

# **ANNEX 1**

## **PROPOSED CONSTRUCTION OF AN ECOHUB FOR AQUACULTURE PRODUCTION, PROCESSING AND SKILLS ENHANCEMENT**

**REVISED BILLS OF QUANTITIES**

**JANUARY 2024**

ITEM	DESCRIPTION	KSHS
<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p>	<p><b><u>EMPLOYER</u></b>  The Employer is <b>KENYA MARINE &amp; FISHERIES RESEARCH INSTITUTE; P.O. BOX 81651 - 80100 MOMBASA</b>  The term "Employer" and "Government" wherever used in the contract document shall be synonymous</p> <p><b><u>CONTRACTOR</u></b>  The term "Contractor" refers to the person whose or corporate body that's tender to carry out the Works has been accepted by the Employer</p> <p><b><u>PROJECT MANAGER</u></b>  The term "P.M." wherever used in these Bills of Quantities shall be deemed to imply the Project Manager as defined in Condition 1 of the Conditions of Contract or such person or persons as may be duly authorized to represent him on behalf of the Government.</p> <p><b><u>ARCHITECT</u></b>  The term "Architect" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is Kmfri P.O. Box 8651 Mombasa</p> <p><b><u>QUANTITY SURVEYOR</u></b>  The term "Quantity Surveyor" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is the Kmfri P.O. Box 8651 Mombasa</p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	KSHS
A	<p><b><u>DESCRIPTION OF THE WORKS AND SCOPE OF CONTRACT</u></b>  These are works of erection and completion of <b>PROPOSED CONSTRUCTION OF AN ECOHUB FOR AQUACULTURE PRODUCTION, PROCESSING AND SKILLS ENHANCEMENT</b>. The scope of contract generally comprises the of provision of Materials, Labour, tools, site management and all accessories necessary in the excavations, concrete work, walling, roofing, windows and doors, finishes, fittings and associated electrical installation, Mechanical works and Civil works.</p>	
B	<p><b><u>LOCATION OF SITE</u></b>  The site of the proposed works is at located at Lunjre Village. - Siaya County. The Contractor is advised to visit the site to familiarize himself with the nature and position of the site. No claims arising from the Contractor’s failure to do so will be entertained.</p>	
	<p><b><u>FORM OF CONTRACT</u></b></p>	
C	<p>The form of contract will be the one included in the Republic of Kenya Standard Tender Document for Procurement of Works (Building and Associated Civil Engineering) (2006 Edition) hereby attached and Conditions of Contract are those attached thereto. If the Contractor considers that compliance with any of the Conditions of Contract involves any expenses distribute them among his rates for the various items in the Bills of Quantities. No claim shall be allowed arising from the Contractors compliance with <u>any of the Conditions of Contract</u>. These are numbered from 1 to 37 as set out on pages 16 to 35 of these tender documents. Particulars of the insertion to be made in the Appendix of the Appendix of the Contract Agreement will be found in the Particular Preliminaries of these Bills of Quantities.</p>	
D	<p><b><u>PERFORMANCE BOND.</u></b>  The Contractor shall find and submit on the Form of Tender the name of one surety who shall be an approved bank or approved fidelity insurance company and who will be willing to be bound to the Employer in an amount of Five per cent (5%) of the Contract amount for the due performance of the contract up to the date of completion as certified by the "Employer's Representative" and who will when and if called upon, sign a Bond to that effect on Ministry of Roads Public works and Housing Form No 118 (without the addition of any limitations) on the same day as the Contract Agreement is signed. In the event of the surety named in the form of tender not being approved by the Employer, the Contractor shall furnish within seven days another Surety to the approval of the Government.</p>	
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A	<p><b><u>METHOD OF MEASUREMENT</u></b></p> <p>The Bills of quantities have been prepared in accordance with the general principles of the standard Method of Measurement of Building Works of East Africa - Second Edition ( Metric ), published in January, 1987 by the Architectural Association of Kenya, Chapter of Quantity Surveyors.</p>	
B	<p><b><u>SUFFICIENCY OF TENDER</u></b></p> <p>The Contractor be deemed to have satisfied himself before tendering as to the correctness and sufficiency of the Tender for the Works and of the rates and prices stated in the priced Bills of Quantities which rates and prices shall cover all his obligations under the Contract and all matter and things necessary for the proper completion and maintenance of the work.</p>	
C	<p><b><u>BID SECURITY</u></b></p> <p>The Bidder shall furnish, as part of his bid, a security as specified in the tender advertisement.</p> <p>The bid security shall, at the bidder's option, be in the form of a certified cheque, bank draft, standby letter of credit or guarantee from a reputable bank located in Kenya or foreign bank which has been determined by the bidder to be acceptable to the Government. The format of the bank guarantee shall be in accordance with the sample forms of bid security included in the post qualification forms, other formats may be permitted, subject to the prior approval of the Government. Letters of credit, bank guarantees issued as surety for the bid shall be valid for a period of One Hundred and Twenty (120) days from the date of Tender Opening.</p> <p>The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the "PROJECT MANAGER"</p> <p><b><u>AREA TO BE OCCUPIED BY THE CONTRACTOR</u></b></p> <p>The area of the site which may be occupied by the Contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the "PROJECT MANAGER"</p>	
D	<p><b><u>ADJOINING PROPERTY</u></b></p> <p>Take all necessary precautions to prevent damage to adjoining property. Any damage occurring must be made good to the satisfaction of the "PROJECT MANAGER" and/or owner(s) of the adjoining property at the contractor's expense.</p>	
	<p><i>Carried to Collection</i></p>	

ITEM	DESCRIPTION	KSHS
A	<p><b><u>SANITATION OF THE WORKS</u></b></p> <p>The Sanitation of the works shall be arranged and maintained by the Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the "PROJECT MANAGER"</p>	
B	<p><b><u>CLAIMS</u></b></p> <p>It shall be a condition of this contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and/or expenses due to any of the contract conditions, or by any other reason whatsoever, he shall present such claim or intent to claim notice to the "PROJECT MANAGER" within fourteen days after the event giving rise to the claim has first arisen. The claim shall be submitted within fourteen days thereafter. No claims shall be entertained if the contractor has not complied with these conditions.</p>	
C	<p><b><u>OFFICE FOR THE "PROJECT MANAGER"</u></b></p> <p>The contractor shall provide, erect and maintain where directed on site and afterwards dismantle the Site Office of the type noted in the particular preliminaries, complete with furniture. He shall also provide a strong metal trunk complete with strong hasp and staple fastening and two keys. He shall provide, erect maintain a lock-up pedestal type water or bucket closet for the sole use of the "ER" including making temporary connections to the drain where applicable to the satisfaction Government and Medical Officer of Health and pay the services of a cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencement to the completion of the works and dismantle and make good disturbed surfaces. The office and closet shall be complete before the contractor is permitted to commence the works. The Contractor shall make available on site as and when required by the "PROJECT MANAGER" a modern and accurate level together with levelling staff, ranging rods and 50 metre metallic linen tape.</p>	
D	<p><b><u>PROGRESS CHART.</u></b></p> <p>The Contractor shall provide within two weeks of Possession of Site and in agreement with the "PROJECT MANAGER" a Progress Chart for the whole of the works including the works of Nominated Sub- Contractors; one copy to be handed to the "Employer's Representative" and a further copy to be retained site. Progress to be recorded and chart to be amended as necessary as the work proceeds.</p>	

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A	<p><b><u>FIRM PRICE CONTRACT</u></b>  This is a <i>Firm price contract</i> and, therefore the tenderer shall not be reimbursed for any increases in the costs of materials and/or labour in the execution of the works except as provided under the fluctuations clause.</p>	
B	<p><b><u>PRICING RATES</u></b>  The tenderer shall include for all costs in executing the whole of the works, including supply of Materials, Labour, tools, equipment and site management, replacing damaged items, fixing, , taxes, all to comply with the said Conditions of Contract.</p>	
C	<p><b><u>PAYMENTS</u></b>  The tenderer’s attention is drawn to the fact that the Employer shall only pay for the work done all in accordance with Clause 23 of the Conditions of Contract Agreement.  In order to facilitate this, a list of the general component elements for the works is given at the summary page of these specifications and the tenderer is requested to break down his tender sum commensurate to the said elements.</p>	
D	<p><b><u>URGENCY OF THE WORKS</u></b>  The Contractor is notified that these “works are urgent” and should be completed within the period stated in these Particular Preliminaries. The Contractor should allow for any costs he may incur by having to complete the works within the stipulated contract period.</p>	
E	<p><b><u>SIGN BOARD</u></b>  Allow for providing, erecting and maintaining throughout the course of the contract and afterwards clearing away a sign board in accordance with the details to be obtained from the "PROJECT MANAGER"</p>	
	<p><b><u>VIEWING OF DRAWINGS</u></b>  Any tenderer interested in viewing the drawings related to this project before submission of the tenders may do so by contacting the "PROJECT MANAGER"</p>	
	<p><b><u>USE OF SITE</u></b>  Do not use the site for any other purpose other than carrying out the works. Do not permit or display any advertisement without the consent of the "PROJECT MANAGER"</p>	
	<p><i>Carried to Collection</i></p>	



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A	<p><b><u>V.A.T DEDUCTIONS</u></b></p> <p>The tenderer is advised that in accordance with Government public notice No. 35 &amp;36 Dated 11th September 2003 operational from 1st October 2003, withholding VAT will be levied against the contract sum by the Employer and remitted to the Commissioner of VAT through all interim certificates. It should however be noted that this is not additional tax but a new mode of payment of VAT, any excess payment will be refundable once the Contractor has submitted monthly returns to the Commissioner of VAT who will do the refunds when satisfied that the VAT regulations have been complied with.</p> <p><b><u>PLANT AND LABOUR RETURNS</u></b></p> <p>The Contractor shall prepare and deliver to the Architect or his representative detailed returns showing the number and category of his supervisors, numbers of the several classes of labour and plant employed on the works together with those of his entire Sub – Contractors. The Contractor shall keep a visitors’ book on the site and shall ensure that the names of all visitors to the site are duly recorded.</p> <p><b><u>TRANSPORT TO AND FROM THE SITE</u></b></p> <p>The Contractor shall include in his tender price for the transport of materials, workmen, etc., to and from the site of the proposed works, at such hours and by such routes as are permitted by the competent Authorities.</p> <p><b><u>WATER FOR WORKS</u></b></p> <p>The Contractor shall provide at his own risk and cost all necessary arrangements for clean and fresh water for the works including that required by the Sub-contractors on site. He must provide for any temporary plumbing, meter, payment of all water bills, storage facilities and clear away after completion and make good works disturbed. No guarantee is given or implied that sufficient water will be available from the mains and the Contractor must make his own arrangements for augmenting this supply at his own cost as necessary. Nominated Sub-Contractors are to be made liable for the cost of any water used or any installation specially provided for their own use.</p> <p><b><u>LOCAL REGULATIONS AND BY – LAWS</u></b></p> <p>The Contractor is to comply with all local regulations and by – laws of the local Authority including serving of notices, paying of fees including all stamp charges.</p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	KSHS
	<p><b><u>POLICE REGULATIONS</u></b></p> <p>A The Contractor shall at all times observe police and traffic Regulations including those regarding the loading or unloading of or waiting vehicles on the Public Highways and the Contract Sum shall be deemed to include for strict compliance therewith.</p> <p><b><u>LIGHTING AND POWER FOR THE WORKS</u></b></p> <p>B The Contractor shall provide at his own risk and cost the required electricity supply for the works including that required by Sub-Contractors and others on site, and pay all fees and obtain all permits in connection therewith. Nominated Sub-Contractors are to be made liable for the cost of any electrical power used and for any installations provided specifically for their own use.</p> <p><b><u>DAY WORKS</u></b></p> <p>C The Project Manager may, if in his opinion deems it necessary or desirable, order in writing that any additional or substituted work shall be executed on a day work basis. The contractor shall then be paid for such work in accordance with day work rates and percentage additions to be agreed with the Project Quantity Surveyor.</p> <p>The contractor shall furnish to the Architect all receipts or vouchers as may be necessary to prove the amounts paid and before ordering materials shall submit to the Architect quotations for the same for his approval.</p> <p>The contractor shall furnish to the Architect all receipts or vouchers as may be necessary to prove the amounts paid and before ordering materials shall submit to the Architect quotations for the same for his approval.</p> <p>In respect of all works executed on a day work basis the contractor shall during the continuance of such works, deliver each day to the Project Manager a list in duplicate of names, occupation and time of all work men employed on such work and a statement also in duplicate showing the description and the quantity of all materials and plant used therein or thereof. (other than plant which is included in the percentage addition on net amount of wages) One copy of each list and statement will, if correct or when agreed, be signed by the Project Manager and returned to the Contractor.</p> <p><b><u>TELEPHONE</u></b></p> <p>A telephone will be provided on site by the contractor. He must allow for footing all bills incurred by him and the design team during the entire contract period.</p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	KSHS
A	<p><b><u>CONTRACTOR'S SUPERINTENDENT / SITE AGENT</u></b></p> <p>The Contractor shall constantly keep on the Works a literate English-speaking agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Architect and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.</p>	
B	<p><b><u>LABOUR</u></b></p> <p>No labour may be housed on site with the exception of watchmen. The Contractor shall provide, erect and maintain satisfactory housing for the watchmen and shall remove the same on completion of the works.</p> <p>Unless the Project Manager otherwise agrees the Contractor is to recruit locally all his unskilled labour and as much as possible of his skilled labour.</p>	
C	<p><b><u>HOARDING</u></b></p> <p>The contractor shall enclose the site or part of the works under construction with a hoarding 2400 mm high consisting of iron sheets on 100 x 50 mm timber posts firmly secured at 1800 mm centers with two 75 x 50 mm timber rails. The Contractor is in addition required to take all precautions necessary for the safe custody of the works, materials, plant, public and Employer's property on the site.</p>	
D	<p><b><u>PROTECTION OF THE WORKS</u></b></p> <p>The Contractor shall protect or cover-up all finished work liable to damage including provision of temporary roofs, gutters, drain etc. during the progress of the works and until the completion of the works.</p> <p>Any damage occurring to the works, materials, drains, paths or other works due to weather or want of protection during the progress of the works shall be made good by the Contractor at no extra cost.</p>	
E	<p><b><u>CONCRETE CUBE TESTS</u></b></p> <p>The Contractor shall allow for the cost of preparing, delivery and testing of concrete samples required by the Engineers and shall obtain test Certificates of concrete test tubes, each cube size 150 x 150 x 150 mm or such other size as may be directed by the Engineer.</p> <p>A set of 3No x 50 Tests @ .....= Kshs.....</p>	
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A	<p><b><u>PROGRAMME / PROGRESS CHART</u></b></p> <p>Within seven (14) days of signing the Contract, the Contractor shall prepare a full detailed programme and progress chart in the form of bar chart, precedence diagram or network analysis showing completion dates of various sections of work and resource requirement to the approval of the Project Manager.</p> <p>If the Contractor proposes sectional completion of the works, he must plan this detail including access roads and services and this programme shall be reflected on the chart. Upon letting of the Sub-contract works the Contractor shall incorporate times and details of each Sub-contractor's work – which information is to be agreed with the Sub- contractor concerned and the chart shall be so designed to accommodate this information.</p> <p>At the end of each week the Contractor shall mark on the chart in a different colour the actual time taken to complete the respective stages and section of the works. The Contractor shall also show upon the chart the anticipated weekly labour strength required, divided into labourers and craftsmen, and shall similarly mark up the actual numbers employed.</p> <p>The Contractor shall supply approved copies of the chart to the Project Manager.</p> <p>The Contractor shall liaise with the Project Manager, Nominated Sub-contractors and Nominated Suppliers to ensure that Contract Completion date remains unchanged.</p> <p><b><u>TRAINING LEVY</u></b></p> <p>The Contractor's attention is drawn to legal Notice No. 237 of October, 1971, ( or such subsequent edition as may be current ) together with the latest amendments (if any) which requires payment by the Contractor of a Training Levy at the rate of ¼% (one quarter per cent ) of the Contract Sum on all Contractors of more than Ksh. 50,000.00 in value and his tender must include for all costs arising or resulting therefrom. Proof of Payment of this levy will be required.</p> <p><b><u>VALUE ADDED TAX</u></b></p> <p>The Contractor's attention is drawn to the Provisions of the Finance Bill, 1999 which requires payment by the Contractor of Value Added Tax (VAT) on construction services rendered. The Contractor will provide for this at the summary page otherwise will be deemed to have included VAT in his rates</p>	
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A	<p><b><u>WITHHOLDING TAX ON CONSULTANCY, AGENCY FEES AND CONTRACTUAL PAYMENTS SECTION 35 (3) (f) (i) (ii)</u></b></p> <p>The Contractor's attention is drawn to the Kenya Revenue Authority (K.R.A.) Public and any other amendments thereafter Notice notifying the Tax paying public that with effect from 1st July, 2000, 2 % withholding tax is applicable to all payments made to resident's persons in respect of Consultancy, Agency or Contractual Payments as follows ;</p> <p>i) To individuals' recipients without a registered business name or without a Personal Identification Number (PIN) if the amount is Kshs. 24,000 or more per month</p> <p>ii) The recipient is a person working under a registered business name of having a Personal Identification Number (PIN) if the amount is Kshs. 200,000.00 or more in a month ..... In this case the payer should advise the commissioner of Income Tax of payments paid in writing immediately.</p> <p><b><u>STANDARD LEVY</u></b></p> <p>B The Contractor's attention is drawn to Legal Notice No. 267 of 1990 ( or such subsequent edition as may be current ) together with the latest amendments (if any), which requires payment by all Contractor's Standards levy at the rate of 1/5% ( one fifth per cent ) of the ex-factory price in respect of manufacture during this each month subsequent to a ceiling of Ksh. 200,000.00 per Annum. The tenderer must allow for all cost arising or resulting therefrom. Proof of Payment of this levy will be required</p> <p><b><u>SAFETY</u></b></p> <p>C The Contractor shall comply all times with the requirements of the Factory Act ( Cap 514 ), Building Construction Rules, Supplement 18, Legal Notice No. 40 dated 5th April, 1984 to ensure that the safety of his workpeople and authorized visitors to the site is protected at all times. In particular, there shall be proper provision of planked footways and guardrails scaffolding, etc., protection against falling materials and tools and the site shall be kept tidy and clear of dangerous rubbish. The Contractor shall appoint a <b>Safety Officer</b> as required by the Factory Act and notify the Factory inspector of his name. The safety officer shall be on site at all times and all directions given by the Architect to the safety officer shall be deemed to be Architect's instructions, and shall be complied with promptly without additional cost to the Contract.</p>	
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A	<p><b><u>PROTECTIVE CLOTHING</u></b></p> <p>The Contractor shall provide all protective or any other special clothing or equipment for his employees that may be necessary. This shall include, inter-alia, safety helmets, gloves, goggles, earmuffs, gum boots, overall, etc., according to the type of work. The Contractor shall ensure that safety helmets are worn by all Staff on site at all times.</p>	
B	<p><b><u>PROPRIETARY MATERIALS</u></b></p> <p>Where proprietary materials are specified here-in-after, the Contractor may propose the use of materials of other manufacture but of equal quality for approval by the Project Manager. All materials and goods where specified to be obtained from a particular manufacturer or supplier are to be used in accordance with their instructions.</p>	
C	<p><b><u>STANDARD FORMS</u></b></p> <p>Any tender with standard forms not filled as appropriate will be treated as non- responsive.</p>	
	<i>Carried to Collection</i>	

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	<p><b><u>PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEMENT</u></b></p> <p>The following are the insertions to be made in the appendix to the Contract Agreement: -</p> <p><b>Period of Final Measurement</b> 3 Months from Practical completion  <b>Defects Liability Period</b> 6 Months from practical completion  <b>Date for Possession</b> To be agreed with the Project Manager  <b>Date for Completion</b> 16 <i>Weeks</i> from date of Possession</p> <p><b>Liquidated and Ascertained</b> At the rate of <i>Kshs. 10,000.00</i> per week or part thereof</p> <p><b>Prime Cost Sums for which the Contractor desires to tender</b></p> <p><b>Period of Interim Certificates:</b> <i>Monthly</i> <b>Period of Honoring Certificates:</b> <i>30 days</i>  <b>Percentage of Certified Value Retained:</b> <i>10%</i> <b>Limit of Retention Fund:</b>  <i>5% retention release after practical certificate is issued</i></p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	KSHS
	<p><b><u>COLLECTION</u></b></p> <p>Brought Forward from page PP/1</p> <p>Brought Forward from page PP/2</p> <p>Brought Forward from page PP/3</p> <p>Brought Forward from page PP/4</p> <p>Brought Forward from page PP/5</p> <p>Brought Forward from page PP/6</p> <p>Brought Forward from page PP/7</p> <p>Brought Forward from page PP/8</p> <p>Brought Forward from page PP/9</p> <p>Brought Forward from page PP/10</p> <p>Brought Forward from page PP/11</p> <p>Brought Forward from page PP/12</p> <p>Brought Forward from page PP/13</p> <p>Brought Forward from page PP/14</p>	
	<p><b>PARTICULAR PRELIMINARIES</b></p> <p><b>TOTAL CARRIED TO GRAND SUMMARY PAGE 66</b></p>	



ITEM	DESCRIPTION	AMOUNT
	<p><b><u>GENERAL PRELIMINARIES</u></b></p> <p><b>A <u>PRICING OF ITEMS OF PRELIMINARIES</u></b></p> <p>Preliminaries to the contract are mandatory conditions and responsibilities the contractor is required to fulfill for the complete and proper execution of the contract. The contractor is advised to read and understand all his obligations under preliminaries. Should he find that fulfillment of any of the items will lead to him incurring any cost not covered under measured works he shall price such works accordingly otherwise failure to price any item will be construed to mean that the tenderer has included it in other priced items in the bills of quantities.</p> <p><b>B <u>SUPERVISION AND WORKING HOURS</u></b></p> <p>The works shall be executed under the direction and to the entire satisfaction in all respects of the "PROJECT MANAGER" who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor and sub-Contractors or other places where work is being prepared for the contract. The working hours shall be those generally worked by good employers in the in the Building and Civil Engineering trades in Kenya. No work shall be carried out at night or on gazetted holidays unless the "PROJECT MANAGER" shall so direct. No work shall be covered up nor shall any concreting be carried out in the in the absence of the Clerk of Works without prior approval of the "PROJECT MANAGER" in writing.</p> <p><b>C <u>SITE</u></b></p> <p>The term "the Site" wherever used hereinafter and in all Contract, Documents shall mean the lands and other places on, under or through which the works are to be executed or carried out and any other lands or places provided by the Employer for the purpose of the Contract. The Contractor is advised to visit the site and will be deemed to have acquainted himself with regard to the nature and position, means of access, risk of injury or damage to existing property, conditions under which the work will have to be carried out, the supply of and conditions affecting labour and the facilities for obtaining the articles of materials referred to in these Bills of Quantities. No claim by the Contractor will be allowed on the grounds of any such matter or otherwise. The Contractor must obtain the approval of the Architect regarding the use of any materials found on site.</p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	AMOUNT
A	<p><b><u>INSURANCE</u></b></p> <p>The Contractor shall insure as required in Condition No.15 of the Conditions of contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the "PROJECT MANAGER" either by production of an insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clause have been complied with in all respects. Thereafter the "PROJECT MANAGER" shall from time to time ascertain that the premiums are duly paid up by the Contractor, who, if called upon to do so, shall produce receipted premium renewals for the "PROJECT MANAGER" inspection.</p>	
B	<p><b><u>PAYMENT FOR MATERIALS ON SITE</u></b></p> <p>All materials for incorporation in the works must be stored on site before payment is effected, unless specifically exempted by the Project Manager. This is to include materials of the Contractor, nominated sub-Contractors and nominated suppliers.</p>	
C	<p><b><u>QUALITY OF THE WORKS</u></b></p> <p>The works should be of high quality and the contractor will be required to make samples of the work to be executed for approval by the PM before he commences the carrying out of the works. The contractor should allow for sample works in his rates accordingly. In case a sample does not meet the standards set by the PM, the contractor shall be expected to make another sample at his cost until it is approved by the PM.</p>	
D	<p><b><u>SAMPLES</u></b></p> <p>The Contractor shall furnish at his own cost any samples of materials or workmanship including concrete test cubes required for the works that may be required by the "PROJECT MANAGER" for his approval or rejection and any other samples in case of rejection until such samples are approved by the "PROJECT MANAGER" and he may reject any materials or workmanship not in his opinion to be up to the approved samples. The "PROJECT MANAGER" shall arrange for the testing of such materials as he may at his discretion deem desirable, but the testing shall be made at the expense of the Contractor and not at the expense of the "PROJECT MANAGER". The Contractor shall pay for the testing in accordance with the current scale of testing charges laid down by the Ministry of Roads Public Works &amp; Housing. The procedure for submitting samples of materials for testing and the method of marking for identification shall be as laid down by the "PROJECT MANAGER". The Contractor shall allow in his tender for such samples and tests except those in connection with nominated sub-contractors' work.</p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	AMOUNT
A	<p><b><u>EXISTING SERVICES</u></b>  Prior to the commencement of any work, the Contractor is to ascertain from the relevant authority the exact position, depth and level of all existing services in the area and he shall make whatever provisions may be required by the authorities concerned for the support, maintenance and protection of such services.</p>	
B	<p><b><u>PREVENTION OF ACCIDENT, DAMAGE OR LOSS</u></b>  The Contractor is notified that these works are to be carried out on a site where the Client is going on with other normal activities. The Contractor is instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of normal activities being carried out by the Client. The Contractor shall allow in his rates any expense he deems necessary by taking such care within the site.</p>	
C	<p><b><u>SECURITY OF WORKS ETC.</u></b>  The Contractor shall be entirely responsible for the security of all the works, stores, materials, plant, personnel, etc., both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection of the public.</p>	
D	<p><b><u>ACCESS TO SITE AND TEMPORARY ROADS.</u></b>  Means of access to the Site shall be agreed with the "PROJECT MANAGER" prior to commencement of the work and the Contractor must allow for building any necessary temporary access roads for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the Site. Upon completion of the works, the Contractor shall remove such temporary access roads; temporary culverts, bridges, etc., and make good and reinstate all works and surfaces disturbed to the satisfaction of the "PROJECT MANAGER"</p>	
E	<p><b><u>CLEARING AWAY</u></b>  The Contractor shall remove all temporary works, rubbish, debris and surplus materials from the site as they accumulate and upon completion of the works, remove and clear away all plant, equipment, rubbish, unused works and stains and leave in a clean and tidy state to the reasonable satisfaction of the "PROJECT MANAGER"</p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	AMOUNT
<p><b>A</b></p>	<p><b>WORKS TO BE DELIVERED UP CLEAN</b> Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings, glass inside and outside and any other parts of the works and remove all marks, blemishes, stains and defects from joinery fittings and decorated surfaces generally, polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the "PROJECT MANAGER."</p>	
<p><b>B</b></p>	<p><b><u>EXCEPTION TO THE STANDARD METHOD OF MEASUREMENT</u></b> Attendance Clause B19(a) of the Standard Method of Measurement is and the following clause is substituted: -</p> <p>Attendance on nominated Sub-Contractors shall be given as an item in and shall be deemed to include: allowing use of standing scaffolding, messrooms, sanitary conditions and welfare facilities; provision of special scaffolding where necessary, office accommodation and for storage of plant and materials; providing light and water for their work: clearing away rubbish; unloading checking and hoisting: providing electric power: and removing and replacing duct covers, pipe casings and and the like necessary for the execution and testing of Sub- Contractors' work and being responsible for the accuracy of the same.</p> <p><b><u>Fix Only: -</u></b> "Fix Only" shall mean take delivery at nearest railway station (unless otherwise stated), pay all demurrage charges, load and transport to site where necessary, unload, store, unpack, assemble as necessary, distribute to position, hoist and fix only.</p>	
<p><b>C</b></p>	<p><b><u>ALTERATIONS TO BILLS. PRICING. ETC.</u></b> Any unauthorized alteration or qualification made to the text of the Bills of Quantities may cause the Tender to be disqualified and will in any case be ignored. The Contractor shall be deemed to have made allowance in his prices generally to cover any items against which no price has been inserted in the Bills of Quantities. All items shall be priced in detail and the Tenders containing Lump Sums to cover trades or groups of work must be broken down to show the price of each item before they will be accepted.</p>	
	<p><i>Carried to Collection</i></p>	

ITEM	DESCRIPTION	AMOUNT
<p><b>A</b></p>	<p><b><u>PROVISIONAL SUMS.</u></b></p> <p>The term "Provisional Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7(i) of the Standard Method of Measurements. Such sums are net and no addition shall be made to them for profit.</p>	
<p><b>B</b></p>	<p><b><u>PRIME COST (OR P.C.) SUMS.</u></b></p> <p>The term "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurements. Persons or firms nominated by the "PROJECT MANAGER" to execute work or to provide and fix materials or goods as stated in Condition No. 8 of the Conditions of Contract are described herein as Nominated Sub-Contractors. Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers.</p>	
<p><b>C</b></p>	<p><b><u>ADJUSTMENT OF P.C. SUMS.</u></b></p> <p>In the final account all P.C. Sums shall be deducted and the amount properly expended upon the P.M's order in respect of each of them added to the Contract sum. The Contractor shall provide to the "PROJECT MANAGER" such quotations, invoices or bills, properly receipted, as may be necessary to show the actual details of the sums paid by the Contractor. Items of profit upon P.C. Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" (as previously described) following P.C. Sums shall be adjusted pro-rata to the physical extent of the work executed (not pro-rata to the amount paid) and this shall apply even though the Contractor's priced Bill shows a percentage in the rate column in respect of them.</p> <p>Should the Contractor be permitted to tender and his tender be accepted of any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a Nominated Sub-Contractor.</p>	
<p><b>D</b></p>	<p><b><u>ADJUSTMENT OF PROVISIONAL SUMS.</u></b></p> <p>In the final account all Provisional Sums shall be deducted and the value of the work properly executed in respect of them upon the "PROJECT MANAGERS" order added to the contract Sum. Such work shall be valued as described for variations in condition No. 22 of the conditions of Contract, but should any part of the contract be executed by a nominated Sub-Contractor, or any articles for the Work be supplied by a Nominated Supplier, the value of such work or articles shall be treated as P.C. P.C. Sum and profit and attendance comparable to that contained in the priced Bills of Quantities for similar items added.</p>	
	<p><i>Carried to Collection</i></p>	

ITEM	DESCRIPTION	AMOUNT
<p><b>A</b></p>	<p><b><u>PROVISIONAL WORK</u></b>  All work described as "Provisional" in these Bills of Quantities is subject to remeasurement in order to ascertain the actual quantity executed for which payment will be made. All "Provisional" and other work liable to adjustment under this contract shall be left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the "PROJECT MANAGER" Immediately the work is ready for measuring, the Contractor shall give notice to the "PROJECT MANAGER" If the Contractor makes default in these respects he shall, if the "PROJECT MANAGER" so directs, uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense.</p>	
<p><b>B</b></p>	<p><b><u>NOMINATED SUB-CONTRACTORS</u></b>  When any work is ordered by the "PROJECT MANAGER" to be executed by nominated sub-contractors, the Contractor shall enter into sub-contracts as described in Condition No 8 of the Conditions of Contract and shall thereafter be responsible for such sub-contractors in every respect. Unless otherwise described the Contractor is to provide for such Sub-Contractors any or all of the facilities described in these Preliminaries. The Contractor should price for these with the nominated Sub-contract contractor's work concerned in the P.C. Sums under the description "Add for Attendance".</p>	
<p><b>C</b></p>	<p><b><u>NOMINATED SUPPLIERS</u></b>  The cost of "<b>fix only</b>" materials to be obtained from Nominated Suppliers which are covered by Prime Cost or Provisional Sums shall include for taking delivery where directed, checking with invoices or idents, reporting and claiming damages for shortages and damaged goods, defraying demurrage, signing for as having been received in good order, transporting, unloading, storing, covering and protecting until the time of fixing, unpacking, replacing anything lost or damaged, sorting, assembling, hoisting to required levels and fixing as described.  Before placing any orders with Nominated Sub-Contractors or Nominated Suppliers the Contractor must ascertain that the terms and conditions of the quotations and the dates of delivery of materials or execution of works comply with the terms of Contract and the Progress Schedule.</p>	
<p><b>D</b></p>	<p><b><u>DIRECT CONTRACTS</u></b>  Notwithstanding the foregoing conditions, the Government reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C. Sum in the Bills of Quantities and to pay for the same direct. In the instances, profit relative to the P.C. Sum the priced Bills of Quantities will be adjusted as described for P.C. Sums and allowed.</p>	
	<p><i>Carried to Collection</i></p>	

ITEM	DESCRIPTION	AMOUNT
A	<p><b><u>ATTENDANCE UPON OTHER TRADESMEN, ETC.</u></b>  The Contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this Contract every facility for carrying out their work and also for use of his ordinary scaffolding. The Contractor, however, shall not be required to erect any special scaffolding for them. The Contractor shall perform such cutting away for and making good after the work of such tradesmen or persons as may be ordered by the "PROJECT MANAGER" and the work will be and measured and paid for to the extent executed at rates provided in these bills.</p>	
B	<p><b><u>GENERAL SPECIFICATION.</u></b>  For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works General Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be followed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in these Bills of Quantities.</p>	
C	<p><b><u>PLANT, TOOLS AND VEHICLES</u></b>  Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub-Contractors as described herein. No timber used for formwork, scaffolding or temporary works of any kind shall be used afterwards in the permanent work.</p>	
D	<p><b><u>MATERIALS AND WORKMANSHIP</u></b>  All materials and workmanship used in the execution of the works shall be of the best quality and description unless otherwise described. Any materials condemned by the Architect shall be immediately removed from site at the Contractor's expense. The standard of workmanship shall not be inferior to the current British codes of practice and / or equivalent Kenya Building Standards. No materials for use in the permanent construction are to be used for any temporary or other purpose other than that for which they are provided.</p>	
	<i>Carried to Collection</i>	

ITEM	DESCRIPTION	AMOUNT
<p>A</p> <p>B</p> <p>C</p> <p>D</p>	<p><b><u>MATERIALS ON SITE</u></b></p> <p>All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected unless specifically exempted by the "PROJECT MANAGER". This is to include the materials of Main Contractor, and Nominated Sub-Contractors Suppliers.</p> <p><b><u>MATERIALS ARISING FROM EXCAVATIONS</u></b></p> <p>Materials of any kind obtained from the excavations shall be the property of the Government Unless the "PROJECT MANAGER "directs otherwise such materials shall be dealt with as provided in the Contract. Such materials shall only be used in the works, in substitution of materials which the Contractor would otherwise have had to supply with the written permission of the "PROJECT MANAGER". Should such permission be given, the Contractor shall make due allowance for the value of the materials so used at a price to be agreed.</p> <p><b><u>SIGN FOR MATERIALS SUPPLIED.</u></b></p> <p>The Contractor will be required to sign a receipt for all articles and materials supplied by the "PROJECT MANAGER" at the time of taking delivery thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and replacements of any such loss or damage with articles and/or materials which will be supplied by the "PROJECT MANAGER" at the current market prices including Customs Duty and V.A.T., all at the Contractor's own cost and expense, to the satisfaction of the "PROJECT MANAGER"</p> <p><b><u>STORAGE OF MATERIALS</u></b></p> <p>The Contractor shall provide at his own risk and cost where directed on the site weatherproof lockup sheds for the safe storage and custody of materials for the works and for the use of workmen engaged thereon and shall remove such sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the "PROJECT MANAGER". Nominated Sub-Contractors are to be made liable for the cost of any storage accommodation provided especially for their use.</p> <p><b><u>MATERIALS FROM DEMOLITIONS</u></b></p> <p>Any materials from demolitions and not re-used shall become the property of the Client/User. The Contractor shall allow in his rates for the cost of transporting, storing and securing the materials on site as directed by the "PROJECT MANAGER"</p>	
	<i>Carried to Collection</i>	



ITEM	DESCRIPTION	AMOUNT
	<p><b><u>COLLECTION</u></b></p> <p>Brought Forward from page GP/1</p> <p>Brought Forward from page GP/2</p> <p>Brought Forward from page GP/3</p> <p>Brought Forward from page GP/4</p> <p>Brought Forward from page GP/5</p> <p>Brought Forward from page GP/6</p> <p>Brought Forward from page GP/7</p> <p>Brought Forward from page GP/8</p>	
	<p><b>TOTAL GENERAL PRELIMINARIES CARRIED TO GRAND SUMMARY</b></p>	

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BUILDERS WORKS; <u>FISH PRODUCTION AREA</u>				
	<b><u>ELEMENT NO. 1</u></b>				
	<b><u>SUBSTRUCTURES (ALL PROVISIONAL)</u></b>				
	<b>NOTE; (I) All work measured under this element is up to and including the floor slab but excluding the finishes</b>				
	<b><i>Site Clearance</i></b>				
A	Clear the site of all bush shrub undergrowth and small trees grub up roots and cart away or burn all arising	222	SM		
	<b><u>Excavations and earthworks</u></b>				
B	Reduce level to remove top vegetable soil average 200mm deep and spread as directed on site	222	SM		
C	Excavate for strip foundation trenches not exceeding 1.5 meters deep commencing from stripped level	70	CM		
D	Extra over excavations for excavating in rock IRRESPECTIVE OF CLASS	10	CM		
F	Allow for keeping excavations free from mud and all water including spring and running water by pumping piling or other approved means.	1	ITEM		
G	Allow for planking and strutting to sides of excavations	1	ITEM		
	<b><u>Disposal</u></b>				
H	Load surplus excavated material and cart away	28	CM		
	<b><u>Filling</u></b>				
J	Return fill and ram selected excavated material around foundations.	16	CM		
Carried to Collections page 4					

EM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Hardcore as described</u></b>				
A	300mm Thick layer approved hardcore filling including leveling and consolidating in 150mm layers	67	CM		
	<b><u>Blinding</u></b>				
B	50mm Thick quarry dust blinding on surfaces of hardcore	222	SM		
C	<b><u>Insecticide treatment</u></b>				
D	'TERMIDOL' or other equal and approved chemical insecticide treatment prepared and applied according to the manufacturer's printed instructions.	222	SM		
E	1000-gauge polythene sheeting lay under concrete floor bed.	222	SM		
	<b><u>In-situ concrete work Mass concrete (1:3:6/15-38mm aggregate)</u></b>				
F	50mm thick blinding under strip foundation	70	SM		
	Carried to Collections page 4				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Vibrated reinforced concrete (1:1.5:3/25-20mm aggregate) as described in:</u></b>				
A	Strip footing	14	CM		
B	100mm Thick ground floor slab	222	SM		
	<b><u>Steel reinforcement</u></b>				
	<b><u>Mesh reinforcement</u></b>				
C	B.R.C A142, steel mesh fabric reinforcement weighing,2.22 kg/m2, measured net including end and side laps	222	SM		
	<b>Supply and fix steel bars reinforcement including bending, hooks, tying wire, cutting, spacer blocks and supporting all in position as described.</b>				
	High tensile ribbed bars (Provisional)				
D	<b>Assorted rebar's (8 - 20mm diameter)</b>	1404	KG		
	<b><u>Sawn formwork as described to:</u></b>				
E	Edges of slab 75 - 150mm girth high	79	LM		
	<b><u>Foundation walling</u></b>				
	Approved load bearing medium chiseled dressed natural stone walling bedded and jointed in cement sand (1:3)				
F	200mm thick reinforced with and including 20swg x 25mm wide hoop iron in every alternate course	94	SM		
Carried to Collections page 4					

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Horizontal damp proof course; one layer of 3 - ply bituminous felt or other equal and approved (measured net - allow for laps)</u></b>				
A	200mm wide leveled and bedded in cement and sand (1:3) mortar under walls	124	LM		
	<b><u>Plinth area finishes</u></b>				
B	12mm thick cement and sand (1:3) wood float render to plinth	32	SM		
C	Prepare and apply three coats black bitumastic paint to rendered area	32	SM		
	<b><u>Precast paving slabs (Around the building &amp; court yard)</u></b>				
D	Excavate on normal soil not exceeding 300mm deep; backfill with murrum to form base to receive PCC paving slabs (m/s) and cart away arising	47	SM		
E	Approved weed killer applied according to manufacturer's instructions	47	SM		
F	"Premise 200" Anti-termite treatment to murrum	47	SM		
G	600 x 600 x 50mm thick PCC slabs on and including 50mm sand bed jointed and pointed in cement sand 1:3 mortar	47	SM		
	Carried to Collections				
	<b><u>COLLECTION</u></b> Brought Forward from Page 1  Brought Forward from Page 2  Brought Forward from Page 3  Brought Down from Above				
	TOTAL FOR ELEMENT NO. 1 SUBSTRUCTURES CARRIED TO COLLECTION PAGE 12				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b>ELEMENT NO.2</b>				
	<b>REINFORCED CONCRETE FRAME</b>				
	<i>Vibrated reinforced concrete (1:11/ :3/25-20mm aggregate) as described in:</i>				
A	Beams/Column  <u>Supply and fix steel bars reinforcement including bending, hooks, tying wire, cutting, spacer blocks and supporting all in position as described.</u>  <b>High tensile ribbed bars (Provisional)</b>	9	CM		
B	Assorted rebar's (8 - 20mm diameter)  <b>Formwork as described to;(NB: Rate should be inclusive of a fair face finish to concrete surfaces)</b>	900	KG		
C	Side and soffits of beams  <b>WALLING</b>  <b>External /Internal walls</b> <b>Approved load bearing medium chiseled dressed natural stone walling bedded and jointed in cement sand (1:3)</b>	84	SM		
D	200mm thick reinforced with and including 20swg x 25mm wide hoop iron in every alternate course	351	SM		
<b>TOTAL FOR ELEMENT NO 2 R.C SUPERSTRUCTURE PAGE 12</b>					

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<p><b><u>ELEMENT NO. 3</u></b>  <b><u>WALLING</u></b></p> <p><b><u>External /Internal walls</u></b></p> <p><b><u>Wall finishes</u></b>  <b><u>12mm thick cement and sand (1:3) wood float finish,</u></b>  <b><u>as described to: -</u></b></p> <p>B Wall surfaces 702 SM</p> <p><b><u>Painting and decorations</u></b>  <b><u>Prepare and apply one undercoat and two finishing</u></b>  <b><u>coats gloss paint on: -</u></b></p> <p>C Plastered surfaces 702 SM</p>				
	WALLING TO COLLECTION PAGE 12				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
A	<p><b><u>ELEMENT NO. 4</u></b>  <b><u>FLOOR FINISHES</u></b></p> <p><b><u>In situ cement and sand (1:3) screed beds, with wood trowelled finish, on concrete</u></b></p> <p>30mm screed finished smooth with steel float and red oxide.</p>	222	SM		
	TOTAL FOR ELEMENT NO. 7 FLOOR FINISHES CARRIED TO COLLECTION PAGE 12				



ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b>ROOFING COVERING ELEMENT 3</b>				
	<u>ROOF COVERING.</u>				
A	Approved Gauge 28 Aluminium 'Roman tile coloured' roofing sheets as 'Kaluworks' or other equal and approved including fixing to purlins to Architect's approval	273	SM		
B	Ditto; ridge capping to match - 600mm girth	0	LM		
D	100 x 50mm trussed rafter, hip/valley/king post/Tie beam	120	LM		
E	75 x 50mm purlins	270	LM		
<b>Total for roofing carried to collection page 12</b>					

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<p><u>ELEMENT NO. 10</u></p> <p><u>WINDOWS</u></p> <p><b>Casement Windows</b></p> <p>Approved casement window comprising of 25mm square tube purlin and flat plate welded together. 6mm thick clear glass (m.s);</p> <p>A 1200 x 1200 mm high</p> <p>B 600 x 600 mm high</p> <p>C 5mm thick clear glass jointed with putty and silicone</p>	<p>14</p> <p>3</p> <p>21</p>	<p>NO</p> <p>NO</p> <p>SM</p>		
	<p>TOTAL FOR ELEMENT NO. 10 WINDOWS CARRIED TO COLLECTION PAGE 12</p>				

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>RATE</u>	<u>AMOUNT</u>
	<b><u>ELEMENT NO. 11</u></b>				
	<b><u>Doors</u></b>				
A	Steel casement double leaf panel door in two equal leaf overall size 1150x2000mm high with 1150x400mm fan lights at top left open for glazing fixed with mahogany beads (both sides m/s); each leaf comprising of 150x50mm top rail and stiles, 200x50 middle	6	NO		
B	Ditto single leaf overall size 900x2000 mm high with 900 x 300mm fan lights at top left open for glazing ditto	3	NO		
	<b><u>Flush doors:</u></b>				
C	50mm thick semi solid core flush door size 900 x 2100mm high faced with interior 4mm thick mahogany veneer both sides hardwood lipped all round in mahogany.	6	NO		
	<b><u>Wrot mahogany backs primed before fixing in aluminium wood primer:</u></b>				
D	100 x 50 mm frame primed back once rebated	31	LM		
E	45 x 25 mm architrave with one labour	31	LM		
F	25mm quadrant	31	LM		
	<b><u>Ironmongery as per Union Catalogue</u></b>				
A	Double cylinder lock set for double door with satin anodized aluminium set of lever furniture. Ref. Elegance LS-C85-306	6	NO		
E	100 mm stainless steel bearing butt hinges. Ref. BB-403030-	9	prs		
	Total carried to collection page 11				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b>Prepare and apply three coats varnish to: -</b>				
A	Timber door general surfaces	23	SM		
B	Ditto 100 to 200mm girth.	30	LM		
C	Gloss paint to steel doors	42	SM		
Total carried to collection page					
<p data-bbox="220 726 448 758"><u>COLLECTION PAGE</u></p> <p data-bbox="220 789 586 821">Brought forward from page 10</p> <p data-bbox="220 873 578 905"><b>Brought forward from above</b></p>					
Total for doors carried to collection page 12					

EM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b>BUILDERS WORKS COLLECTION PAGE</b>		<u>page</u>		
1	SUBSTRUCTURES		16		
2	R.C SUPERSTRUCTURES		17		
3	WALLING,		18		
4	INTERNAL/ EXTERNAL WALL FINISHES		19		
5	FLOOR FINISHES		20		
6	ROOFING AND RAIN WATER DISPOSAL		21		
7	WINDOWS		22		
8	DOORS		11		
	Total carried to grand summary page 66				

## TUITION BLOCK, FISH AND SPIRULINA PROCESSING AREA

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>BUILDERS WORKS FOR TUITION BLOCK</u></b>				
	<b><u>ELEMENT NO. 1</u></b>				
	<b><u>SUBSTRUCTURES (ALL PROVISIONAL)</u></b>				
	<b>NOTE; (I) All work measured under this element is up to and including the floor slab but excluding the finishes</b>				
	<b><i>Site Clearance</i></b>				
A	Clear the site of all bush shrub undergrowth and small trees grub up roots and cart away or burn all arising	222	SM		
	<b><u>Excavations and earthworks</u></b>				
B	Reduce level to remove top vegetable soil average 200mm deep and spread as directed on site	222	SM		
C	Excavate for strip foundation trenches not exceeding 1.5 meters deep commencing from stripped level	70	CM		
D	Extra over excavations for excavating in rock IRRESPECTIVE OF CLASS	10	CM		
F	Allow for keeping excavations free from mud and all water including spring and running water by pumping piling or other approved means.	1	ITEM		
G	Allow for planking and strutting to sides of excavations	1	ITEM		
	<b><u>Disposal</u></b>				
H	Load surplus excavated material and cart away	28	CM		
	<b><u>Filling</u></b>				
J	Return fill and ram selected excavated material around foundations.	16	CM		

	Total carried to collection page 17				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Hardcore as described</u></b>				
A	300mm Thick layer approved hardcore filling including leveling and consolidating in 150mm layers	67	CM		
	<b><u>Blinding</u></b>				
	-				
B	50mm Thick quarry dust blinding on surfaces of hardcore	222	SM		
	<b><u>Insecticide treatment</u></b>				
	'TERMIDOL" or other equal and approved chemical insecticide treatment prepared and applied according to the manufacturer's printed instructions.				
D		222	SM		
E	1000-gauge polythene sheeting lay under concrete floor bed.	222	SM		
	<b><u>In-situ concrete work Mass concrete (1:3:6/15-38mm aggregate)</u></b>				
F	50mm thick blinding under strip foundation	70	SM		



	Carried to Collections page 17				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Vibrated reinforced concrete (1:1.5:3/25-20mm aggregate) as described in:</u></b>				
A	Strip footing	14	CM		
B	100mm Thick ground floor slab	222	SM		
	<b><u>Steel reinforcement</u></b>				
	<u>Mesh reinforcement</u>				
C	B.R.C A142, steel mesh fabric reinforcement weighing 2.22 kg/m <sup>2</sup> , measured net including end and side laps	222	SM		
	<b>Supply and fix steel bars reinforcement including bending, hooks, tying wire, cutting, spacer blocks and supporting all in position as described.</b>				
	High tensile ribbed bars (Provisional)				
D	<b>Assorted rebar's (8 - 20mm diameter)</b>	1404	KG		
	<b><u>Sawn formwork as described to:</u></b>				
E	Edges of slab 75 - 150mm girth high	79	LM		
	<b><u>Foundation walling</u></b>				
	Approved load bearing medium chiseled dressed natural stone walling bedded and jointed in cement sand (1:3)				
F	200mm thick reinforced with and including 20swg x 25mm wide hoop iron in every alternate course	94	SM		

	Carried to Collections page 17				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Horizontal damp proof course; one layer of 3 - ply bituminous felt or other equal and approved (measured net - allow for laps)</u></b>				
A	200mm wide leveled and bedded in cement and sand (1:3) mortar under walls	124	LM		
	<b><u>Plinth area finishes</u></b>				
B	12mm thick cement and sand (1:3) wood float render to plinth	32	SM		
C	Prepare and apply three coats black bitumastic paint to rendered area	32	SM		
	<b><u>Precast paving slabs (Around the building &amp; court yard)</u></b>				
D	Excavate on normal soil not exceeding 300mm deep; backfill with murrum to form base to receive PCC paving slabs (m/s) and cart away arising	47	SM		
E	Approved weed killer applied according to manufacturer's instructions	47	SM		
F	"Premise 200" Anti-termite treatment to murrum	47	SM		
G	600 x 600 x 50mm thick PCC slabs on and including 50mm sand bed jointed and pointed in cement sand 1:3 mortar	47	SM		
	Carried to Collections				
	<b><u>COLLECTION</u></b>				
	Brought Forward from Page 14				
	Brought Forward from Page 15				
	Brought Forward from Page 16				
	Brought Down from Above				

	TOTAL FOR ELEMENT NO. 1 SUBSTRUCTURES CARRIED TO COLLECTION PAGE 25				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>ELEMENT NO.2</u>				
	<b><u>REINFORCED CONCRETE FRAME</u></b>				
	<i><u>Vibrated reinforced concrete (1:11/ :3/25-20mm aggregate) as described in:</u></i>				
A	Beams/Column  <u>Supply and fix steel bars reinforcement including bending, hooks, tying wire, cutting, spacer blocks and supporting all in position as described.</u>	9	CM		
	<b>High tensile ribbed bars (Provisional)</b>				
B	Assorted rebar's (8 - 20mm diameter)	900	KG		
	<b><u>Formwork as described to;(NB: Rate should be inclusive of a fair face finish to concrete surfaces)</u></b>				
C	Side and soffits of beams	84	SM		
	<b><u>WALLING</u></b>				
	<b><u>External /Internal walls</u></b>				
	<b>Approved load bearing medium chiseled dressed natural stone walling bedded and jointed in cement sand (1:3)</b>				
D	200mm thick reinforced with and including 20swg x 25mm wide hoop iron in every alternate course	351	SM		

	-				
	TOTAL FOR ELEMENT NO 2 R.C SUPERSTRUCTURE PAGE 25				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>ELEMENT NO. 3</u></b> <b><u>WALLING</u></b>  <b><u>External /Internal walls</u></b>  <b><u>Wall finishes</u></b> <b><u>12mm thick cement and sand (1:3) wood float finish,</u></b> <b><u>as described to: -</u></b>				
B	Wall surfaces	702	SM		
	<b><u>Painting and decorations</u></b> <b><u>Prepare and apply one undercoat and two finishing</u></b> <b><u>coats gloss paint on: -</u></b>				
C	Plastered surfaces	702	SM		

	WALLING TO COLLECTION PAGE 25				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
A	<p><b><u>ELEMENT NO. 4</u></b> <b><u>FLOOR FINISHES</u></b></p> <p><b><u>Insitu cement and sand (1:3) screed beds, with wood trowelled finish, on concrete</u></b></p> <p>30mm screed finished smooth with steel float and red oxide.</p>	222	SM		

	TOTAL FOR ELEMENT NO. 4 FLOOR FINISHES CARRIED TO COLLECTION PAGE 25				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>ROOFING COVERING</u></b> <b><u>ELEMENT 5</u></b> - <b><u>ROOF COVERING.</u></b>				
A	Approved Gauge 28 Aluminium 'Roman tile coloured' roofing sheets as 'Kaluworks' or other equal and approved including fixing to purlins to Architect's approval	273	SM		
B	Ditto; ridge capping to match - 600mm girth	0	LM		
D	100 x 50mm trussed rafter, hip/valley/king post/Tie beam	120	LM		
E	75 x 50mm purlins	270	LM		
F	200 x 25 mm Facia board	18	SM		

	Total for Roofing Carried to Collections page 25				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<p><u>ELEMENT NO. 6</u></p> <p><u>WINDOWS</u></p> <p><b>Aluminium Casement Windows</b></p> <p>Approved window with 25mm diameter square purlin and flat bar jointed and welded 6mm thick clear glass (m.s); oiling, easing and adjusting as</p>				
A	1200 x 1200 mm high	14	NO		
B	600 x 600 mm high	3	NO		
C	5mm thick clear glass jointed with putty and silicone	21	SM		

	TOTAL FOR ELEMENT NO. 6 WINDOWS CARRIED TO COLLECTION PAGE 25				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>ELEMENT NO. 7</u></b>				
	<b><u>Doors</u></b>				
A	Steel casement double leaf panel door in two equal leaf overall size 1150x2000mm high with 1150x400mm fan lights at top left open for glazing fixed with mahogany beads (both sides m/s) ;each leaf comprising of 150x50mm top rail and stiles, 200x50 middle	6	NO		
B	Ditto single leaf overall size 900x2000 mm high with 900 x 300mm fan lights at top left open for glazing ditto	3	NO		
	<b><u>Flush doors:</u></b>				
	-				
C	50mm thick semi solid core flush door size 900 x 2100mm high faced with interior 4mm thick mahogany veneer both sides hardwood lipped all round in mahogany.	6	NO		
	<b><u>Wrot mahogany backs primed before fixing in aluminium wood primer:</u></b>				
D	100 x 50 mm frame primed back once rebated	31	LM		
E	45 x 25 mm architrave with one labour	31	LM		
F	25mm quadrant	31	LM		
	<b><u>Ironmongery as per Union Catalogue</u></b>				
A	Double cylinder lock set for double door with satin anodized aluminium set of lever furniture. Ref. Elegance LS-C85-306	6	NO		



E	100 mm stainless steel bearing butt hinges. Ref. BB-403030-	9	prs		
Total carried to collection page 25					
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Prepare and apply three coats varnish to: -</u></b>				
A	Timber door general surfaces	23	SM		
B	Ditto 100 to 200mm girth.	30	LM		
C	Gloss paint to steel doors	42	SM		
	-				
Total carried to collection page					
<u>COLLECTION PAGE</u> Brought forward from page 23 Brought forward from above					

	TOTA CARRIED TO COLLECTION FOR ELEMENT NO. 7 DOOR PAGE 25				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BUILDERS WORKS COLLECTION PAGE				
1	SUBSTRUCTURES	page	17		
2	R.C SUPERSTRUCTURES	page	18		
3	WALLING, EXTERNAL and INTERNAL FINISHES	page	19		
4	FLOOR FINISHES	page	20		
5	ROOFING AND RAIN WATER DISPOSAL	page	21		
6	WINDOWS	page	22		
7	DOORS	page	24		

	Total for tuition block, fish and spirulina processing area carried to grand summary page 66				

## BOREHOLE DRILLING

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<p><b>GEOTECHNICAL SURVEY</b></p> <p>Allow a sum for carrying out a geotechnical survey to ascertain the position to be drilled, expected quantity of water and all information related to sufficient and continuous supply of water</p>	1	SUM		
B	<p><b>MOBILIZATION</b></p> <p>Allow a sum for mobilization of whole drilling equipment, personnel, consumables, etc. to the drilling site</p>	1	SUM		
C	Ditto but demobilization on completion	1	SUM		

<b>TOTAL BILL NO. 1 CARRIED TO COLLECTION PAGE 29</b>					
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE</b>	<b>KSHS</b>
	<b>BOREHOLE DRILLING</b>				
A	Prepare and drill 254mm diameter bore from ground level to 100 meters deep (provisional)	40	LM		
B	Allow for use of 254mm diameter service casing to avoid borehole collapse or loose of circulation	30	LM		
C	Ditto but slotted steel casing	10	LM		
D	Supply and installation of 2-4mm gravel	8	TON		
E	Allow for Borehole development injection to clean up borehole profile	4	HRS		
F	Allow for 4litres water sample for full chemical bacteriological analysis	1	NO		
G	Borehole concrete slab to accommodate the hand an serial number engraving as required	1	SUM		
H	Allow for testing and commissioning	12	HRS		
J	Recovery test	1	ITEM		
	<b><u>PUMP</u></b>				

K	Supply, fix and commission a submersible pump capable of operating a suction of 100meters deep, flow rate of 10cubic meters per hour, operate on saline water, to be three phase and complete with all accessories. All be PEDROLLO or equal approved	1	NO		
L	Allow for securing of the pump equipment	1	NO		
M	Control panel	1	NO		
N	Float switch	2	NO		
TOTAL BILL NO. 2 CARRIED TO COLLECTION PAGE 29					
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE</b>	<b>KSHS</b>
	<b><u>COLLECTION PAGE</u></b>				
A	Brought forward from page 27				
B	Brought forward from page 28				

	TOTAL FOR BORE HOLE DRILLING CARRIED TO GRAD SUMMARY PAGE 66				

WATER TOWER





ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	SUBSTRUCTURES				
	(ALL PROVISIONAL)				
A	Excavate oversite average 150mm deep and cart away as directed	7	SM		
B	Bulk excavation to reduce levels starting from stripped level not exceeding 1.5 meters deep	10	CM		
C	Ditto for column bases	32	CM		
E	Allow for keeping excavations free from all water by pumping	1	ITEM		
F	Allow for planking and strutting sides of excavation	1	ITEM		
	<b>Filling and carting away</b>				
E	Return, fill and ram with selected and approved excavated material around excavations	20	CM		
F	Load and cart away excavated materials from site	16	CM		
G	Approved murrum fillings backfill to make up levels and compact in 150 mm layers: selected excavated materials.	1	CM		
H	Hardcore filling in making up levels, exceeding 300mm thick in layers of 150mm maximum thickness.	3	CM		
J	50mm thick mass concrete class Q (1:3:6) to bottoms of foundations and bases	18	SM		
	<b>Vibrated reinforced concrete grade 25/20 (1:1/1/2:3 in:</b>				
K	Column bases /strip	7	CM		
K	Columns	1	CM		
L	Ground beam	1.2	CM		
M	Base slab	10	SM		

Total to collection below page 33					
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Sawn formwork to:</u></b>				
A	Columns	13	SM		
B	Beams	10	SM		
	Steel reinforcement as described including cutting to length, bending and fixing including all necessary tying wires and spacing blocks (all provisional)				
C	20 mm diameter bars	300	KG		
D	16 mm diameter bars	300	KG		
E	12 mm diameter bars	300	KG		
F	8 mm diameter bars	400	KG		
	20mm thick render (1:3) in two coats with fair finish with wood float				
G	To external sides of ground beam	30	SM		
H	1000-gauge dpm to the floor	9	SM		
J	142-gauge wire mesh	9	SM		
	<b>Foundation walling</b>				
	200mm thick rough chisel dressed natural stone walling bedded and jointed in cement and sand (1:3) mortar and reinforced with and including 20swg x 25mm wide hoop iron in every alternate course				
K		18	SM		
	<b>Plinth area finishes</b>				
M	12mm Thick cement and sand (1:3) wood float render to plinth area	40	SM		
L	Prepare and apply three coats black bitumastic paint to rendered area	40	SM		
	<b><u>FLOOR FINISHES</u></b>				
N	30mm thick cement and sand (1:3) finish smooth with wood float	9	SM		

Total to collection below page 33					
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	COLLECTION				
1	Brought Forward from page 31				
2	Brought Forward from page 32				

Total for substructure works carried to collection page 36					
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
<b>RC SUPERSTRUCTURE</b>					
<b>Vibrated reinforced concrete grade 25/20 (1:2:4) in:</b>					
A	Columns	3	CM		
B	Beams	1	CM		
C	Suspended slab	12	SM		
<b>Sawn formwork to:</b>					
D	Columns	7	SM		
E	Beams	10	SM		
F	Soffits of suspended slab	12	SM		
Steel reinforcement as described including cutting to length, bending and fixing including all necessary tying wires and spacing blocks (all provisional)					
H	16 mm diameter bars	300	KG		
J	12mm diameter bars	140	KG		
K	8 mm diameter bars	260	SM		
<b><u>Mild Steel Ladder</u></b>					
L	500mm wide comprising 75 x 50 x 4mm thick main members, 50 x 50 x 3mm thick cross member, welded and fixed to concrete column, painted in one under coat red oxide and two finish coats of metal paint to approval	4	LM		

	Total for carried to collection page 35				
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>Ventilation Walling window vent</u></b>				
	<b><u>FINISHES Wall finishes</u></b>				
	-				
	<b><u>Plaster; 12mm thick 2 No. coat work, 9mm first coat of cement sand (1:6); 3mm second coat of cement and lime putty (1:10); steel trowelled to concrete</u></b>				
A	Walls; internal	14	SM		
B	Ditto to surfaces and soffit of suspended slab	24	SM		
C	Ditto to sides of column and Beams	25	SM		
	<b><u>Painting and decorations</u></b>				
	<b><u>Prepare and apply three coats of first quality plastic emulsion paint to: -</u></b>				
	-				
E	Plastered surfaces and soffit of suspended slab	24	SM		
	-				
F	Wall, columns and beams external	30	SM		
	COLLECTION PAGE				
	<b><u>SUPER STRUCTURE WORKS COLLECTION</u></b>				
	Brought from page 34				
	Brought from above				

	<b>Super structure and finishes carried to collection page 36</b>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>COLLECTION PAGE</u></b>				
A	TOTAL FOR SUBSTRUCTURE WORKS	PEGE	33		
B	TOTAL FOR SUPERSTRUCTRE AND FINISHES WORKS	PAGE	35		

	<b>TOTAL FOR WATER TOWER CARRIED TO GRAND SUMMARY PAGE 66</b>				

## SEPTIC AND SOAK TANK

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<b><u>SEPTIC TANK</u></b>				
A	Excavation pit for septic tank n.e. 1.5m deep)	CM	25		
B	Ditto between 1.5m and 3.0m deep)	CM	25		
C	Ditto between 3.0m and 4.5m deep)	CM	25		
D	Return fill and ram	CM	14.4		
E	Cart away surplus material	CM	60		
F	Planking & strutting to sides of excavations	ITEM	1		
G	Keep excavations free from general waters	ITEM	1		
H	Provide lay & vibrated conc. 1:3:6 to base	CM	17		
J	Provide materials & erect 2000mm thick masonry wall in cement mortar 1:4	SM	92		
K	Provide formwork to soffit of suspended slab exceeding 3m high	SM	15		
L	Ditto to edge 150-225mm high	LM	15		
M	Make or leave dia. 150mm hole & build in dia 200mm pipe	NO	4		
N	Provide & apply 12mm thick water proof plaster	SM	102		
O	Provide apply 25mm thick screed to floor slab	SM	15		
P	Provide & fix 600x450mm MD MH cover & frame	NO	2		
Q	Build in dia. 200mm pipe	NO	2		



	<u>Vibrated reinforced concrete (1:11/ :3/25-20mm aggregate) as described in:</u>				
R	150 mm thick to the Slab	SM	15		
	TOTAL CARRIED TO COLLECTION PAGE 39				
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>RATE</b>	<b>AMOUNT</b>
A	Ditto T12 reinforcing bar	KG	100		
B	Provide cut bend & fix T10 reinforcing bar	KG	100		
C	Ditto T8 reinforcing bar	KG	100		
D	Provide & fix in conc. BRC mesh type A142	SM	15		
	TOTAL CARRIED TO COLLECTION PAGE				
	<b><u>COLLECTION</u></b>				
A	TOTAL CARRIED FROM PAGE 38				
B	TOTAL CARRIED FROM ABOVE				

	<b>TOTAL CARRIED COLLECTION PAGE 41</b>				
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>RATE</b>	<b>AMOUNT</b>
	<b><u>SOAK PIT</u></b>				
A	Excavation pit for sak pit n.e. 1.5m deep	CM	7		
B	Ditto between 1.5m and 3.0m deep	CM	7		
C	Ditto between 3.0m and 4.5m deep	CM	7		
D	Ditto between 4.5m and 10.m deep	CM	24		
E	Return fill and rum	CM	40		
F	Cart away surplus material	CM	5		
G	Provide materials & erect 2000mm thick circular masonry wall in cement mortar 1:4	SM	11		
H	Provide lay & vibrate conc. 1:3:6 to 150mm thick base	CM	0.5		
J	Provide lay & vibrate conc. 1:2:4 to cover slab 150mm thick	CM	1		
K	Provide & fix 600x450mm MD MH cover & frame	NO	2		
L	Provide formwork to soffit of slab	SM	5		
M	Ditto to curved edge 150-225mm high	LM	8		
N	Provide cut bend & fix in wall dia. 8mm HT reinforcing bar	KG	39		
R	Keep excavations free from general waters	ITEM	1		
O	Backfill with bolder rocks	CM	10		

	<b>TOTAL CARRIED COLLECTION PAGE 41</b>				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<b>BILL 1 FOUL DRAINAGE</b>				
	<b><u>SEWER LINE</u></b>				
	<b><u>EXCAVATIONS</u></b>				
A	Excavate trench for diameter 100mm dia sewer pipe starting from ground level not exceeding 1.5m deep backfill after laying pipe and dispose excess materials as directed by the Engineer average depth 1.25m	LM	50		
B	Ditto but average depth 1.75m	LM	36		
C	Allow for plunking and strutting to all excavations during construction	ITEM	1		
D	Allow for keeping all excavations free from general waters	ITEM	1		
	<b><u>PIPE LAYING</u></b>				
E	Provide lay and joint in trench dia 100mm Upvc golden brown class 41Upvc pipe in flexible rubber ring joints	LM	50		
F	Provide lay and joint in trench dia 160mm Upvc golden brown class 41Upvc pipe in flexible rubber ring joints	LM	36		
	<b><u>MANHOLES</u></b>				
G	Excavate pit for standard manhole depth not exceeding 1.5m av. Depth1.5m	CM	9		
H	Ditto av. Depth 1.75m	CM	11		
J	Provide material and construct manhole type 'D' to detail (50)5303	NO	12		
K	Provide and fix medium duty rectangular manhole cover and frames include greasing the covers in clean sand	NO	12		
	<b>TOTAL CARRIED TO COLLECTION PAGE 42</b>				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	SEPTIC TANK	APGE	52		
2	SOAPIT TANK	PAGE	53		
3	FOUL DRAINAGE	PAGE	41		
	TOTAL FOR SEPTIC AND SOAK PIT CARRIED TO GRAND SUMMARY PAGE 66				

# FENCING




ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<b><u>SITE CLEARANCE</u></b>				
	-				
	<b><u>Excavations</u></b>				
A	Excavate for post footing; starting from stripped level; dia 300mm average depth 600mm deep.	CM	5		
	<b><u>plain concrete (1:2:4- class 20/20mm) in:</u></b>				
B	Post Footing	CM	4		
	<b><u>Pre-Cast Concrete Posts.</u></b>				
	-				
C	2400mm high precast concrete posts consisting of 125 x100mm tapered reinforced concrete 1:2:4 (20mm) posts at 3.0m centers reinforced with and including 4No.- 6mm MS steel rods and 6mm MS stirrups at 300mm centers with bottom end of post set in and plain concrete 1:3:6 (40mm) base size (m/s)	NO	98		
D	Extra over for straining post supported by 2 No. precast Rc1:2:4 (20) raking strut size 100x100x1800mm with top and bolted to fence with and including 12mm dia galvanized steel bolt and bottom and of post set in plain Concrete 1:3:6 (40) base size 400x400x400mm (m.s) and post fitted with 3No. 160x6mm galvanized hook bolts for straining wires	NO	10		
E	Extra over for double corner post each with raking strut and 3No. 160x8mm galvanized hook bolts straining wires.	NO	8		



<b>_ Total carried to collection page 46</b>					
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>RATE</b>	<b>AMOUNT</b>
	<b><u>CHAIN LINK FENCE</u></b>				
A	Provide material and erect chain-link fence 2400mm high consisting of Include for 4No strands PVC coated barbed wire at the top of 2.0mm, galvanized steel rust free chain link (2400mm,50x50mm mesh, Wire gauge 8Gauge, Wire diameter 4.00mm) with No 18SMG annealed iron wire all to a height of 2400mm and the whole lengthen stretched tight and even including levelling the ground as necessary m/s	SM	734		
B	4No strands high tensile galvanized wire at intermediate line 2mm thick gauge 16	LM	1200		
C	3No strands coated barbed wire	LM	900		
	<b><u>GATE</u></b>				
	<b><u>Ground bases</u></b>				
D	50mm thick mass concrete class Q (1:3:6) to bottoms of foundations	SM	2		
	<b><u>Insitu concrete; reinforced; class 20 / (20mm); vibrated</u></b>				
E	400 x400 x 4000 mm high Columns and bases	CM	2		
	<b><u>Reinforcement(provisional)</u></b>				
	<b><u>Bars; high yield steel; cold worked to B.S. 4461 including bends, hooks, tying wire and distance</u></b>				
	<b><u>blocks</u></b>				
F	12mm bars	KG	1,600		
G	8mm bars	KG	918		
	<b><u>Sawn formwork to insitu concrete as described: -</u></b>				
H	To sides of ground beam	SM	13		
<b>Total carried to collection page 46</b>					







ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A	Provide material and erect double steel gate gauge (painted with marine paint) 14 on 4.0m opening by 2.25m high fabricated of 50x25mmx4mm thick RHS frame, 100x100mm side posts,25x4mm vertical rails spaced at 150mm centers including reinforced concrete columns(400x400mm), concrete base for columns and excavations, deep bolts, lock fixing and aluminium painting all to detail (50)5368 as directed by the Engineer	NO	1		
B	Ditto but pedestrian gate of 1200mm width	NO	1		
<b>TOTAL CARRIED TO COLLECTION PAGE</b>					
<p data-bbox="224 1024 378 1056"><b><u>COLLECTION</u></b></p> <p data-bbox="224 1108 654 1140">Total brought forward from page 44</p> <p data-bbox="224 1192 654 1224">Total brought forward from page 45</p> <p data-bbox="224 1276 638 1308">Total brought forward from above</p>					
<b>Total carried to grand summary page 66</b>					

# RECIRCULATING AQUACULTURE SYSTEM (RAS) EQUIPMENT

Item	Description	Qty	unit	Rate	Amount
1	<p><b>Hatchery System</b></p>  <p>Supply install, test and commission incubator for tilapia/catfish egg hatchery system with the attached specification. • 3- Mc Donald hatching jars, approximately 8 litre</p> <ul style="list-style-type: none"> <li>• 3- Fish tanks</li> <li>• 1 -Stainless steel (SS304) support frame</li> <li>• 1- Polypropylene filter, tank. This tank is divided into two compartments. One compartment is filled with <ul style="list-style-type: none"> <li>• filter blocks for mechanical filtration of the water</li> <li>• 1x UV-C device (40 W) for clear water</li> <li>• 1x Messner Pump (48 W - 240 V)</li> <li>• Plug &amp; Play, just connect system to electricity and water source</li> <li>• PVC pipes and fittings</li> </ul> </li> </ul>	1	Set		
2	<p><b>NURSERY</b></p> <p style="text-align: center;"><b>Aeration tray</b></p> <p>Flow : 2-3m<sup>3</sup>/h ; Low pre-density available (an option)— the roots blower supplies the air</p>	32	Pcs		
3	 <ul style="list-style-type: none"> <li>• <b>ring blower:</b> 0.37kW/0.55hp</li> <li>• Voltage: 220v/240v</li> <li>• Frequency: 50HZ</li> <li>• Rated speed:2800 RPM</li> <li>• Maximum Flow: 105 M3 / H</li> <li>• Maximum pressure +: 130mbar</li> </ul> <p>Maximum varuum-: - 130mbar. <b>1 for spare</b></p>	2	Pcs		
	 <ul style="list-style-type: none"> <li>• <b>PP tanks</b> size:2.2*1.2m ; Material; Outlet: 75mm</li> <li>• HDPE tanks</li> <li>• Color: Blue or Black</li> </ul>	4	pcs		

	<b>Total Carried to collection page 54</b>				
<b>Item</b>	<b>Description</b>	<b>Qty</b>	<b>unit</b>	<b>Rate</b>	<b>Amount</b>
	<p><b>Grow-out system</b></p> <p>1.The water is fresh water; total water volume is 200m<sup>3</sup>;</p> <p>2.The Fish species is Tilapia and catfish</p> 				
9	<p><b>Supply install, test and commission</b></p> <p><b>Drum filter</b> Flow : Max.150 m<sup>3</sup>/h; V:380V 50 Hz.1.65KW</p> <p>Material; PP Filter mesh : 200mesh,316L. auto self- cleaning, including control electric box</p> 	1	Set		
10	<p><b>Supply install, test and commission</b></p> <p><b>UV sterilizer</b> Flow : Max150 (40)m<sup>3</sup>/h; V:220V 50 Hz;0.375kw with digital display, control box Holland brand lamps with auto cleaning Material PVC Philips lamp with 9000 hours with digital display, control box</p>	1	Set		
11	<p><b>Water quality Pocket Meters</b></p> <p>Conductivity. Salt, Potassium, Calcium, Sodium, Dissolved Oxygen, Temperature. Individual meters for the listed parameters 8 x CR2032 batteries, 2 droppers,60ml rinse bottle, Instruction manual Carrying case</p>	1	NO		

	<b>Total Carried to collection page 54</b>				
<b>Item</b>	<b>Description</b>	<b>Qty</b>	<b>unit</b>	<b>Rate</b>	<b>Amount</b>
12	 <p><b>Supply install, test and commission</b></p> <p><b>Protein Skimmer</b> Flow : Flow : Max.60m<sup>3</sup>/h;; diameter : 850mm V:220V 50Hz ; 1.5KW Material : PP ; self- cleaning, including control electric box acrylic collection cup</p>	1	Set		
13	<p><b>Supply install, test and commission</b></p>  <p><b>Ozone Generator</b> Ozone Output : 30g/h Gas source Air supply V:220V 50 Hz; 0.38kw; Stainless steel shell, time control can work with Skimmer.</p>	2	Set		
14	 <p><b>Biological filter tank</b> PP fitter media, aeration device, (including bio-filter PP tank Degassing tower) 1.1kw,1000-1200m<sup>3</sup> /m<sup>3</sup>, aeration device, (including bio-filter tank)</p> <p><b>Bio Media PE 10</b> <b>1CBM=120kgiameter 25*4mm;</b></p>	3	Set		
14					

15					
	<b>Oxygen Generator: Supply install, test and commission Oxygen Generator</b> Flow : (30) 40 lpm Power:220V 50 Hz, 2kw Oxygen concentrations : 95% Stainless steel shell	2	Set		
<b>Total Carried to collection page 54</b>					
Item	Description	Qty	unit	Rate	Amount
16	 <p>Supply install, test and commission</p> <p>Roots blower N=4kW ; V:380V 50HZ ; 1 for spare Air Supply to Bio-filter tank and the fish tank when the density is lower</p>	2	Set		
17	 <p><b>Oxygen cone</b> Flow : 60m<sup>3</sup>/h diameter : 960*2130 MM material High saturation efficiency, Easy installation. Material FRP</p>	1	Pcs		
18	 <p><b>Centrifugal pump</b> Flow : 50m<sup>3</sup>/h ; V:380V 50HZ ; 2.2kw Material cast iron ; 1 for spare used to lift the water to skimmer and UV</p>	3	Pcs		
19	 <p><b>High pressure Centrifugal pump</b>, Flow : 60m<sup>3</sup>/h ; V:380V 50HZ ; 4kw Material cast iron ; 1 for spare pump for oxygen cone</p>	2	pcs		







sedimentation tank diameter: 1000mm height: 1500mm Precipitation of large particles, buffer pool`

20

1

Set

**Total Carried to collection page 54**



Item	Description	Qty	unit	Rate	Amount
-		-	-	-	-
21	optional Temp control system, Model: ECO-HP005 heating capacity : 85kW cool capacity : 68kW V:380V 50HZ 19. 1kW.Maintaining stable temperatures within a defined temperature	1	pcs		
22	 Electrical box with alarm and spare parts	1	Set		
23	 <b>Supply install, test and commission water quality monitoring:</b> Ph,DO temp Mobile phone monitorable it has APP	1	PCS		
24	 <b>Supply install, test and commission</b> Customized Round Shape Corrugated Galvanized Steel Fish Tank Fish Tanks diameter : 5 metre height : 1.5 metre material cloth contains the support the based need to build by customer. Can choose other material	6	pcs		



	Hapa nets				
25	Material: PVC netting, Color Blue, Size 2m by 5m	5	pcs		
<b>Total Carried to collection page 54</b>					

Item	Description	Qty	unit	Rate	Amount
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<b><u>Supply fix and commission Brooder stock system</u></b>					
1	Double impeller blower 1.5kw	2	PCS		
2	ring blower 0.37kW/0.55hp 1 for spare	1	PCS		
					
3	Air hose (100m/roll)	5	Rolls		
					
4	Air valve 50mm	44	PCS		
<b><u>Supply fix and commission ACCESSORIES</u></b>					
5	Pipe and fitting for Ras system	2	SET		
6	UV light	15	PCS		
7	Reducer pump for drum filter	1	PCS		
8	Backwash pump for drum filter	1	SET		
<b>Total carried to collection page 54</b>					

Item	Description	Qty	unit	Rate	Amount
	<p><u>COLLECTION PAGE</u></p> <p>1) Brought forward from page 48</p> <p>2) Brought forward from page 49</p> <p>3) Brought forward from page 50</p> <p>4) Brought forward from page 51</p> <p>5) Brought forward from page 52</p> <p>6) Brought forward from page 53</p>				
	Total for equipment carried to grand summary page 64				

## SPIRULINA POND WORKS

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<b><u>SPIRULINA POND WORKS</u></b>				
	<b><u>ELEMENT 1</u></b>				
	<b>Site Clearance</b>				
A	Clear the site of all bush shrub undergrowth and small trees grub up roots and cart away or burn all arising	SM	174		
B	Excavation pit for Spirulina Pond n.e. 1.5m deep)	CM	104		
	<b>Filling and carting away</b>				
C	Return, fill and ram with selected and approved excavated material around excavations	CM	35		
D	Load and cart away excavated materials from site	CM	94		
E	Planking & strutting to sides of excavations	ITEM	1		
F	Keep excavations free from general waters	ITEM	1		
	<b><u>In-situ concrete work Mass concrete (1:3:6/15-38mm aggregate)</u></b>				
G	50mm thick blinding under raft foundation	SM	174		
	<b><u>Foundation walling</u></b>				
	Approved load bearing medium chiseled dressed natural stone walling bedded and jointed in cement sand (1:3)				
H	200mm thick reinforced with and including 20swg x 25mm wide hoop iron in every alternate course <b>12mm thick internal plaster with water proof cement (1:3) in two coats with fair finish with wood float</b>	SM	85.2		
	<b>Plinth area finishes</b>				
J	12mm Thick cement and sand (1:3) wood float render to plinth area	SM	85.2		
Carried to Collections page 60					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A	<p><b><u>Damp proof membrane (dam liner)</u></b>  Supply and install Green greenhouse STK Nature 120-CR,PSS,FMD – SOLARIG® 170 gsm HDPE Greenhouse tunnel kit, Nature Model with high-quality galvanized steel tubing, incorporating anti-insect nets. The greenhouse kit to be provided as TWO conjoined sets of the greenhouse measuring 8x15m=120 Square meter</p> <p><b><u>AGITATION/CENTRIFUGATION AREA</u></b></p> <p><b><u>SUBSTRUCTURES (ALL PROVISIONAL)</u></b></p> <p><b>NOTE; (I) All work measured under this element is up to and including the floor slab but excluding the finishes</b></p> <p><b><i>Site Clearance</i></b></p>	360	SM		
B	<p>Clear the site of all bush shrub undergrowth and small trees grub up roots and cart away or burn all arising</p> <p><b><u>Excavations and earthworks</u></b></p>	12	SM		
C	<p>Reduce level to remove top vegetable soil average 200mm deep and spread as directed on site</p>	12	SM		
D	<p>Excavate for strip foundation trenches not exceeding 1.5 meters deep commencing from stripped level</p>	10	CM		
E	<p>Extra over excavations for excavating in rock IRRESPECTIVE OF CLASS</p> <p><b><u>Disposal</u></b></p>	10	CM		
F	<p>Load surplus excavated material and cart away</p> <p><b><u>Filling</u></b></p>	2.88	CM		
G	<p>Return fill and ram selected excavated material around foundations.</p>	7	CM		
	Carried to Collections page 60				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
A	<b><u>Hardcore as described</u></b> 300mm Thick layer approved hardcore filling including leveling and consolidating in 150mm layers	3.6	CM		
B	<b><u>Blinding</u></b> 50mm Thick quarry dust blinding on surfaces of hardcore	12	SM		
C	<b><u>Insecticide treatment</u></b>  'TERMIDOL" or other equal and approved chemical insecticide treatment prepared and applied according to the manufacturer's printed instructions.	12	SM		
D	1000-gauge polythene sheeting lay under concrete floor bed.	12	SM		
E	<b><u>In-situ concrete work Mass concrete (1:3:6/15-38mm aggregate)</u></b>  50mm thick blinding under strip foundation	7	SM		
F	<b><u>Vibrated reinforced concrete (1:1.5:3/25-20mm aggregate) as described in:</u></b>  Strip footing	2	CM		
G	150mm Thick ground floor slab	12	SM		
H	<b><u>Steel reinforcement</u></b> <b><u>Mesh reinforcement</u></b> B.R.C A142, steel mesh fabric reinforcement weighing,2.22 kg/m2, measured net including end and side laps	12	SM		
	Carried to Collections page 60				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b>Supply and fix steel bars reinforcement including bending, hooks, tying wire, cutting, spacer blocks and supporting all in position as described.</b>				
	High tensile ribbed bars (Provisional)				
A	<b>Assorted rebar's (8 - 20mm diameter)</b>	168	KG		
	<b><u>Sawn formwork as described to:</u></b>				
B	Edges of slab 75 - 150mm girth high	87	LM		
	<b><u>Foundation walling</u></b>				
	<b>Approved load bearing medium chiseled dressed natural stone walling bedded and jointed in cement sand (1:3)</b>				
C	200mm thick reinforced with and including 20swg x 25mm wide hoop iron in every alternate course	11	SM		
	<b><u>Horizontal damp proof course; one layer of 3 - ply bituminous felt or other equal and approved (measured net - allow for laps)</u></b>				
D	200mm wide leveled and bedded in cement and sand (1:3) mortar under walls	14	LM		
	<b><u>Plinth area finishes</u></b>				
E	12mm thick cement and sand (1:3) wood float render to plinth	6	SM		
F	Prepare and apply three coats black bitumastic paint to rendered area	6	SM		
	<b><u>Precast paving slabs (Around the building &amp; court yard)</u></b>				
G	Excavate on normal soil not exceeding 300mm deep; backfill with murrum to form base to receive PCC paving slabs (m/s) and cart away arising	8	SM		
H	Approved weed killer applied according to manufacturer's instructions	8	SM		
	Carried to Collections page 60				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
A	"Premise 200" Anti-termite treatment to murrum	8	SM		
B	600 x 600 x 50mm thick PCC slabs on and including 50mm sand bed jointed and pointed in cement sand 1:3 mortar	8	SM		
	Carried to Collections				
	<p><b><u>COLLECTION</u></b></p> <p>_Brought Forward from Page No.56</p> <p>Brought Forward from Page No.57</p> <p>Brought Forward from Page No. 58</p> <p>Brought Forward from Page No. 59</p> <p>Brought Down from Above</p>				
	<b>Total Carried to Collection page 65</b>				



ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>ELEMENT NO.2</u>				
	<b><u>REINFORCED CONCRETE FRAME</u></b>				
	<i><u>Vibrated reinforced concrete (1:11/ :3/25-20mm aggregate) as described in:</u></i>				
A	Slab	12	SM		
	<u>Supply and fix steel bars reinforcement including bending, hooks, tying wire, cutting, spacer blocks and supporting all in position as described.</u>				
	<b>High tensile ribbed bars (Provisional)</b>				
B	Assorted rebar's (8 - 20mm diameter)	180	KG		
	<b><u>Formwork as described to;(NB: Rate should be inclusive of a fair face finish to concrete surfaces)</u></b>				
C	Side and soffits of beams	8	SM		
	<b><u>WALLING</u></b>				
	<b><u>External /Internal walls</u></b>				
	<b>Approved load bearing medium chiseled dressed natural stone walling bedded and jointed in cement sand (1:3)</b>				
D	200mm thick reinforced with and including 20swg x 25mm wide hoop iron in every alternate course	14	SM		
	<b>Total Carried to Collection page 63</b>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<p><b><u>WALLING</u></b></p> <p><b><u>External /Internal walls</u></b></p> <p><u>Wall finishes</u>  <b><u>12mm thick cement and sand (1:3) wood float finish,</u></b>  <b><u>as described to: -</u></b></p>				
A	Wall surfaces	14	SM		
	<p><b><u>Painting and decorations</u></b>  <b><u>Prepare and apply one undercoat and two finishing coats gloss paint on: -</u></b></p>				
B	Plastered surfaces	14	SM		
C	Allow for fixing of sinks and works associated with steering pump	1	item		
D	limner	1	item		
	<b>Total Carried to Collection page 63</b>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<b><u>COLLECTION PAGE</u></b>				
A	Brought forward from page 61				
B	Brought forward from page 62				
	Total for Spirulina Pond Carried to Grand Summary page 66				

ITEM	DESCRIPTION		AMOUNT
A	<p><u>PROVISIONAL SUMS</u></p> <p>Allow a provisional sum of KSh. 700,000.00 thousand only for (KSh 7000,000) only for contingencies</p>		700,000.00
B	<p><u>Civil works</u></p> <p>Allow a provisional Sum of KSh. Four Million (KSh 4,000,000) only for landscaping and storm water drainage</p> <p>Add Profit</p> <p>Add Attendance</p>		4,000,000.00
TOTAL FOR PROVISIONAL SUMS CARRIED TO GRAND SUMMARY PAGE 66			

ITEM	DESCRIPTION		AMOUNT
	<p><u>PRIME COST SUMS</u></p> <p><u>Works covered under prime cost sums shall be executed by nominated subcontractors. The subcontractors will be procured by the employer and they shall enter into a subcontract agreement with the main contractor before executing the works.</u></p> <p><u>Mechanical Works</u></p> <p>Allow a Prime Cost Sum of KSh. Two Million (KSh 2,000,000) only for Internal Plumbing &amp; Drainage, and Fire Protection</p> <p>Add Profit</p> <p>Add Attendance</p> <p>B Allow a Prime Cost Sum of KSh. Five Hundred Thousand (KSh 500,000.00) only for Fresh Water Reticulation Works</p> <p>Add Profit</p> <p>Add Attendance</p> <p>C <u>Electrical Works</u></p> <p>Allow a Prime Cost Sum of KSh. Two Million (KSh 2,000,000) only for Electrical Works Installation</p> <p>Add Profit</p> <p>Add Attendance</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p>%</p> <p>SUM</p> <p></p> <p>%</p> <p>SUM</p>	<p></p> <p>2,000,000.00</p> <p></p> <p>500,000.00</p> <p></p> <p>2,000,000.00</p>
	TOTAL FOR PRIME SUMS CARRIED TO GRAND SUMMARY 66		

<u>GRAND SUMMARY</u>			
ITEM	DESCRIPTION	PAGE	FOR TENDERER USE ONLY
			KSHS.
1	PARTICULAR PRELIMINARIES	PP/15	
2	GENERAL PRELIMINARIES	GP/9	
3	FISH PRODUCTION AREA	12	
4	TUITION BLOCK, FISH AND SPIRULINA PROCESSING AREA	25	
5	BORE HOLE DRILLING	29	
6	WATER TOWER	36	
7	SECPTIC TANK`	42	
8	FENCING	46	
9	EQUIPMENTS	56	
10	SPIRULINA POND	65	
11	PROVISIONAL SUMS	66	
12	PRIME COST SUMS	67	
	GRAND TOTAL TAKEN TO FORM OF TENDER	KSHS	

Amount in Words; Kenya Shillings .....

.....

.....Cents.....

Tenderer's Name .....

Tenderer's Signature & Stamp .....

Address .....

.....

Date .....

Witness's Name .....

Witness's Signature .....

Address .....

.....

Date .....











