to metal	No	4		
	LOCKS				
	Carried to Collection			R	

	Keys				
	Unless otherwise described locks shall have two keys each				
	Manufactured by "Assa Abloy"				
3	21314-76SS bathroom/WC deadlock	No	12		
4	2261-76SS 4-lever upright mortice lock	No	4		
	HANDLES				
	Manufactured by "Assa Abloy"				
5	"Waterbok AL6W45-24AS" lever handle on 45 x 178mm back plate for lever lock	Pairs	4		
6	AL5D63-06AS pull handle on 152 x 76mm back plate	No	16		
7	AL5D66-06AS push plate	No	16		
	PUSH PLATES AND KICK PLATES				
	1.2mm Thick satin finished stainless steel plates countersunk screwed along edges at not exceeding 200mm centres				
8	800 x 600mm High kick plate	No	8		
	DOOR CLOSERS				
	Manufactured by "Assa Abloy"				
9	7836SC slide channel door closer	No	8		
	LETTERS, NAME PLATES, ETC				
	Manufactured by "Assa Abloy"				
10	150 x 150mm SS5066E-06SSE10 stainless steel plate with a male symbol	No	2		
11	150 x 150mm SS5066E-06SSE11 stainless steel plate with a female symbol	No	2		
12	150 x 150mm SS5066E-06SSE12 stainless steel plate with a male and female symbol	No	4		
	Carried to Collection			R	

13	150 x 150mm SS5066E-06SSE14 stainless steel plate with a paraplegic symbol	No	4		
	SUNDRIES				
	Manufactured by "Assa Abloy"				
14	9002AS door stop, plugged	No	4		
15	AL8722AS hat and coat hook	No	16		
	BATHROOM FITTINGS				
	In accordance with "Buchel" catalogue				
16	19mm Diameter chromium plated towel rail 600mm long including end brackets	No	8		
17	120 x 90 x 205mm High "B-2111 Bobrick Classic" stainless steel soap dispenser, plugged	No	16		
18	150 x 155 x 280mm High "B-4288 Bobrick Contura" stainless steel two-tier lockable toilet roll dispenser, plugged	No	16		
19	265 x 220 x 230mm High "B-261 Bobrick Classic" stainless steel waste receptacle	No	8		
20	275 x 102 x 355mm High "B-262 Bobrick Classic" stainless steel towel dispenser, plugged	No	8		
	Manufactured by "Chairman Industries"				
21	DL2 Stainless steel grab rail, plugged	No	4		
22	SR2 Stainless steel grab rail around cistern, plugged	No	4		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 8

IRONMONGERY

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	282		
	283		
	284		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

BILL NO. 9

METALWORK

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

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

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Preparation of metal surfaces

All surfaces of steelwork cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be painted with approved factory etch primer to a minimum dry film thickness of 30 micrometres before leaving the workshop of the manufacturer. All scratches, chips or blemishes to be made good on site after erection

Carried to Collection R

Door frames

Unless otherwise described, all frames shall be single rebated and suitable for 40mm thick doors, factory fitted with three washered butt hinges for each door and factory primed complying with SANS Specification 909. Striking plates to be of the chromium plated type

Steel windows

Burglar proofing to be type B20 burglar bars, unless otherwise described. All furniture to be chromium plated

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria

Glazing shall comply with SAGGA regulations. Glass shall be type as shown on the window schedules and/or drawings appended to these bills of quantities and/or as described in the headings to window descriptions. Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings

Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed

For purpose made windows and doors, refer to drawings annexed to these bills of quantities

The following certificates shall be provided prior to commencement of site work:

1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer supplying the architectural aluminium product

2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

Carried to Collection R

	3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process				
	4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked				
	5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years				
	Sealing of all abutments All windows, frames, etc. abutting face brick walls, etc. to be sealed watertight with an approved silicone sealant along all joints				
	PRESSED STEEL DOOR FRAMES				
	1,2mm Single rebated frames suitable for half brick walls				
1	Frame for door 813 x 2032mm high	No	12		
2	Frame for door 914 x 2032mm high	No	4		
	1,2mm Single rebated frames suitable for one brick walls				
3	Frame for door 813 x 2032mm high	No	4		
	STEEL WINDOWS, DOORS, ETC				
	Standard residential windows with 12 x 12mm solid horisontal burglar bars at 150mm centres to all sashes				
4	Window type NC5F, 533 x 949mm high	No	20		
	STEEL LOUVRES, ETC				
	Carried to Collection			R	

	Purpose made louvres				
5	Epoxy powder coated (colour to match roof sheeting) triangular shaped (on elevation) residential section louvred ventilators 2040mm wide (at horizontal bottom) x 380mm high overall, filled in with type LC fixed horizontal louvre blades fixed to surround and covered at back with No 256 galvanised mesh mosquito gauze, fixed with and including 3 x 20mm steel flat section cover strips screwed on	No	4		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 9

METALWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	286		
	287		
	288		
	289		
Carried Forward to Summary of Section No. 5		R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

BILL NO. 10

PLASTERING

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Granolithic

The method to be used shall be either the monolithic method or the bonded method

For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic

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

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

Carried to Collection R

	Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be throughly 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 Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying Coloured granolithic shall be tinted with an approved colouring pigment mixed into the granolithic in the proportion of 1kg pigment per pocket of cement, of uniform appearance and consistent colour throughout				
	GRANOLITHIC				
	Untinted wood floated granolithic, on concrete				
1	30mm Thick to floors and landings	m2	4		
2	30mm Thick to floors and landings in thresholds	m2	1		
	Untinted steel trowelled granolithic, on concrete				
3	30mm Thick to floors and landings	m2	80		
4	30mm Thick to floors and landings in thresholds	m2	1		
5	Skirting 75mm high	m	152		
	INTERNAL PLASTER				
	Carried to Collection			R	

	Cement plaster steel trowelled, on brickwork				
6	On walls	m2	318		
7	On narrow widths	m2	8		
	CORNER PROTECTORS, DIVIDING STRIPS, ETC				
8	30 x 3mm Flat section brass dividing strips between different floor finishes	m	6		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 10

PLASTERING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	291		
	292		
	293		
Carried Forward to Summary of Section No. 5		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 11				
	TILING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Patterns				
	Unless otherwise described, tiles shall be laid with continuous joints in both directions				
	Fixing				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	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				
	WALL TILING				
	200 x 200 x 5mm White matt ceramic tiles fixed with adhesive to plaster (plaster elsewhere) and flush jointed with white waterproofed grout				
1	On walls in isolated panels, splashbacks, etc	m2	4		
	Carried Forward to Summary of Section No. 5			R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

BILL NO. 12

PLUMBING AND DRAINAGE

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Wire gratings

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

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

Stainless steel for economy basins, domestic sinks and worktops 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

Sealing of edges

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved silicone

Waste unions

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

Carried to Collection R

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

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

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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 "?" type. Capillary solder fittings shall comply with ISO 2016

Carried to Collection R

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

Fixing of pipes

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

Paper wrapping to pipes

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

Disinfection of water pipework

Water pipework is to be disinfected at completion

Petrolatum anti-corrosion tape

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with ?% overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Carried to Collection R

Timber backing boards

Descriptions for fire extinguishers shall be deemed to include hardwood backboard with exposed eges chamfered and finished with three coats approved satin gloss polyurethane varnish

Laying, backfilling, bedding, etc of pipes

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001

General

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

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

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of ?% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

Carried to Collection R

	As-built drawings Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	Regulations All drainage and sanitary work shall be executed in accordance with the regulations of the Local Authority. Only registered plumbers and drainlayers shall be employed on any plumbing and drainage work and a Certificate of Compliance must be issued after completion of the installation				
	RAINWATER DISPOSAL				
	0,6mm Galvanised sheet steel seamless gutters and rainwater pipes with powder coated finish on outside				
1	100 x 100mm Roof gutters with beaded front edge	m	76		
2	Extra over gutter for corner	No	8		
3	Extra over gutter for outlet for 100mm diameter pipe	No	8		
4	100mm Diameter rainwater pipes	m	28		
5	Extra over rainwater pipe for shoe	No	8		
6	Extra over rainwater pipe for eaves or plinth offset	No	8		
	SANITARY FITTINGS				
	Manufactured by "Vaal Sanitaryware"				
7	610 x 500mm "Tuscany" (code 7017) lavatory basin with one tap hole on "Tuscany" (code 7157) floor mounted pedestal	No	16		
	"ENVIRO LOO" TOILET SYSTEMS				
	Carried to Collection			R	

	Manufactured by "Enviro Loo"				
	Note:				
	Prices for "Enviro Loo" toilet systems to include for the complete supply and installation in strict accordance with the manufacturer's instructions by a company approved by the manufacturer including all necessary inspections by the approved supplier/installer and the issue of a Certificate of Compliance and guarantee upon completion				
8	"Enviro Loo System Model BP1040 Standard" installed strictly in accordance with manufacturers instructions, unit comprising of top unit and two x louvered inlets (PL.1), drying plate (PL.2), two x air inlets (PL.3), toilet pan, seat and lid (PL.4), 3500mm long outlet vent pipe (PL.5), ventilation extraction unit (PL.6) fixed to wall with vent wall bracket (PL.7), 1 bag mounting screws and organic starter, enzyme and toilet cleaner (PL.8) including all necessary interconnector piping between multiple tanks, emergency outlet piping, etc	No	16		
9	"Enviro Loo Urinal Evaporative Tank System" installed strictly in accordance with manufacturers instructions, unit comprising of urinal evaporative tank (PL.1), urinal bowl (PL.5), 3500mm long outlet vent pipe (PL.3), ventilation extraction unit (PL.3) fixed to wall with vent wall bracket (PL.4), 1 bag mounting screws and organic starter, enzyme and toilet cleaner (PL.8) including all necessary piping, etc	No	4		
	WASTE UNIONS ETC				
	Manufactured by "Cobra"				
10	32mm "308" chromium plated unslotted basin waste union	No	16		
	TRAPS ETC				
	Manufactured by "Cobra"				
11	"345/50" chromium plated bottle trap	No	16		
	TAPS, VALVES, ETC				
	Carried to Collection			R	

	Manufactured by "Cobra"				
12	25mm "1001/125-25" brass full way gate valve	No	2		
13	15mm "232/350" angle regulating valve with 350mm long flexible service connection	No	16		
14	15mm "211-15 Star" pillar tap	No	12		
15	15mm "505-21" elbow action pillar tap	No	4		
	SANITARY PLUMBING				
	PVC-U soil and vent pipes				
16	50mm Pipes	m	48		
17	50mm Pipes laid in and including trenches not exceeding 1m deep	m	12		
	Extra over PVC-U soil and vent pipes for fittings				
18	50mm Bend	No	18		
19	50mm Access bend	No	12		
20	50mm Junction	No	8		
21	50mm Access junction	No	4		
22	50mm "GI Two-way" vent valve	No	4		
	Testing				
23	Testing waste pipe system		Item		
	WATER SUPPLIES				
	Class 0 copper pipes with capillary couplings				
24	15mm Pipes	m	20		
25	22mm Pipes	m	80		
	Extra over class 0 copper pipes for capillary fittings				
26	15mm Fittings	No	60		
	Carried to Collection			R	

27	22mm Fittings	No	100		
	Testing				
28	Testing water pipe system		Item		
	Carried to Collection			R	

Section No. 5
2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS
Bill No. 12
PLUMBING AND DRAINAGE
Rantobeng Secondary School

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 12

PLUMBING AND DRAINAGE

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	296		
	297		
	298		
	299		
	300		
	301		
	302		
	303		
Carried Forward to Summary of Section No. 5		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 13				
	GLAZING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Float glass				
	The term "float glass" is used for monolithic annealed glass				
	Laminated glass				
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)				
	GLAZING TO STEEL WITH PUTTY				
	6.38mm Normal strength (NS) obscure tinted laminated safety glass				
1	Panes exceeding 0,1m2 and not exceeding 0,5m2	m2	8		
	MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with bevelled edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
2	Mirror 400 x 600mm high with four screws	No	12		
3	Mirror 400 x 900mm high with four screws	No	4		
	Carried Forward to Summary of Section No. 5			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 14				
	PAINTWORK				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Paint specifications				
	All painting shall be done in accordance with "Plascon" specifications unless otherwise described				
	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				
	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Waterbased Velvaglo" satin enamel paint				
1	Walls	m2	318		
	ON FIBRE-CEMENT BOARD SURFACES				
	Prepare and prime with "Plascon Plaster Primer (UC 56)" and apply two finishing coats "Plascon Super Acrylic Polvin" PVA paint				
2	Ceilings and cornices, including priming metal jointing strips and nailheads	m2	74		
	Carried to Collection			R	

3	Fascias and barge boards, including priming metal jointing strips	m2	36		
4	Sills	m2	2		
	ON METAL SURFACES				
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200), prime with "Plascon Metalcare Galvanised Iron Primer (GIP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
5	Door frames	m2	30		
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200)", prime with "Plascon Metalcare Galvanised Iron Primer" (UC501) and apply two finishing coats "Plascon Super Universal Enamel" paint				
6	Windows with burglar bars	m2	20		
	Clean with "Plascon Aquasolv Degreaser (GR1), prime with "Plascon Multi-surface Primer (WUP1)" and apply two finishing coats "Plascon Super Universal Enamel" paint				
7	Copper pipes not exceeding 300mm girth (Provisional)	m	12		
	ON WOOD SURFACES				
	Sand down to a smooth finish, seal knots with "Plascon Woodcare Knot Seal (PK2)", prime with "Plascon Wood Primer (UC2)", and apply two finishing coats "Plascon Super Universal Enamel" paint				
8	Roof timbers at eaves and verges	m2	34		
	Sand down to a smooth finish, prime with "Plascon Wood Primer (UC2)", and apply two finishing coats "Plascon Waterbased Velvaglo (TSE Tint Bases) sating enamel paint				
9	Doors	m2	40		
	Carried to Collection			R	

	Sand down to a smooth finish, stop with "Polycell Woodfiller", apply one coat raw linseed oil thinned with 1:3 mineral turpentine (AZH1), and two finishing coats "Plascon Woodcare Waterbased Premium Exterior Range (WSP23)" clear suede varnish				
10	External cornices, rails, etc not exceeding 300 mm girth	m	30		
	Sand down to a smooth finish, stain with "Plascon Woodcare Stain W-Range" (colour meranti) and apply three coats "Plascon Woodcare Wood Preservative (FPR 1)"				
11	Doors	m2	30		
	ON PVC-U SURFACES				
	Clean with "Plascon Aquasolv Degreaser (GR1), prime with "Plascon Multi-surface Primer (WUP1)" and apply two finishing coats "Plascon Super Universal Enamel paint				
12	Pipes not exceeding 300mm girth (Provisional)	m	42		
	Carried to Collection			R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No. 14

PAINTWORK

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	306		
	307		
	308		
Carried Forward to Summary of Section No. 5		R	

Section No. 5

2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

SECTION SUMMARY - 2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS

Bill No		Page No		Amount
1	FOUNDATIONS	260		
2	CONCRETE, FORMWORK & REINFORCEMENT	264		
3	MASONRY	268		
4	WATERPROOFING	269		
5	ROOF COVERINGS, ETC	272		
6	CARPENTRY AND JOINERY	278		
7	CEILINGS, ETC	281		
8	IRONMONGERY	285		
9	METALWORK	290		
10	PLASTERING	294		
11	TILING	295		
12	PLUMBING AND DRAINAGE	304		
13	GLAZING	305		
14	PAINTWORK	309		
	Carried to Final Summary		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 6				
	EXTERNAL WORK				
	BILL NO. 1				
	GENERAL SITE WORKS, ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Supplementary preambles and full descriptions of materials, items, work, etc. applicable to this Section				
	The Contractor is referred to the previous section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described				
	SITE CLEARANCE				
	Site clearance, trees, etc				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc	m2	3 956		
	Taking out and removing, grubbing up roots and filling in holes				
2	Tree or stump exceeding 200mm and not exceeding 500mm girth	No	2		
3	Tree or stump exceeding 500mm and not exceeding 1000mm girth	No	1		
4	Tree or stump exceeding 1000mm and not exceeding 1500mm girth	No	1		
	Carried to Collection			R	

5	Tree or stump exceeding 1500mm and not exceeding 2000mm girth	No	2		
6	Tree or stump exceeding 2000mm and not exceeding 3000mm girth	No	1		
	FLAG POLES				
	Proprietary flagpoles installed complete				
	25MPa/19mm In-situ concrete base finished smooth on exposed faces				
7	Base 600 x 600 x 1000mm deep overall, with top of concrete base projecting 75mm above adjacent paved surfaces and finished smooth on all exposed sides and with horizontal top wood floated with all external angles rounded, including all necessary excavations, formwork, backfilling, etc	No	2		
	Hot dipped galvanised mild steel				
8	Standard galvanised mild steel flag pole 9m high overall with 6m high bottom section and 3m high top section of flag pole formed of 101mm and 76mm diameter tubular section steel respectively, flag pole complete with 152mm diameter x 70mm high top cap and 300 x 300mm hinged base plate, flag pole to be equiped with double pulley system in top cap, double halyard and cleat lugs, set up and fixed in position, all in accordance with the materials supplied and methods employed by the Manufacturer (Manufacturer: Flag Craft International, Tel: 011-887 2906)	No	2		
9	Standard galvanised mild steel foundation cage 250 x 250 x 500mm high overall, including casting in exact position in top of concrete base, all in accordance with the materials supplied and methods employed by the Manufacturer (Manufacturer: Flag Craft International, Tel: 011-887 2906)	No	2		
	Carried to Collection			R	

Section No. 6

EXTERNAL WORKS

Bill No. 1

GENERAL SITE WORKS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	311		
	312		
Carried Forward to Summary of Section No. 6		R	

Item No		Quantity	Rate	Amount

SECTION NO. 6

BILL NO. 2

PAVING, WALKWAYS AND CARPORTS

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Supplementary preambles and full descriptions of materials, items, work, etc. applicable to this Section

The Contractor is referred to the previous section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described

Precast concrete paving

Paving is to be laid in accordance with SABS 1200 MJ, SABS 1058 and the Concrete Masonry Association's specifications

Paving is to be laid to herringbone pattern on and including 25mm (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere)

Clean sand is to be swept into joints between roadstones

Carried to Collection R

	Structural steelwork All structural steelwork shall comply with SANS 2001-CS1 or SANS 10162 and SANS 14713 as applicable. Structural fasteners shall comply with SANS 10094 Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as secified with a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer The contractor shall be responsible for the preparation of all shop detail drawings Descriptions No allowance has been made in the mass of steel for rolling margins, rivets, additional materials in welding, decorative or protective treatment nor constructional aids Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork and concrete Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete				
	PAVING, PARKING, ETC				
	Paving to roads, parking and assembly area				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	3 134		
	Digging up topsoil				
2	Digging up topsoil to an average depth of 100mm and preserving for later use or cart away from site, as per instruction from the engineer	m2	3 134		
	Carried to Collection			R	

	Open face excavation in earth over sloping site				
3	Open face excavation to form platforms under parking areas etc and depositing excavated material over site, including haulage not exceeding 800m from perimeter of excavations	m3	968		
	Extra over bulk excavations in earth for excavation in				
4	Soft rock	m3	70		
5	Hard rock	m3	20		
	Extra over all excavations for carting away (2km free haul)				
6	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	948		
	Compaction of surfaces				
7	Compaction of ground surfaces under parking areas etc by wetting and compacting with 12 passes of a 3-sided 25 kilo Joule high energy impact compactor	m2	1 921		
8	Compaction of ground surfaces under pavings etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	1 213		
	Selected earth filling obtained from the excavations and/or prescribed stock piles on site				
9	G9 gravel-soil material under parking areas etc, compacted to 93% Mod AASHTO density	m3	20		
	Filling supplied by the contractor under parking areas, roadways, etc				
10	G7 gravel-soil material under parking areas etc, compacted to 93% Mod AASHTO density	m3	324		
11	Subbase course of G5 natural gravel material, compacted to 93% Mod AASHTO density	m3	300		
12	Base course of G5 natural gravel material, compacted to 95% Mod AASHTO density	m3	324		
	Carried to Collection			R	

13	Extra over subbase or base course of natural gravel material for stabilisation with 3% OPC cement	m3	324		
	Additional tests required by the principal agent				
14	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	4		
15	CBR test in accordance with method A8 of TMH1	No	6		
16	UCS test in accordance with method A14 of TMH1	No	9		
17	"Materials Classification" test	No	6		
	30MPa/19mm In-situ concrete edge beams				
18	Edge beam 200mm wide x 300mm high overall in lenghts not exceeding 3m, bedded 150mm deep into roadbed and finished smooth on top with steel float with all external angles rounded, including all necessary excavations, formwork, backfilling, etc.	m	131		
	"Technicrete Double Zig-Zag" pre-cast concrete interlocking paving (25MPa minimum compressive strength) including cutting and filling in edge restraints against kerbs, edge beams, buildings, etc with approved cemented filling compound, rolling to lock-up condition, etc				
19	60mm Thick natural grey paving to assembly areas, walkways, etc	m2	1 213		
20	80mm Thick natural grey paving to roads, parking areas, etc	m2	1 921		
	Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing				
21	180 x 280mm High kerbs (SANS 927 fig 7) semi-mountable kerb with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc	m	346		
22	180 x 280mm High kerbs (SANS 927 fig 7) semi-mountable kerbs with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, circular on plan exceeding 4m radius, formed with short lengths of straight kerbs, including excavation, backfilling, etc	m	41		
	Carried to Collection			R	

	"Vanstone" precast concrete channels				
23	320 x 88mm High channel type D7 with segmental channel formed therein and finished smooth on exposed surfaces including necessary excavation and formwork	m	72		
24	320 x 88mm High channel type D7 with segmental channel formed therein and finished smooth on exposed surfaces circular on plan to exceeding 4m radius, including necessary excavation and formwork	m	10		
	Standard road traffic signs				
	All road markings and signs shall comply with the latest version of the South African Road Traffic Signs Manual. The retro-reflective material shall be Class 1				
25	600mm Diameter "Stop" sign (Code R1), complete with and including 76mm diameter x 2mm tubular section post planted in and including 500 x 500 x 750mm deep 15MPa/19mm mass concrete, including all necessary excavations, formwork, backfilling, etc., post painted with one coat approved etch primer and two coats approved aluminium bitumen paint	No	1		
	Etching primer and two coats reflective road marking paint on concrete				
26	100mm Wide line	m	221		
27	300mm Wide line	m	5		
28	Numeral or letter 900mm high	No	5		
29	Disabled parking sign 900mm high	No	1		
30	No-parking sign 900mm high	No	2		
31	Traffic arrow 1200 x 650mm wide extreme	No	2		
	WALKWAYS				
	Covered walkways				
	Excavation in earth not exceeding 2m deep				
32	Trenches	m3	160		
	Carried to Collection			R	

	Extra over trench and hole excavations in earth for excavation in				
33	Soft rock	m3	16		
34	Hard rock	m3	8		
	Extra over all excavations for carting away				
35	Surplus material from excavations on site to a dumping site to be located by the contractor	m3	24		
	Risk of collapse of excavations				
36	Sides of trench and hole excavations not exceeding 1,5m deep	m2	712		
	Keeping excavations free of water				
37	Keeping excavations free of water		Item		
	Selected earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage approximately 100m from the perimeter of the excavations or stock piles, compacted to 95% Mod. AASHTO density				
38	Under floors, steps, pavings, etc	m3	81		
39	Backfilling to trenches, holes, etc	m3	55		
	Filling of natural gravel material (G5) supplied by the contractor, compacted to 95% Mod AASHTO density				
40	Under floors, steps, paving etc.	m3	85		
	Prescribed density tests on filling				
41	"Modified AASHTO Density" test	No	8		
	Soil poisoning and insecticide				
42	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	555		
43	To bottoms and sides of trenches etc	m2	1 032		
	Carried to Collection			R	

	25MPa/19mm Reinforced concrete cast against excavated surfaces				
44	Strip footings	m3	80		
	25MPa/19mm Reinforced concrete				
45	Walkway surface beds cast in panels to falls	m3	50		
	Test cubes				
46	Making and testing set of three 150 x 150 x 150mm concrete strength test cubes	No	9		
	Finishing top surfaces of concrete to an evenly ribbed non-slip surface with a wood float				
47	Walkway surface beds to falls	m2	203		
	Expansion joints with bitumen impregnated softboard between vertical concrete surfaces				
48	10mm Joints not exceeding 300mm high	m	712		
	Saw cut				
49	5 x 35mm Deep saw cut joint in concrete floor	m	94		
	Mild steel reinforcement to structural concrete work				
50	8mm Diameter bars	t	0.33		
	High tensile steel reinforcement to structural concrete work				
51	10mm Diameter bars	t	1.74		
	Fabric reinforcement				
52	Type 193 fabric reinforcement in concrete walkway surface beds, etc	m2	555		
	Brickwork of NFP bricks in class II mortar in foundations				
53	One brick walls	m2	392		
	Brickwork reinforcement				
54	150mm Wide reinforcement built in horizontally	m	1 068		
	Carried to Collection			R	

	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
55	Extra over brickwork for face brickwork	m2	335		
	"Corobrik Middelwit Fynbos Geel" brick-on-edge header course copings, sills, etc pointed with recessed joints on all exposed faces				
56	220mm Copings on top of one brick walls	m	712		
	Silicone sealing compound including backing cord, bond breaker, primer, etc				
57	5 x 30mm Deep saw cut joint in floor	m	94		
	0,5mm "Global Roofing Solutions Klip-Tite" Z275 (Light Industrial) galvanised troughed sheet steel complying with ISQ 550 (3T) (A653) with a "Chromadek" finish to one side and standard backing coat, Pebble Grey to other, fixed on top of rigid borad instulation to steel purlins or rails				
58	Roof covering with pitch not exceeding 25 degrees	m2	926		
	Welded columns in single lengths with flat base plates, bolted to concrete				
59	75 x 75 x 3mm Square hollow section columns	t	3.86		
	Welded beams in single lengths, welded to steel columns				
60	75 x 75 x 3mm Square hollow section beams	t	7.17		
	Bolts to columns, beams, etc				
61	10mm Diameter x 95mm long sleeved masonry anchor bolt	No	960		
	Purlins, girts and bracing welded to steel				
62	75 x 50 x 20 x 2.5mm Lipped channel section purlins welded or bolted to brackets	t	4.27		
63	100 x 8mm Thick flat section connection plate, 100mm long welded to beams	No	360		
	Carried to Collection			R	

	Untinted wood floated granolithic on concrete				
64	Average 45mm thick to floors and landings to falls	m2	555		
	One coat primer, one coat universal undercoat and two coats super universal enamel paint on steel				
65	On structural steel members	m2	793		
	CARPORTS				
	The following in 10 double bay undercover carports				
	Excavation in earth not exceeding 2m deep				
66	Bases	m3	1		
	20MPa/19mm unreinforced concrete cast against excavated surfaces				
67	Bases	m3	1		
	0,58mm "Global Roofing Solutions IBR 686" spelter galvanised troughed steel sheets in single lengths with "Chromadek" finish of approved standard colour on one side and standard grey backing finish on reverse side, fixed to steel purlins and rails				
68	Roof covering with pitches not exceeding 25 degrees	m2	281		
	Welded columns in single lengths with flat base plates, bolted to concrete				
69	75mm Diameter x 3mm hollow section columns with 100 x 100 x 6mm flat section top plates and base plates welded on and embedded in concrete bases	t	0.49		
	Welded beams in single lengths, welded to steel columns				
70	100 x 55mm x 8kg/m I-section beams	t	0.88		
	Welded fascias in single lengths, welded to steel columns				
71	200 x 75 x 20 x 2.5mm Thick lipped channel facias	t	0.77		
	Carried to Collection			R	

	Purlins and girts, with flat connector plates bolted to and including angle fixing brackets, welded to steel beams				
72	125 x 65 x 20 x 2.5mm Thick lipped channel purlins	t	1.10		
	Two coats approved bitumastic paint				
73	On columns and base plates	m2	5		
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200)", prime with "Plascon Metalcare Galvanised Iron Primer" (UC501) and apply two finishing coats "Plascon Super Universal Enamel" paint				
74	On columns, beams, purlins, etc	m2	226		
	Carried to Collection			R	

Section No. 6

EXTERNAL WORKS

Bill No. 2

PAVING, WALKWAYS AND CARPORTS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	314		
	315		
	316		
	317		
	318		
	319		
	320		
	321		
	322		
	323		
Carried Forward to Summary of Section No. 6		R	

Item No			Quantity	Rate	Amount
	SECTION NO. 6				
	BILL NO. 3				
	APRONS, RAMPS, STEPS, ETC				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Supplementary preambles and full descriptions of materials, items, work, etc. applicable to this Section				
	The Contractor is referred to the previous section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described				
	Aprons				
	Aprons to be cast into alternate sections of 1.5m to form construction joint between panels				
	APRONS				
	Aprons around buildings				
	Compaction of surfaces				
1	Compaction of ground surface under aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necesssary and compacting to 93% Mod AASHTO density	m2	1 869		
	20MPa/19mm unreinforced concrete				
2	Aprons cast in panels	m3	174		
	Carried to Collection			R	

3	Extra over concrete aprons for thickening size 150mm deep, 200mm top and tapering to 100mm at bottom including all excavation to 100mm, backfilling, etc.	m	1 093		
	Finishing top surfaces of concrete smooth with a wood trowel				
4	Aprons, etc to falls	m2	1 869		
	Rough formwork to sides				
5	Edges of aprons not exceeding 300mm high or wide	m	1 093		
	PRECAST CONCRETE RAINWATER CHANNELS				
	Channels around buildings				
	"Vanstone" precast concrete channels				
6	320 x 88mm High channel type D7 with segmental channel formed therein and finished smooth on exposed surfaces including necessary excavation and formwork	m	749		
	RAMPS				
	Ramps to buildings				
	Excavation in earth or compacted platforms not exceeding 2m deep				
7	Trenches	m3	17		
	Risk of collapse of excavations				
8	Sides of trench and hole excavations not exceeding 1,5m deep	m2	58		
	Earth filling obtained from the excavations and /or prescribed stock piles on site including compacted to 93% Mod AASHTO density				
9	Under floors, steps, paving, etc	m3	21		
10	Backfilling to trenches, holes, etc	m3	7		
	Carried to Collection			R	

	Compaction of surfaces				
11	Compaction of ground surface under ramps, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necesssary and compacting to 93% Mod AASHTO density	m2	38		
	Prescribed density tests on filling				
12	"Modified AASHTO Density" test	No	11		
	Soil poisoning and insecticide				
13	Under ramps, etc including forming and poisoning shallow furrows against foundation walls, etc, filling in furrows and ramming	m2	38		
14	To bottoms and sides of trenches, etc	m2	87		
	15MPa/19mm unreinforced concrete				
15	Ramps laid in panels	m3	10		
16	Extra over concrete ramps for thickening size 150mm deep, 200mm top and tapering to 100mm at bottom including all excavation to 100mm, backfilling, etc.	m	17		
	Finishing top surfaces of concrete smooth with a wood trowel				
17	Ramps to falls	m2	38		
	Brickwork of NFX bricks in class I mortar				
18	One brick walls in foundations	m2	34		
	Brickwork reinforcement				
19	150mm Wide reinforcement built in horizontally in foundations	m	194		
	Face bricks specified and approved by the Principal Agent (Prime cost of R3,500.00/1000 VAT excluded, delivered to site) pointed with recessed horizontal and vertical joints				
20	Extra over brickwork for face brickwork in foundations	m2	50		
	Carried to Collection			R	

	Brick-on-edge header course copings, sills, etc of face bricks specified and approved by the Principal Agent (Prime cost of R3,500.00/1000 VAT excluded, delivered to site) pointed with recessed joints on all exposed faces				
21	Coping on top of one brick wall	m	48		
	STEPS				
	Steps to buildings				
	15MPa/19mm unreinforced concrete				
22	Steps	m3	5		
	Rough formwork to sides				
23	Stepped outer edges of steps	m2	14		
24	Edges of aprons not exceeding 300mm high or wide	m	42		
	Untinted steel floated granolithic on concrete				
25	30mm Thick to stepped outer edges of steps	m2	5		
26	30mm Thick to risers of steps	m2	8		
27	30mm Thick to treads of steps including reedings	m2	14		
	Carried to Collection			R	

Section No. 6

EXTERNAL WORKS

Bill No. 3

APRONS, RAMPS, STEPS, ETC

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	325		
	326		
	327		
	328		
Carried Forward to Summary of Section No. 6		R	

Item No		Quantity	Rate	Amount

SECTION NO. 6

BILL NO. 4

SCREEN WALLS, FENCING AND GATES

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Supplementary preambles and full descriptions of materials, items, work, etc. applicable to Section No. 4

The Contractor is referred to the previous section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described

Fencing

Fencing to be done by a company with ISO 9001 accreditation

Shop drawings bor both gates and panels to be submitted to the principal agent prior to fixing for approval

A ten year anti-corrosion guarantee to be provided

The contractor must provide a Certificate of Compliance for material and installation issued by either the manufacturer and/or the civil engineer

Gates

Gates shall be of type, size and material as specified and shall be fixed to gate posts unless otherwise described

All gates shall be hot dipped galvanised

Carried to Collection R

	REMOVAL OF EXISTING WORK				
	Taking down and removing				
1	Remove existing mesh security fencing and gates including taking out bases, etc	m	998		
	FENCING, GATES, ETC				
	Steel palisade fencing and gates				
2	"Macsteel" steel palisade fencing 1.8m high with devils fork spikes installed complete by a firm of specialists including all necessary clearing, excavations, concrete bases, posts, paintwork, etc	m	564		
3	"Macsteel" steel palisade fencing 2.1m high with devils fork spikes installed complete by a firm of specialists including all necessary clearing, excavations, concrete bases, posts, paintwork, etc	m	998		
4	Single gate 1000 x 1800mm high to match fence including 150mm sliding bolt welded on	No	1		
5	Sliding gate 5000 x 1800mm high to match fence including suitable sliding rollers and sliding track bedded in concrete end stop, latch for padlock, posts, etc (electrical motor and cable elsewhere)	No	1		
6	Sliding gate 5000 x 2100mm high to match fence including suitable sliding rollers and sliding track bedded in concrete end stop, latch for padlock, posts, etc (electrical motor and cable elsewhere)	No	1		
	Ironmongery				
7	50mm "Union" UN33403X000200 brass padlock	No	2		
	Spot priming defects in pre-primed surfaces with "Plascon Metalcare Etch Primer Red-Oxide (SNK200)", prime with "Plascon Metalcare Galvanised Iron Primer" (UC501) and apply two finishing coats "Plascon Super Universal Enamel" paint				
8	On gates, etc (both sides measured over the full flat area)	m2	43		
	Carried to Collection			R	

Section No. 6

EXTERNAL WORKS

Bill No. 4

SCREEN WALLS, FENCING AND GATES

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	330		
	331		
Carried Forward to Summary of Section No. 6		R	

Item No		Quantity	Rate	Amount

SECTION NO. 6

BILL NO. 5

SITE SERVICES

PREAMBLES

For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"

SUPPLEMENTARY PREAMBLES

Supplementary preambles and full descriptions of materials, items, work, etc. applicable to this Section

The Contractor is referred to the previous section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described

Stormwater channels

Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc, and disposal of surplus material on site

French drains

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, "?" geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

Carried to Collection R

Laying, backfilling, bedding, etc of pipes

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with the relevant section of SANS 2001

PVC-U pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

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

PVC-U pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded PVC-U loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be PVC-U and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPe) pipes and fittings

Pipes shall be type IV and of the class specified with compression fittings

Polypropylene pipes

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with heat welded thermoplastic or where so described compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

Carried to Collection R

	Structural steel				
	Descriptions of bolts shall be deemed to include nuts and washers				
	Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
	All structural steel to be painted with one coat red oxide metal primer before delivery to site				
	STORMWATER DRAINAGE				
	Earth V-drains				
1	V-drain, 1000 x 200mm deep as per drawings including excavation, shaping, compaction, carting away of excessive excavated material, etc	m	220		
2	V-drain, 2000 x 500mm deep as per drawings including excavation, shaping, compaction, carting away of excessive excavated material, etc	m	935		
	Concrete V-drains				
3	V-drain, 2000 x 350mm deep as per drawings including excavation, shaping, compaction, carting away of excessive excavated material, concrete, formwork, etc	m	105		
	Inlet/outlet structures				
4	Inlet and outlet structures as per drawings including excavation, shaping, compaction, backfilling, carting away of excessive excavated material, concrete, formwork, etc	No	4		
	SOIL DRAINAGE				
	Excavation, filling, etc				
5	Excavation in earth not exceeding 1m deep for pipe trenches	m3	204		
	Carried to Collection			R	

6	Excavation in earth exceeding 1m and not exceeding 2m deep for pipe trenches	m3	27		
7	Excavation in earth exceeding 2m and not exceeding 3m deep for pipe trenches	m3	35		
8	Backfilling to pipe trenches from excavations or stock piles on site compacted to 90% Mod AASHTO density	m3	113		
9	Selected backfilling to pipe trenches from excavations or stock piles on site compacted to 90% Mod AASHTO density	m3	88		
10	Selected granular filling from the excavations or stock piles on site in bedding under and filling around pipes compacted to 90% Mod AASHTO density	m3	50		
	<u>Class 34 heavy duty PVC-U structured wall sewer and drain pipes</u>				
11	110mm Diameter pipes in trenches	m	120		
12	160mm Diameter pipes in trenches	m	333		
	<u>Extra over Class 34 heavy duty PVC-U sewer and drain pipes for fittings</u>				
13	110mm Bend	No	16		
14	160mm Bend	No	2		
15	110mm Junction	No	4		
16	160mm Junction	No	11		
17	110mm Access junction	No	13		
18	160mm Access junction	No	2		
19	160 x 110mm Access reducing junction	No	5		
20	110mm Rodding eye	No	7		
21	160mm Rodding eye	No	3		
	Carried to Collection			R	

	Precast concrete circular inspection chambers, including excavations, concrete base, benching, step irons, rings, spacers, roof slabs, piping, etc installed complete (covers elsewhere)				
22	1050mm Diameter Type 1A inspection chamber exceeding 1m and not exceeding 1.5m deep internally	No	8		
23	1050mm Diameter Type 1A inspection chamber exceeding 1.5m and not exceeding 2m deep internally	No	1		
24	1050mm Diameter Type 1A inspection chamber exceeding 2m and not exceeding 2.5m deep internally	No	1		
	Cast iron covers etc				
25	550mm Diameter x 71kg medium duty singular seal Type 4 hinged manhole cover and frame	No	10		
	"Calcamite" tanks				
26	15500 Litre SABS approved PVC tank installed complete including excavation, backfilling, 150mm thick reinforced concrete slab, fittings, etc	No	1		
	"Quick4" soak away chamber systems				
27	"Quick4" soak away installed complete as per drawings including excavation, backfilling, etc	m	21		
	Sundries				
28	Extra over excavation for trenches, chambers, etc for excavation in soft rock	m3	41		
29	Extra over excavation for trenches, chambers, etc for excavation in hard rock	m3	23		
30	265 x 265mm x 9kg Class 14A cast iron cover and frame over rodding eye (rodding eye elsewhere), including concrete encasing	No	10		
31	300 x 300 x 50mm Precast concrete inspection eye marker slab set in ground	No	20		
32	110mm uPVC gulley head and grating	No	12		
33	110mm uPVC gulley P-trap not exceeding 500mm deep	No	12		
	Carried to Collection			R	

34	445 x 430 x 165mm Precast concrete dished gulley top	No	12		
35	Cutting into existing 110mm drain pipe for and forming junction with 110mm pipe	No	6		
36	Cutting into side of existing inspection chamber for and connecting 110mm pipe, including inserting 110mm channel junction and making good concrete benching	No	10		
37	Testing soil drainage system		Item		
	WATER AND FIRE WATER SUPPLIES				
	Excavation, filling, etc				
38	Excavation in earth not exceeding 1m deep for pipe trenches	m3	265		
39	Backfilling to pipe trenches from excavations or stock piles on site compacted to 90% Mod AASHTO density	m3	113		
40	Selected backfilling to pipe trenches from excavations or stock piles on site compacted to 90% Mod AASHTO density	m3	88		
41	Selected granular filling from the excavations or stock piles on site in bedding under and filling around pipes compacted to 90% Mod AASHTO density	m3	50		
	Class 16 PVC-U pressure pipes with rubber ring joints				
42	50mm Diameter pipes in trenches	m	103		
43	63mm Diameter pipes in trenches	m	194		
44	110mm Diameter pipes in trenches	m	587		
	Extra over class 16 PVC-U pressure pipes for uPVC pressure fittings with rubber rings				
45	50mm Elbow	No	28		
46	63mm Elbow	No	3		
47	110mm Elbow	No	10		
48	50mm Tee	No	4		
	Carried to Collection			R	

49	50 x 25mm Male adaptor	No	15		
	Extra over class 16 PVC-U pressure pipes for cast iron pressure fittings				
50	63 x 50mm Reducer	No	1		
51	110 x 50mm Reducer	No	2		
52	63mm Tee	No	1		
53	110mm Tee	No	1		
54	63 x 50 x 63mm Reducing tee	No	3		
55	110 x 50 x 110mm Reducing tee	No	4		
56	110 x 63 x 110mm Reducing tee	No	3		
57	50mm End cap	No	5		
58	50 x 25mm Saddle	No	2		
59	63 x 25mm Saddle	No	5		
60	110 x 25mm Saddle	No	8		
61	63mm Flanged adaptor	No	4		
62	110mm Flanged adaptor	No	2		
63	110mm Hydrant tee drilled to table 16, including connecting bolts, gaskets, etc	No	5		
	Class 10 HDPe type PE 100 pipes in accordance with SANS 533 Specification				
64	25mm Diameter pipes in trenches	m	56		
65	50mm Diameter pipes in trenches	m	48		
	Extra over Class 10 HDPe type PE 100 pipes for Class 16 compression fittings				
66	25mm Fittings	No	32		
67	50mm Elbow	No	13		
	Carried to Collection			R	

68	50 x 25mm Male adaptor	No	15		
	Resilient seal rubberised metal gate valves in accordance with SANS 664, Class 16 waterworks applications with cap top, plain thrust collar, non-rising spindle and anti-clockwise closing				
69	65mm Flanged drilled to SANS 1123 Table 16 including marking of kerbs opposite valve	No	2		
70	100mm Flanged drilled to SANS 1123 Table 16 including marking of kerbs opposite valve	No	1		
	Valve chambers, etc				
71	Isolating valve box as per drawings installed complete	No	3		
	Fire hydrant assembly				
72	Tamper proof fire hydrant valve including galvanised 90 degree bend and flange connecting galvanised pipe between bend and hydrant as per drawings	No	5		
	Thrust blocks				
73	20MPa/19mm concrete in thrust blocks	m3	4		
74	Rough formwork (degree of accuracy II) to thrust blocks	m2	16		
	Sundries				
75	Extra over excavation for trenches, chambers, etc for excavation in soft rock	m3	27		
76	Extra over excavation for trenches, chambers, etc for excavation in hard rock	m3	13		
77	Disinfecting water pipe and tank system		Item		
78	Testing water network system		Item		
	The following in four (4) drinking fountains				
	20MPa/19mm concrete				
79	Bases for portal frame 300 x 300 x 300mm high including neacessary excavation, formwork, etc	No	8		
	Carried to Collection			R	

80	Sloping surface beds 2250 x 1000 x 100mm thick including necessary excavation, formwork, etc	No	4		
	Finishing top surfaces of concrete smooth with a wood trowel				
81	Surface beds to falls	m2	9		
	Portal frames				
82	100 x 50 x 11mm Thick mild steel portal frame, 3718mm girth with two 200 x 200 x 4mm flat section base plates welded on and cast into concrete bases (bases elsewhere)	No	4		
	Class 0 copper pipes				
83	22mm Pipes	m	10		
	Extra over class 0 copper pipes for capillary fittings				
84	22mm Fittings	No	20		
	Taps, etc				
85	25mm "Cobra Ref. 1001/125-25" brass fullway gate valve	No	4		
86	25mm "Cobra Ref. 211-25CP Star" pillartap	No	12		
87	25mm Cast brass in-line strainer	No	4		
	Concrete pipes				
88	Soakaway formed of 750mm diameter concrete pipe, 1200mm long, placed vertically below surface beds and filled in with 19mm stone including excavation, backfilling, etc	No	4		
	Borehole and equipment				
89	Allow the provisional sum of R200,000 (Two hundred thousand Rand) for geohydrological survey, drilling and testing of borehole		Item		
90	Allow for profit on above if required		Item		
91	Allow for attendance		Item		
	Carried to Collection			R	

92	Allow the provisional sum of R100,000 (One hundred thousand Rand) for equipment of borehole including all pumps, piping, electrical work, etc		Item		
93	Allow for profit on above if required		Item		
94	Allow for attendance		Item		
	Water holding tanks and stands				
95	Allow the provisional sum of R700,000 (Seven hundred thousand Rand) for the supply and installation of a 10m high steel stand and platform with 80kl stainless steel tank including all pipework, valves, float valves, excavations, bases, electrical work, etc		Item		
96	Allow for profit on above if required		Item		
97	Allow for attendance		Item		
	RAINWATER STORAGE TANKS				
	The following in eighteen (18) rainwater tanks and platforms at classrooms, etc				
	Excavation in earth not exceeding 2m deep				
98	Trenches for tank platforms	m3	52		
	Risk of collapse of excavations				
99	Sides of trench and hole excavation exceeding 1,5m deep	m2	173		
	Selected earth filling obtained from the excavations and/or prescribed stock piles on site, including haulage approximately 100m from the perimeter of the excavations or stock piles, compacted to 93% Mod. AASHTO density				
100	Under floors, steps, paving, etc	m3	13		
101	Backfilling to trenches, holes, etc	m3	10		
102	Spread and levelled over site	m3	29		
	15Mpa / 19mm Unreinforced concrete				
103	Strip footings	m3	22		
	Carried to Collection			R	

104	Platform surface beds cast in panels	m3	4		
	Finishing top surfaces of concrete smooth with a wood float				
105	Platform surface beds	m2	44		
	Brickwork of NFP bricks in class II mortar				
106	One brick walls	m2	83		
	2,5mm Brickwork reinforcement				
107	150mm Wide reinforcement built horizontally	m	256		
	"Corobrik Middelwit Fynbos Geel" face bricks pointed with recessed horizontal and vertical joints				
108	Extra over brickwork for face brickwork	m2	68		
	"Corobrik Middelwit Fynbos Geel" brick-on-edge header course copings, sills, etc pointed with recessed joints on all exposed faces				
109	Coping on top of one brick wall	m	128		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
110	Under surface beds	m2	44		
	Galvanised medium normalized mild steel piping				
111	25mm Pipes	m	13		
	Extra over galvanised piping for galvanised mild steel fittings				
112	25mm Fittings	No	72		
113	50mm Union	No	18		
114	50mm Reducing bush	No	18		
115	15mm "Cobra Ref. 108LK" brass hose bibtap	No	18		
	Carried to Collection			R	

	"JoJo" approved SANS PVC water tanks				
116	5 000 Litre watertank fitted onto and secured to tank platforms	No	18		
	Carried to Collection			R	

Section No. 6

EXTERNAL WORKS

Bill No. 5

SITE SERVICES

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	333		
	334		
	335		
	336		
	337		
	338		
	339		
	340		
	341		
	342		
	343		
	344		
Carried Forward to Summary of Section No. 6		R	

Section No. 6

EXTERNAL WORKS

SECTION SUMMARY - EXTERNAL WORKS

Bill No		Page No		Amount
1	GENERAL SITE WORKS	313		
2	PAVING, WALKWAYS AND CARPORTS	324		
3	APRONS, RAMPS, STEPS, ETC	329		
4	SCREEN WALLS, FENCING AND GATES	332		
5	SITE SERVICES	345		

Carried to Final Summary R

Item No			Quantity	Rate	Amount
	SECTION NO. 7				
	MECHANICAL INSTALLATION				
	BILL NO. 1				
	AIR-CONDITIONING				
	PREAMBLES				
	For preambles see "Construction Specifications - General Specification (PW371-A)" and "Construction Specifications - Particular Specification (PW371-B)"				
	SUPPLEMENTARY PREAMBLES				
	Supplementary preambles and full descriptions of materials, items, work, etc. applicable to this Section				
	The Contractor is referred to the previous section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this section, unless specifically otherwise described				
	Specification and drawings				
	Tenderers are referred to the Mechanical Specification annexed to these bills of quantities for full descriptions of the project specification, materials to be used, etc				
	AIR-CONDITIONING				
	Air-conditioning systems in Administration				
	Air-conditioning units				
1	18000 BTU/h (heating and cooling) "Samsung" mid-wall split type air-conditioning unit with heat pump and complete with mounting brackets, 2 metre insulated copper pipe, weather proof isolator, uPVC condensate pipe, wired control, electrical connection, etc	No	2		
	Carried to Collection			R	

2	24000 BTU/h (heating and cooling) "Samsung" mid-wall split type air-conditioning unit with heat pump and complete with mounting brackets, 2 metre insulated copper pipe, weather proof isolator, uPVC condensate pipe, wired control, electrical connection, etc	No	2		
3	36000 BTU/h (heating and cooling) "Samsung" mid-wall split type air-conditioning unit with heat pump and complete with mounting brackets, 2 metre insulated copper pipe, weather proof isolator, uPVC condensate pipe, wired control, electrical connection, etc	No	2		
	Testing and commissioning				
4	Testing and commissioning the mechanical installation		Item		
	Manuals, drawings, etc				
5	Provision of as-built drawings, manuals, operative training, etc		Item		
	Certificates of Compliance				
6	Allow for the issue of all Certificates of Compliance as directed by the Principal Agent		Item		
	Carried to Collection			R	

Section No. 7

MECHANICAL INSTALLATION

Bill No. 1

AIR-CONDITIONING

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	347		
	348		
Carried to Final Summary		R	

Item No		Quantity	Rate	Amount

SECTION NO. 8

BILL NO.1

PROVISIONAL SUMS

SUPPLEMENTARY PREAMBLES

Cash discount

No cash discount. All provisional sums are "NET"

Fuel, power and water for commissioning plant

The cost of water, power and fuel for the commissioning of plant shall be borne by the sub-contractor appointed for the relevant sub-contract works in terms of the conditions under which they have/are contracted for the specialist work involved

Profit

Provisional sums are net and do not include builder's discount. The Contractor may allow next to "Profit" items for any profit he might consider necessary

Attendance

It will be expected from the Contractor to render all general attendance and, if specifically so described, special attendance services to each relevant Specialist, all in accordance with the Clauses set out in the "Preliminaries" section

The item "Attendance" which follows each of the provisional sums for sub-contractors' work, shall be deemed to cover all the Contractor's costs incurred in providing free of charge to the sub-contractors, the following:

1 The services as set out in the clauses in the "Preliminaries" section

2 Making good in all trades and cleaning down and removal of rubbish on completion

Carried to Collection R

	The Contractor may allow next to "Attendance" items for the recovery of such costs he might consider necessary Also refer to the Clauses in the "Preliminaries" section for the definitions and adjustment of "Attendance" and "Special Attendance" respectively <u>Domestic sub-contracts</u> These scheduled allowances are for work to be executed under separate domestic sub-contracts by firms of Specialists nominated by the Employer and/or Principal Agent All provisional sums cover the supply and installation of material, equipment, plant, etc., including the commissioning thereof, where applicable <u>Money provisions</u> The scheduled allowances for money provisions are to be used at the discretion of the Employer/Principal Agent and to be adjusted where applicable or to be deducted in whole or in part if not required				
	<u>PROVISIONAL SUMS FOR DOMESTIC SUB-CONTRACT WORKS</u>				
	<u>Signage</u>				
1	Provide the amount of R40,000.00 (Forty thousand Rand) for signage	Item			40 000.00
2	Allow for profit on above if required	Item			
3	Allow for attendance	Item			
	<u>Classroom desks for secondary schools</u>				
4	Provide the amount of R780,000.00 (Seven hundred and eighty thousand Rand) for classroom desks	Item			780 000.00
5	Allow for profit on above if required	Item			
6	Allow for attendance	Item			
	Carried to Collection			R	

	Teacher's desks in classrooms and office of life science				
7	Provide the amount of R67,500.00 (Sixty seven thousand five hundred Rand) for teacher's desks in classrooms	Item			67 500.00
8	Allow for profit on above if required	Item			
9	Allow for attendance	Item			
	Teacher's chairs in classrooms and office of life science				
10	Provide the amount of R18,900.00 (Eighteen thousand nine hundred Rand) for rickstacker teacher's chairs in classrooms	Item			18 900.00
11	Allow for profit on above if required	Item			
12	Allow for attendance	Item			
	Administration loose furniture				
13	Provide the amount of R160,000.00 (One hundred and sixty thousand Rand) for admin furniture	Item			160 000.00
14	Allow for profit on above if required	Item			
15	Allow for attendance	Item			
	Beds, mattresses, linen, etc to sick room of admin				
16	Provide the amount of R10,000.00 (Ten thousand Rand) for beds, mattresses, linen, etc in nutrition	Item			10 000.00
17	Allow for profit on above if required	Item			
18	Allow for attendance	Item			
	Gas installation to life science				
19	Provide the amount of R40,000.00 (Fourty thousand Rand) for gas installation in science	Item			40 000.00
20	Allow for profit on above if required	Item			
21	Allow for attendance	Item			
	Carried to Collection			R	

	Gas installation to science				
22	Provide the amount of R40,000.00 (Fourty thousand Rand) for gas installation in science	Item			40 000.00
23	Allow for profit on above if required	Item			
24	Allow for attendance	Item			
	Landscaping				
25	Provide the amount of R60,000 (Sixty thousand Rand) for landscaping, grassing, etc	Item			60 000.00
26	Allow for profit on above if required	Item			
27	Allow for attendance	Item			
	Electrical installation				
28	Provide the amount of R2,000,000 (Two million Rand) for electrical installation	Item			2 000 000.00
29	Allow for profit on above if required	Item			
30	Allow for attendance	Item			
	Moving of mobile classrooms				
31	Provide the amount of R450,000 (Four hundred and fifty thousand Rand) for moving of existing mobile classrooms to new site	Item			450 000.00
32	Allow for profit on above if required	Item			
33	Allow for attendance	Item			
	MONEY PROVISIONS				
	Minor alteration work				
34	Provide the amount of R70,000 (Seventy thousand Rand) for minor alteration and upgrading of existing ablutions (to be measured and paid using bills of quantities items)	Item			70 000.00
	Carried to Collection			R	

	Community Liaison Officer (CLO)				
35	Provide the amount of R4,000 (Four thousand Rand) per month (over the full construction period) for a CLO. The contractor to note that monthly payslips to be provided to both the principal agent and the Employer. The duties of the CLO will include EPWP reporting on a monthly basis	Months	36		
	Carried to Collection			R	

Section No. 8

PROVISIONAL SUMS

Bill No. 1

PROVISIONAL SUMS

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	350		
	351		
	352		
	353		
	354		
Carried to Final Summary		R	

FINAL SUMMARY

Section No		Page No		Amount
1	PRELIMINARIES	48		
2	RENOVATIONS AND ALTERATIONS TO EXISTING	129		
3	ADMINISTRATION BLOCK	197		
4	5 X 4-CLASSROOM & 2 X 3-CLASSROOM BLOCKS (NO STORES)	253		
5	2 X 8-SEATER + 2 URINALS ENVIROLOO ABLUTIONS	310		
6	EXTERNAL WORKS	346		
7	MECHANICAL INSTALLATION	349		
8	PROVISIONAL SUMS	355		
	SUB-TOTAL		R	
	CONTINGENCIES			
	Allow the amount of R1,600,000 (One million six hundred thousand Rand) for Contingencies for building work, to be used as directed by the Principal Agent and deducted in whole or in part if not required		R	1 600 000.00
	SUB-TOTAL		R	
	FLUCTUATION IN COST			
	Allow the amount of R1,600 000 (One million six hundred thousand Rand) for fluctuations in cost in terms of Contract Price Adjustment Provisions		R	1 600 000.00
	SUB-TOTAL		R	
	Add: Value Added Tax at 15%		R	
	Carried to Form of Tender		R	

Rantobeng Secondary School