

<p><b>A</b></p> <p><b>A10</b></p> <p>110</p> <p>120</p> <p>130</p> <p><b>A11</b></p> <p>110</p>	<p><b>BILL No.1 PRELIMINARIES/GENERAL CONDITIONS</b></p> <p><b>PROJECT PARTICULARS</b></p> <p>THE PROJECT:</p> <p>Name: THE REHABILITATION OF TARKWA POST OFFICE</p> <p>Location: TARKWA - WESTERN REGION</p> <p>EMPLOYER: GHANA POST</p> <p>PROJECT CONSULTANTS:</p> <p><b>DRAWINGS</b></p> <p>THE BID DRAWINGS are:</p> <p><i>Architectural drawings:</i></p> <p>To collection</p>	<p>GH¢</p>	<p>P</p>
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	<i>Structural drawings:</i>		
	<i>Services drawings:</i>		
120	THE CONTRACT DRAWINGS will be the same as the bid drawings		
130	THE QUANTITIES DRAWINGS:The drawings from which the bills of quantities were prepared are the bid drawings.		
140	INSPECTION:Drawings and other documents relating to the Contract but not included in the bidding documents may be seen by appointment during normal office hours at the office of the Project Manager.		
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**A12 THE SITE/EXISTING BUILDINGS**

110 THE SITE:The site is situated at

## 120 EXISTING MAINS/SERVICES

Before commencing site operations,the Contractor shall request the Project Manager to indicate where known the positions of buried or hidden mains or services which are known to exist in the vicinity of the Works.

## 130 ACCESS TO THE SITE

The Contractor is to agree with the Project Manager procedures for access to the site and ensure his operatives and sub-contractors comply with these procedures.

## 140 USE OF THE SITE

- Do not use the site for any purpose other than carrying out the Works.
- The Contractor, his operatives and sub-contractors shall be confined to the areas on the site allocated by the Project Manager and the Contractor will be held liable for any damage or nuisance caused by any trespass onto adjoining properties.

150 SITE VISIT:Before bidding,ascertain the nature of the site,access thereto and all local conditions and restrictions likely to affect the execution of the Works.

160 SITE VISIT may be made by appointment with the Project Manager.

**A13 DESCRIPTION OF THE WORKS**

The Project involves the remodelling of existing Post Office. The works include Demolition, creation of internal partitions, construction of counter and cubicles. All windows are glazed aluminium sliding windows. The roof is of Pre-coated Aluminium roofing sheets. The doors are polished solid panelled doors. The ceiling is Plaster board. The floor finish is polished porcelain floor tiles.

The External Works include concrete paving, Concrete Apron and U- Drain, Fencewall and Septic Tank

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<p><b>A20 THE CONTRACT</b></p> <p>110 The Conditions of Contract are standard World Bank Forms 1995 Edition; amended copies of which are included in these Bills of Quantities</p> <p>THE CONDITIONS:</p> <p><b>A: General</b></p> <p>1 Definition of terms  2 Interpretation  3 Language and Law  4 Project Manager's Decisions  5 Delegation  6 Communication  7 Subcontracting  8 Other Contractors  9 Personnel  10 Employer's and Contractor's Risks  11 Employer's Risks  12 Contractor's Risks  13 Insurance  14 Site Investigation Reports  15 Queries about the Contract Data  16 Contractor to Construct the Works  17 The Works to be completed by the Intended Completion Date  18 Approval by the Manager  19 Safety  20 Discoveries  21 Possession of the site  22 Access to the Site  23 Instructions  24 Disputes  25 Procedures for Disputes  26 Replacement of Adjudicator</p> <p><b>B. Time Control</b></p> <p>27 Program  28 Extension of the Intended Completion Date  29 Acceleration</p> <p>To collection</p>		GH¢	P

<p><b>A20 THE CONTRACT (Contd.)</b></p> <p><b>B. Time Control(Contd.)</b></p> <p>30 Delays Ordered by the Project Manager  31 Management Meetings  32 Early warning</p> <p><b>C. Quality Control</b></p> <p>33 Identifying defects  34 Tests  35 Correction of Defects  36 Uncorrected Defects</p> <p><b>D. Cost Control</b></p> <p>37 Bill of Quantities  38 Changes in the Quantities  39 Variations  40 Payments of Variations  41 Cash Flow Forecasts  42 Payments of Certificates  43 Payments  44 Compensation Events  45 Tax  46 Currencies  47 Price Adjustment  48 Retention  49 Liquidated Damages  50 Bonus  51 Advance Payment  52 Securities  53 Dayworks  54 Cost of Repairs</p> <p><b>E. Finishing the Contract</b></p> <p>55 Completion  56 Taking over  57 Final Account  58 Operating and Maintenance Manuals  59 Termination</p> <p>To collection</p>		GH¢	P

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<b>A20</b>	<b>THE CONTRACT(Contd.)</b>		
	<b>E. Finishing the Contract(Contd.)</b>		
	60 Payment upon termination		
	61 Property		
	62 Release from Performance		
	63 Suspension of Credit		
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<p><b>A30 BIDDING/SUBLETTING/SUPPLY</b></p> <p><b>MAIN CONTRACT BIDDING</b></p> <p>110 SCOPE:These conditions are supplementary to those stated in the invitation for bids and on the Form of Bid.</p> <p>120 EXCLUSIONS:If the Contractor cannot bid for any part(s) of the work as defined in the bidding documents he must inform the Project Manager as soon as possible, defining the relevant part(s) and stating the reason(s) for his inability to bid.</p> <p>130 ACCEPTANCE OF BID:The Employer and his representatives:</p> <ul style="list-style-type: none"> <li>• Offer no guarantee that the lowest or any bid will be recommended for acceptance or accepted.</li> <li>• Will not be responsible for any cost incurred in the preparation of any bid.</li> </ul> <p>140 PERIOD OF VALIDITY:Bids must remain open for consideration (unless previously withdrawn) for not less than 120 days from the date fixed for the submission or lodgement of bids.</p> <p><b>PRICING/SUBMISSION OF DOCUMENTS</b></p> <p>150 PRELIMINARIES IN THE SPECIFICATION:The Preliminaries/ General conditions sections(A10-A55 inclusive) have been prepared generally in accordance with SMM7.</p> <p>160 PRICING OF BILLS:Alterations and qualifications to Bills of Quantities must not be made without the written consent of the Project Manager.Bids containing unauthorised alterations or qualifications may be rejected.Costs relating to items which are not priced will be deemed to have been included elsewhere in the Bills of Quantities.</p> <p>170 PROGRAMME:The Contractor's proposed programme as specified in Section A32 or a summary thereof showing the sequence and timing of the principal parts of the Works,period for planning and design,and itemising any work which is excluded must be submitted.</p> <p style="text-align: center;">To collection</p>		GH¢	P

180	<p>QUALITY CONTROL RESOURCES:A statement must be submitted within one week of request describing the organisation and resources which the Contractor proposes and undertakes to provide to control the quality of the Works,including the work of subcontractors.The statement must include the number and type of staff responsible for quality control,with details of their qualifications and duties.</p>	GHç	P
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	<p><b>A31 PROVISION, CONTENT AND USE OF DOCUMENTS</b></p> <p><b>DEFINITIONS AND INTERPRETATIONS</b></p> <p>110 DEFINITIONS:The meaning of terms, derived terms and synonyms used in the preliminaries/general conditions and specification is as defined below or in the appropriate British Standard or British Standard glossary.</p> <p>120 IN WRITING:When required to notify,inform,instruct,agree, confirm,obtain information,obtain approval or obtain instructions do so in writing.</p> <p>130 APPROVAL(and words derived therefrom) means the approval in writing of the Project Manager unless specified otherwise.</p> <p>140 PRODUCTS means materials(including naturally occurring materials) and goods(including components,equipment and accessories) intended for permanent incorporation in the Works</p> <p>150 EQUIVALENT PRODUCTS:Where the specification permits substitution of a product of different manufacture to that specified and such substitution is desired,before ordering the product notify the Project Manager and,when requested, submit for verification documentary evidence that the alternative product is equivalent in respect of material,safety, reliability,function,compatibility with adjacent construction, availability of compatible accessories and,where relevant, appearance.Any proposal for use of an alternative product must also include proposals for substitution of compatible accessory products and variation of details as necessary,with evidence of equivalent durability,function and appearance of the construction as a whole.If such substitution is sanctioned, and before ordering products,provide revised drawings, specification and manufacturer's guarantees as required by the Project Manager.</p> <p>160 MANUFACTURER AND REFERENCE:Where used in combination:</p> <ul style="list-style-type: none"> <li>• Manufacturer' means the firm under whose name the particular product is marketed.</li> <li>• Reference' means the proprietary brand name and/or reference by which the particular product is identified.</li> </ul> <p style="text-align: center;">To collection</p>	GHç	P

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170	<p>SIZES:Unless otherwise stated:</p> <ul style="list-style-type: none"> <li>• Product are specified by their co-ordinating sizes.</li> <li>• Cross section dimensions of timber shown on drawings are nominal sizes</li> </ul>		
180	<p>FIX ONLY means all labours in unloading,handling,storing and fixing in position,including use of all plant.</p>		
190	<p>SUPPLY AND FIX:Unless stated otherwise all items given in the/ on the drawings are to be supplied and fixed complete.</p>		
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**A31 PROVISION, CONTENT AND USE OF DOCUMENTS(Contd.)****TERMS USED IN REFURBISHMENT/ALTERATION**

- 200 REMOVE means disconnect,dismantle as necessary and remove the stated element,work or component and all associated accessories,fastenings,supports,linings and bedding materials, and dispose of unwanted materials. It does not include removing associated pipework,wiring,ductwork or other services.
- 210 KEEP FOR REUSE means:  
During removal prevent damage to the stated components or materials,and clean off bedding and jointing materials. Stack neatly,adequately protect and store until required by the Employer or for use in the Works as instructed.
- 220 REPLACE means:
- Remove the stated existing components,features anf finishes
  - Provide and fit in lieu new components,features or finishes which,unless specified otherwise,must match those which have been removed.
  - Make good as necessary.
- 230 REPAIR means carry out local remedial work to components, features and finishes as found in the existing building. Resecure or refix as necessary and leave in a sound and neat condition. It does not include:
- Replacement of components or parts of components.
  - Redecoration
- 240 MAKE GOOD means carry out local remedial work to components, features and finishes which have been disturbed by other, previous work under this Contract and leave in a sound and neat condition. It does not include:
- Replacement of components or parts of components.
  - Redecoration
- The meaning of the term shall not be limited by this definition where used in connection with the defects liability provisions of the Contract.

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A31 **PROVISION, CONTENT AND USE OF DOCUMENTS(Contd.)**

**TERMS USED IN REFURBISHMENT/ALTERATION(Contd.)**

250 EASE means make minor adjustments to moving parts of the stated component to achieve good fit in both open and closed positions and ensure free movement in relation to fixed surrounds.Make good as necessary.

260 TO MATCH EXISTING means use products, materials and methods to match closely all visual characteristics and features of the existing work,with joints between existing and new work as inconspicuous as possible,all to approval of appearance.

**DOCUMENTS PROVIDED ON BEHALF OF EMPLOYER**

270 ADDITIONAL COPIES OF DRAWING:Two copies of drawings (not counting any certified copy of the Contract Drawing) will be issued on request but will be charged to the Contractor.

280 ADDITIONAL COPIES OF BILLS:After execution of the Contract, two copies of the unpriced Bills of Quantities will be issued to the Contractor.Additional copies will be issued on request,if available,but will be charged to the Contractor.

290 ADDITIONAL COPIES OF SPECIFICATION:After execution of the Contract,two copies of the Specification will be issued to the Contractor.Additional copies will be issued on request, if available,but will be charged to the Contractor.

300 DIMENSIONS:The accuracy of dimensions scaled from the drawings is not guaranteed.Obtain from the Project Manager any dimensions required but not given in figures on the drawings nor calculable from figures on the drawings.

THE MEASURED QUANTITIES:For purposes of ordering products and constructing the Works

- The accuracy and sufficiency of the measured quantities is not guaranteed.
- The specification and drawings shall take precedence over the measured quantities.

<p><b>A31 PROVISION, CONTENT AND USE OF DOCUMENTS(Contd.)</b></p> <p><b>DOCUMENTS PROVIDED BY CONTRACTOR</b></p> <p>320 TECHNICAL LITERATURE:The Contractor is required to keep copies of the following on site, readily accessible for reference by all supervisory personnel:</p> <ul style="list-style-type: none"> <li>• Manufacturers' current literature relating to all products to be used in the Works.</li> <li>• Those parts of BS 8000 'Workmanship on building sites' which are invoked in the specification.</li> </ul> <p>330 MAINTENANCE INSTRUCTIONS AND GUARANTEES: Retain copies delivered with components and equipment (falling which,obtain), register with manufacturer as necessary and hand over to the Project Manager on or before Practical Completion.</p>		GHç	P
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<p><b>A32 MANAGEMENT OF THE WORKS</b></p> <p><b>GENERALLY</b></p> <p>110 SUPERVISION: Accept responsibility for co-ordination, supervision and administration of the Works, including all subcontractors. Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for co-ordination of the work.</p> <p>120 INSURANCE: Before starting work on the site submit documentary evidence and/or policies and receipts for the insurance required by the Conditions of Contract.</p> <p>130 INSURANCE CLAIMS: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, forthwith give notice in writing to the Employer, the Project Manager and the Insurers. Indemnify the Employer against any loss which may be caused by failure to give such notice.</p> <p>140 CLIMATIC CONDITIONS: Keep an accurate record of:</p> <ul style="list-style-type: none"> <li>• Daily maximum and minimum air temperatures (including overnight)</li> <li>• Delays due to adverse weather, including description of the weather, type(s) of work affected and number of hours lost.</li> </ul> <p><b>PROGRAMME/ PROGRESS</b></p> <p>150 PROGRAMME: Within 14 days of delivery of the Letter of Acceptance, the Contractor shall provide the Project Manager in an approved form a master programme for the Works.</p> <p>160 MONITORING: Record progress on a copy of the programme kept on site. If any circumstances arise which may affect the progress of the Works put forward proposals or take other action as appropriate to minimise any delay and to recover any lost time.</p> <p style="text-align: center;">To collection</p>		GHç	P

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<b>A32</b>	<b>MANAGEMENT OF THE WORKS(Contd.)</b>		
170	<p>PROJECT MANAGER'S SITE MEETING</p> <ul style="list-style-type: none"> <li>• The Project Manager will hold regular site meeting to review progress and other matters arising from the administration of the Contract. Meetings will normally be held monthly</li> <li>• Ensure the availability of accommodation at the time of such meetings.</li> <li>• Attend all meetings and inform subcontractors and suppliers when their presence is required.</li> <li>• The Project Manager will chair the meetings and take and distribute minutes.</li> </ul>		
180	<p>CONTRACTOR'S SITE MEETINGS: Hold meetings with appropriate subcontractors and suppliers shortly before main site meetings to facilitate accurate reporting of progress.</p>		
190	<p>PHOTOGRAPHS: Provide four copies of colour progress photographs from agreed points at monthly basis.</p>		
200	<p>NOTICE OF COMPLETION: Give Project Manager at least two weeks notice of the anticipated dates of Practical Completion of the whole of the Works.</p>		
210	<p>ADVERSE WEATHER: Use all reasonable and suitable building aids and methods to prevent or minimise delays during adverse weather conditions.</p>		
	<b>CONTROL OF COST</b>		
220	<p>CASH FLOW FORECAST: As soon as possible and before starting work on site submit to the Project Manager a forecast showing the gross valuation of the Works at the date of each Interim Certificate throughout the Contract period and based upon the programme for the Works.</p>		
230	<p>EXISTING WORK: The extent and location of renewal of existing work must be agreed, at least on a provisional basis, with the Project Manager before the work is started. Remove existing work in ways which will reasonably minimise the amount of removal and renewal.</p>		
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	<p><b>A32 MANAGEMENT OF THE WORKS(Contd.)</b></p> <p><b>CONTROL OF COST(Contd.)</b></p> <p>240 ESTIMATED COST OF VARIATIONS: If the Project Manager issues details of a proposed instruction with a request for an estimate of cost, submit such an estimate without delay and in any case within 7 days.</p> <p>250 MEASUREMENTS: Give reasonable notice to the Project Manager before covering up work which the Project Manager requires to be measured.</p> <p>260 DAYWORK VOUCHERS: Give reasonable notice to the Project Manager of the commencement of any work for which daywork vouchers are to be submitted.Before being delivered, each voucher must be:</p> <ul style="list-style-type: none"> <li>• Reference to the instruction under which the work is authorised, and</li> <li>• Signed by the person in charge as evidence that the workmen's names, the time spent by each, the plant and materials shown are correct.</li> </ul> <p>270 INERIM VALUATIONS: At least 7 days before the end of each established Period for interim valuations submit to the Project Manager details of amounts due under the Contract together with all necessary supporting information.</p> <p>280 LABOUR AND PLANT RETURNS: At the beginning of each week provide for verification by the Project Manager of Works records showing, for each day of the previous week:</p> <ul style="list-style-type: none"> <li>• The number and description of craftsmen,labourers and other persons employed on or in connection with the Works, including those employed by subcontractors.</li> <li>• The number, type and capacity of all mechanical and power-operated plant employed on the Works.</li> </ul> <p style="text-align: center;">To collection</p>	GH¢	P



**A33 QUALITY STANDARDS/CONTROL****MATERIALS AND WORK GENERALLY**

- 110 GOOD PRACTICE:Where and to the extent that materials, products and workmanship are not fully detailed or specified they are to be:
- Of a standard appropriate to the Works and suitable for the functions stated in or reasonably to be inferred from the project documents, and
  - In accordance with good building practice.
- 120 GENERAL QUALITY OF PRODUCTS:
- Products to be new unless otherwise specified.
  - Where a choice of manufacturer or source of supply is allowed for any particular product, the whole quantity required to complete the work must be of the same type, manufacture and/or source unless otherwise approved. Produce written evidence of sources of supply when requested by the Project Manager.
  - Ensure that the whole quantity of each product required to complete the work is of consistent kind, size, quality and overall appearance.
  - Where consistency of appearance is desirable ensure consistency of supply from the same source. Unless otherwise approved do not use different colours batches where they can be seen together.
  - If products are prone to deterioration or have a limited shelf life, order in suitable quantities to a programme and use in appropriate sequence. Do not use if there are any signs of deterioration, setting or other unsatisfactory condition.
- 130 PROPRIETARY PRODUCTS:
- Handle, store, prepare and use or fix each product in accordance with its manufacturer's current printed or written recommendations/instructions. Inform Project Manager if these conflict with any other specified requirement.
  - The bid will be deemed to be based on the products specified and recommendations on their use as described in the manufacturer's current literature.

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**QUALITY STANDARDS/CONTROL(Contd.)****MATERIALS AND WORK GENERALLY(Contd.)**

## PROPRIETARY PRODUCTS(Contd):

- Obtain confirmation from manufacturers that the products specified and recommendations on their use have not changed since that time. Where such change has occurred, inform Project Manager and do not place orders for or use the affected products without further instructions.

- 140 CHECKING COMPLIANCE OF PRODUCTS: Check all delivery tickets, labels, identification marks and, where appropriate, the products themselves to ensure that all products comply with the project documents. Where different types of any product are specified, check to ensure that the correct type is being used in each location. In particular, check that:
- The sources, types, qualities, finishes and colours are correct, and match any approved samples.
  - All accessories and fixings which should be supplied with the good have been supplied.
  - Sizes and dimensions are correct. Where tolerances of components are critical, measure a sufficient quantity to ensure compliance.
  - The products are clean, undamaged and otherwise in good condition.

- 150 PROTECTION OF PRODUCTS:
- Prevent over-stressing, distortion and any other type of physical damage.
  - Keep clean and free from concentration. Prevent straining, chipping, scratching or other disfigurement, particularly of products exposed to view in the finished work.
  - Keep dry and in a suitably low humidity atmosphere to prevent premature setting, moisture movement and similar defects. Where appropriate store off the ground and allow free air movement around and between stored products.
  - Protect adequately from the weather. Ensure that products are at a suitable temperature and moisture content at time of use.
  - So far as possible keep products in their original wrappings, packings or containers, until immediately before they are used.

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**QUALITY STANDARDS/CONTROL(Contd.)****MATERIALS AND WORK GENERALLY(Contd.)**

## PROTECTION OF PRODUCTS(Contd.)

- Wherever possible retain protective wrappings after fixing and until shortly before Practical Completion.
- Ensure that protective measures are fully compatible with and not prejudicial to the products/materials.

160 SUITABILITY OF RELATED WORK AND CONDITIONS: Ensure that all trades are provided with necessary details of related types of work. Before starting each new type or section of work, ensure that:

- Previous, related work is appropriately complete, in accordance with the project documents, to a suitable standard and in a suitable condition to receive the new work.
- All necessary preparatory work has been carried out, including provision for services, openings, supports, fixings, damp proofing, priming and sealing.
- The environmental conditions are suitable, particularly that the building is suitably weathertight when internal components, services and finishes are installed.

170 GENERALLY QUALITY OF WORKMANSHIP:

- Operatives must be appropriately skilled and experienced for the type and quality of work.
- Take all necessary necessary precautions to prevent damage to work from, rain and other hazards.
- Inspect components and product carefully before fixing or using and reject any which are defective.
- Fix or lay securely, accurately and in alignment.
- Provide suitable, tight packings at screwed and bolted fixing points to take up tolerances and prevent distortion. Do not overtighten fixings.
- Adjust location and fixing of components and products so that joints which are to be finished with mortar or sealant or otherwise left open to view are even and regular.
- Ensure that all moving parts operate properly and freely. Do not cut, grind or plane prefinished components and products to remedy binding or poor fit without approval.

180 WATER FOR THE WORKS: Clean and uncontaminated. If other than mains supply is proposed, provide evidence of suitability.

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**QUALITY STANDARDS/CONTROL(Contd.)****SAMPLES/APPROVALS**

- 130 APPROVALS: Where and to the extent that products or work are specified to be approved or the Project Manager instructs or requires that they are to approved, the same must be supplied and executed to comply with all other requirements and in respect of the stated or implied characteristics either:
- To the express approval of the Project Manager or
  - To match a sample expressly approved by the Project Manager as a standard for the purpose.

**ACCURACY/SETTING OUT GENERALLY**

- 200 SETTING OUT:
- Check the levels and dimensions of the site against those shown on the drawings, and record the results on a copy of the drawings. Notify Project Manager in writing of any discrepancies and obtain instructions before proceeding.
  - Inform Project Manager when overall setting out is complete and before commencing construction.
- 210 APPEARANCE AND FIT:
- Arrange the setting out, erection, juxtaposition of components and application of finishes (working within the practical limits of the design and specification) to ensure that there is satisfactory fit at junctions, that there are no practically or visually unacceptable changes in plane, line or level and that the finished work has a true and regular appearance.
  - Wherever satisfactory accuracy, fit and/or appearance of the work are likely to be critical or difficult to achieve, obtain approval of proposals or the appearance of the relevant aspects of the partially finished work as early as possible.

**SERVICES GENERALLY**

- 220 SERVICES REGULATIONS: Any work carried out to or which affects new or existing services must be in accordance with the Bye Laws or Regulations of the relevant Statutory Authority.

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**QUALITY STANDARDS/CONTROL(Contd.)****SERVICES GENERALLY (Contd.)**

- 230 SERVICE RUNS: Make adequate provision for services, including unobstructed routes and fixings. Wherever possible ducts, chases and holes are to be formed during construction rather than cut.
- 240 MECHANICAL AND ELECTRICAL SERVICES must have final tests and commissioning carried out so that they are in full working order at Practical Completion.
- 250 ANY DAMAGE to mains and/or services howsoever caused shall immediately be reported by the Contractor to the Project Manager. The Contractor shall make such arrangements as are necessary for the damage to be made good and shall be liable for all the costs and associated costs of such making good or repairs.

**SUPERVISION/INSPECTION/DEFECTIVE WORK**

- 260 SUPERVISION: In addition to the constant management and supervision of the works provided by the Contractor's person in charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.
- 270 CO-ORDINATING OF ENGINEERING SERVICES: The site organisation staff must include one or more persons with appropriate knowledge and experience of mechanical and electrical engineering services to ensure compatibility between engineering services, one with another and each in relation to the Works generally. Submit to the Project Manager, when requested, CV's or other documentary evidence relating to the staff concerned.
- 280 PERSON-IN-CHARGE: Give maximum possible notice to Project Manager before changing the person-in-charge.
- 290 ACCESS FOR INSPECTION: Give Project Manager not less than 2 weeks notice before removing scaffolding or other facilities for access.

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**QUALITY STANDARDS/CONTROL(Contd.)****WORK AT OR AFTER COMPLETION**

300 GENERALLY:

- Make good all damage consequent upon the work.
- Remove all temporary markings, coverings and protective wrappings unless otherwise instructed.
- Clean the works thoroughly inside and out including all accessible ducts and voids, remove all splashes, deposits, efflorescence, rubbish and surplus materials consequent upon the execution of the work.
- Cleaning materials and methods to be as recommended by manufacturers of products being cleaned, and to be such that there is no damage or disfigurement to other materials or construction.
- Touch up minor faults in newly painted/repainted work, carefully matching colour, and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
- Adjust, ease and lubricate moving parts of new work as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.

310 SECURITY AT COMPLETION: Leave the Works secure with all accesses locked. Account for and adequately label all keys and hand over to Employer with itemised schedule, retaining duplicate schedule signed by Employer as a receipt.

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	<p><b>A34 SECURITY/SAFETY/PROTECTION</b></p> <p><b>GENERALLY</b></p> <p>110 SECURITY: Adequately safeguard the site, the Works, products, materials, plant, and any existing buildings affected by the Works from damage and theft. Take all reasonable precautions to prevent unauthorised access to the site, the Works and adjoining property.</p> <p><b>PROTECT AGAINST THE FOLLOWING:</b></p> <p>120 NOISE:</p> <ul style="list-style-type: none"> <li>• Comply generally with BS 5228.</li> <li>• Do not use pneumatic drills and other noisy appliances during working hours without consent of the Project Manager.</li> </ul> <p>130 POLLUTION: Take all reasonable precautions to prevent pollution of the site, the Works and the general environment including streams and waterways. If pollution occurs, inform the appropriate Authorities and the Project Manager without delay and provide them with all relevant information.</p> <p>140 NUISANCE: Take all necessary precautions to prevent nuisance from smoke, dust, rubbish, vermin and other causes.</p> <p>150 WASTE:</p> <ul style="list-style-type: none"> <li>• Remove rubbish, debris, surplus material and spoil regularly and keep the site and Works clean and tidy.</li> <li>• Remove all rubbish, dirt and residues from voids and cavities in the construction before closing in.</li> </ul> <p><b>PROTECT THE FOLLOWING:</b></p> <p>160 WORK IN ALL SECTIONS: Adequately protect all types of work and all parts of the Works, including work carried out by others, throughout the Contract. Wherever work is of an especially vulnerable nature or is exposed to abnormal risks provide special protection to ensure that damage does not occur.</p> <p>170 EXISTING SERVICES:</p> <ul style="list-style-type: none"> <li>• Notify all service authorities and/or adjacent owners of the proposed works not less than one week before commencing site operations.</li> </ul> <p style="text-align: center;">To collection</p>	GHç	P

**SECURITY/SAFETY/PROTECTION (Contd.)**

## EXISTING SERVICES: (Contd.)

- Before starting work check positions of existing services. Where positions are not shown on drawings obtain relevant details from service authorities or other owners.
- Adequately protect, and prevent damage to all services. Do not interfere with their operation without consent of the service authorities or other owners.

180 ADJOINING PROPERTY: Prevent trespass of workpeople. Take all reasonable precautions to prevent damage to adjoining property. Obtain permission as necessary from the owners if requiring to erect scaffolding on or otherwise use adjoining property, and pay all charges. Remove and make good on completion or when directed. Bear the cost of repairing any damage arising from execution of the Works.

190 ROADS AND FOOTPATHS: Adequately maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris. Any damage to roads and footpaths caused by site traffic or otherwise consequent upon the Works must be good to the satisfaction of the Local Authority or other owner. Bear any cost arising.

**A35 SPECIFIC LIMITATIONS ON METHOD/SEQUENCE/TIMING**

110 ACCESS TO THE SITE: See section A12.

120 USE OF THE SITE: See section A12.

130 SCAFFOLDING: Ensure that standing scaffolding is erected early enough and/or dismantled late enough to suit the programmes of all subcontractors.

**A36 FACILITIES/TEMPORARY WORK/SERVICES****GENERALLY**

110 LOCATIONS: Inform Project Manager of the intended siting of all spoil heaps, temporary works and services.

120 MAINTAIN, alter, adapt and move temporary works and services as necessary. Remove when no longer required and make good.

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**A36 FACILITIES/TEMPORARY WORK/SERVICES****ACCOMMODATION**

130 ROOM FOR MEETINGS: Provide suitable temporal accommodation for site meetings, adequately ventilated and lit, with table and chairs for 15 people. This room may be part of the contractor's own site office.

140 PROJECT MANAGER'S SITE OFFICE: Provide and obtain approval of suitable lockable temporal well lit accommodation and facilities as follows:

- Floor area; Approximately 16m<sup>2</sup>
- Furniture and equipment:
  - Tables with top area of approximately 3m<sup>2</sup>
  - Storage for copies of all project document
  - Lockable cupboard
  - Three chairs
- Attendance: Cleaning and general maintenance

150 CLERK OF WORKS SITE OFFICE: Provide and obtain approval of suitable lockable temporal well lit accommodation and facilities as follows:

- Floor area; Approximately 16m<sup>2</sup>
- Furniture and equipment:
  - Tables with top area of approximately 3m<sup>2</sup>
  - Storage for copies of all project document
  - Lockable cupboard
  - Three chairs
- Attendance: Cleaning and general maintenance

**TEMPORAL WORK**

160 NAME BOARD: Obtain approval for and provide a suitable temporal name board displaying:

- Title of Project
- Name of Employer
- Name of Project Manager
- If the contractor wishes, names of subcontractors.

To collection

	<p><b>A37 OPERATING/MAINTENANCE OF THR FINISHED BUILDING</b></p> <p>110 <b>THE BUILDING MANUAL:</b></p> <ul style="list-style-type: none"> <li>• The Building Manual is to be a comprehensive information source and guide for the Employer and end users providing a complete understanding of the building and its systems and enabling it to be operated and maintained efficiently and safely. The Contractor is required to obtain or prepare all the information to be included in the manual, produce the required number of copies of the manual and submit them to the project manager for delivery to the Employer.</li> <li>• The Manual is to consist of the following three parts, subsection as appropriate <ul style="list-style-type: none"> <li>Part 1: GENERAL: Content as clause 120, the information being provided to the contractor by the project manager</li> <li>Part 2: BUILDING FABRIC: Content as clause 130, plus certain as-built drawings and other information provided to the Contractor by the project manager</li> <li>Part 3: BUILDING SERVICES: Content as clause 140</li> </ul> </li> <li>• The presentation of the Manual is to be as clause 150</li> <li>• A complete draft of the manual must be submitted not less than four weeks before the date for submission of the final copies of the manual. Amend the draft Manual in the light of any comments and resubmit to the project manager. Do not proceed with production of the final copies of the manual until authorised to do so by the project manager</li> <li>• Final copies of the manual: Provide the project manager with three copies not less than two weeks before practical completion <ul style="list-style-type: none"> <li>As-built drawings: Provide three copies on practical completion</li> </ul> </li> </ul> <p>120 THE BUILDING MANUAL PART 1: GENERAL must include:</p> <ul style="list-style-type: none"> <li>• A description of the building</li> <li>• Details of all consultants and designers</li> <li>• Copies of all consents and approvals obtained.</li> <li>• Drawings showing emergency escape routes, location of emergency and fire fighting system, services shut-off valves switches, etc</li> </ul> <p style="text-align: center;">To collection</p>	GHç	P

		GH¢	P
<b>A37</b>	<b>OPERATING/MAINTENANCE OF THR FINISHED BUILDING (Contd)</b>		
130	<p>THE BUILDING MANUAL PART 2: BUILDING FABRIC must include:</p> <ul style="list-style-type: none"> <li>• Design criteria including floor loading, insulation values and and other performance requirements</li> <li>• As-built drawings recording details of construction, together with an index</li> <li>• Details of all materials, components and equipment including copies of manufactures current literature and manufactures recommendations for cleaning and maintenace</li> <li>• Names, Addreses, telephone and fax numbers of all subcontractors, supplies and manufactures</li> <li>• Copies of all guarantees, warranties and maintenance agreements offered by subcontractors and manufactures</li> <li>• Copies of all test certificates and reports required in the specification</li> </ul>		
	To collection		

140	<p>THE BUILDING MANUAL PART 2: BUILDING SERVICES must include:</p> <ul style="list-style-type: none"> <li>• A full description of each of the system installed, written to ensure that the employers staff fully understand the scope and facilities provided.</li> <li>• A description of the mode of operation of all systems.</li> <li>• Diagramatic drawings of each system indicating principal items of plant, equipment, valves etc.</li> <li>• Legend for all colour-coded services</li> <li>• Schedules (system by system) of plant, equipment, valves etc stating their locations, duties and performance figures. Each item must have a unique number cross-referenced to the record and dramatic drawings and schedules</li> <li>• The name, address and telephone number of the manufacture of every item of plant and equipment together with catalogue list numbers</li> <li>• Manufactures technical literature for all items and equipment, assembled specically for the projects, excluding irrelevant matter and including detailed drawings, electrical circuit details and operating and maintenance instruction</li> <li>• A copy of all test certificates (including but not limited to electrical circuit test, corrosion test, type test, work test, start aaand commissioning test) for the installation and plant equipment, valves, etc used in the installations</li> <li>• A copy of all manufactures guarantees, warranties and maintenance agreement offered by subcontractors and manufactures</li> <li>• Starting up, operating and shutting down instructions for all equipment and systems installed.</li> <li>• Control sequence for all systems installed</li> <li>• Schedules of all fixed and variable equipment settings established during commissioning</li> <li>• Procedures of seasonal changeovers</li> <li>• Recommendations as to the preventative maintenance established during commissioning</li> <li>• Lubrication schedules for all lubricated items</li> <li>• A list of normal consummable items</li> <li>• A list of recommended spare to be kept in stocck by the Employer being those items subject to wear or deterioration and which may involve the Employer in extend dekliveries when replacements aare required as some future date</li> <li>• Procedure for fault finding</li> <li>• Emergency procedures, including telephone numbers for emergency services</li> </ul> <p>To collection</p>	GHç	P

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**A37 OPERATING/MAINTENANCE OF THR FINISHED BUILDING (Contd)**

150 PRESENTATION OF BUILDING MANUAL: The manual is to be contained in series of A4 size, plastic covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover titled. Selected drawings needed to illustrate or locate items mentioned in the manual, where larger than A4, are to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings. The main set(s) of as buil drawings will form annex(es) to the manual

**A40 CONTRACTORS GENERAL COST ITEMS****MANAGEMENT AND STAFF**

110 MANAGEMENT AND STAFF

**A41 CONTRACTORS GENERAL COST ITEMS: SITE ACCOMMODATION**

For details of site accommodation required or made/not made available by the employer see section A36

110 POWER

120 LIGHTING

130 FUELS (excluding fuel for testing and commission)

140 WATER

150 TELEPHONE AND ADMINISTRATION

160 SAFETY, HEALTH AAND WELFARE

170 STORAGE OF MATERIALS (see A33/150)

180 RUBBISH DISPOSAL (see A34/150))

190 CLEANING (see A33/300)

200 DRYING OUT

To collection

		GH¢	P
<b>A42</b>	<b>CONTRACTORS GENERAL COST ITEMS: SERVICES AND FACILITIES (Contd)</b>		
210	PROTECTION OF WORK IN ALL SECTIONS (see A34/160)		
220	SECURITY (see A34/110)		
230	MAINTAIN PUBLIC AND PRIVATE ROADS (see A34/190)		
240	SMALL PLANT AND TOOLS		
<b>A43</b>	<b>CONTRACTORS GENERAL COST ITEMS: MECHANICAL PLANTS</b>		
110	CRANES		
120	HOIST		
130	PERSONNEL TRANSPORT		
140	TRANSPORT		
150	EARTHMOVING PLANT		
160	CONCRETE PLANT		
170			
	<b>CONTRACTORS GENERAL COST ITEMS: TEMPORAY WORKS</b>		
	For details of temporary works required or made/not made available by the employer see section A36		
110	TEMPORARY ROADS		
120	TEMPORARY WALKWAYS		
130	ACCESS SCAFFOLDING		
140	SUPPORT SCAFFOLDING AND PROPPING		
150	HOARDING, FANS, FENCING, ETC		
160	HARDSTANDING		
170	TRAFFIC REGULATIONS		

**COLLECTION**

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**BILL NR 1 - PRELIMINARIES**

Carried to General Summary

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>A: DEMOLITION AND ALTERATION</u></b>			
A	Carefully remove existing Doors, 1800 x 2400mm store for client and make good all works disturbed (In 3)		Item	
B	Ditto, size 900mm x 2100mm (In 10)		Item	
C	Carefully remove existing ceiling material, store for client and make good all works disturbed (Approximately 229 m <sup>2</sup> )		Item	
D	Carefully remove existing counter , store for client and make good all works disturbed (Approximately 10m)		Item	
E	Carefully remove existing Louvre windows, size 1800mm x 1800mm including burglar proof, store for client and make good work all works disturbed (In 6)		Item	
F	Carefully remove existing Louvre windows, size 900mm x 1800mm including burglar proof, store for client and make good work all works disturbed (In 9)		Item	
G	Carefully remove existing Louvre windows, size 900mm x 600mm including burglar proof, store for client and make good work all works disturbed (In 1)		Item	
	To Collection			<b>GH¢</b>



ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
A	Hack off existing floor finish, cart away debris from site and make good all works disturbed to new works ( measured separately) (Approximately 229m <sup>2</sup> )		Item	
B	Carefully break existing block wall, cart away debris from site and make good all works disturbed (Approximately 150 m <sup>2</sup> )		Item	
To Collection				
<u>COLLECTION</u>				
Page 1				
Page 2				
<p><b>A: DEMOLITION AND ALTERATION</b> To General Summary</p>				

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>B. NEW WORKS</u></b>			
	<b><u>CONCRETE WORK</u></b>			
	<b><u>IN SITU CONCRETE/ LARGE PRE-CAST CONCRETE</u></b>			
	<b><u>E05: IN SITU CONCRETE CONSTRUCTING GENERALLY</u></b>			
	<i>Reinforced in situ concrete: BS 5328, designed mix C25, 20mm aggregate, minimum cement content 240 Kg/m<sup>3</sup>; vibrated</i>			
A	Beams, reinforced	2	m <sup>3</sup>	
B	Vault wall	8	m <sup>3</sup>	
	<b><u>E20: FORMWORK FOR IN SITU CONCRETE</u></b>			
	<i>Sawn formwork to:</i>			
C	Sides and soffit of beam	8	M <sup>2</sup>	
D	Vertical sides of walls	58	M <sup>2</sup>	
	Reinforcement			
	<i>Mild Steel Rod Reinforcement to B.S. 785 cut, bent, hoisted and fixed in position:-</i>			
E	12mm Diameter rods in beams	47	Kg.	
F	6mm Diameter rods in do	15	Kg.	
G	12mm Diameter rods in walls	764	Kg.	
	<b><u>CONCRETE WORK</u></b>			
	To summary			

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
<b>BLOCKWORK</b>				
<u>Solid Sandcrete Block walling in cement mortar (1:3) :-</u>				
A	150mm Solid wall	50	M <sup>2</sup>	
<b>BLOCKWORK</b> To Summary				

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
<b><u>JOINERY</u></b>				
<u>All joinery shall be wrot Odum unless otherwise stated</u>				
<u>Doors</u>				
A	45mm (Finished) Hardwood panelled door overall size 900mm x 2050mm high comprising 100mm top rail and stiles, and 150mm middle rail, 225mm bottom rail open rebated and divided into three panels filled in with 25mm raised panels with architrave around it.	9	No.	
B	Ditto 800mm x 2050mm high	2	No.	
<u>Fillets, Glazing Beads and Grounds</u>				
C	12mm x 50mm Door stop	68	m	
D	1½ Pairs 100mm brass butt hinges	0	No.	
E	Mortice lock and set lever handle furniture	9	No.	
F	Ditto with W.C. indicating sign	2	No.	
To Collection				
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>COUNTER</u></b>			
	<b><u>Supply and fix</u></b>			
A	Two(2) Tier worktop fixed to 16mm thick plywood on blockwork (measured separately)	10	M <sup>2</sup>	
B	Drawers to base of counters including all necessary fixing accessories	6	No	
	<b><u>Cubicles</u></b>			
C	Construct cubicles with Aluco bond including all necessary fixing accessories size 1000mm x 1200mm x 1800mm high	8	No	
D	Construct dry wall partition with Alucobond and all necessary fixing accessories size 8000mm x 2100mm high	1	No	
	To Collection			
	COLLECTION			
	Page 7			
	Page 8			
	<b><u>JOINERY</u></b>			
	Carried to Summary			

**PLUMBING INSTALLATIONS**

**CIVIL WORKS ASSOCIATED WITH  
PLUMBING INSTALLATIONS**

A INSPECTION CHAMBERS WATER FLOW

METERS/GATE VALVES

Excavate sand construct manholes/inspection chambers from block wall and reinforced

B concrete covers. Internal dimensions 600mm x 600mm x 1.0metre complete with water proof cement mortar finishing

5

No.

To collection

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>SANITARY FIXTURES AND OTHER EQUIPMENT / FIXTURES</u></b>			
A	Dual Flush exposed cistern water closet manufactured Vitreous China with all accessories WC Pan S-trap or P-trap as indicated on contract drawing 6.0 litre Vitreous China cistern Seat and cover Fixings Use Twyford Entice or approved equal	2	Nos.	
B	Pedestal wash hand basin manufactured of Vitreous China BS3402(615mm x 470) complete with all accessories; fixing brackets, single 15mmØ chrome press-release self closing Basin in pillar tap 32mmØ waste outlet fittings and chained plug 32mmØ 75mm seal bottled P-trap made from UPVC Use Twyford Entice 600 or approved equal	2	Nos.	
C	Plastic Liquid Soap Dispenser-2 Litre	2	Nos.	
D	Disposable Paper Towel (300x250mm) unit Use Twyford or approved equal	2	Nos.	
E	Toilet roll holder screwed to wall in satin aluminium SI finish Use Twyford PB0205S1	2	Nos.	
E	Wall Mirror (650mm x 460mm) Use Twyford Type PB0383XX or approved equal	2	Nos.	
	<b><u>FIRE EXTINGUISHERS</u></b>			
G	2.2kg Carbon Dioxide Portable Fire Extinguisher to BS 3326 fixed	2	Nos.	
H	6kg Dry Chemical Powder Portable Fire Extinguisher type ABC	2	Nos.	
	To collection			

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>INCOMING WATER SUPPLY</u></b> <b><u>UPVC CLASS D PIPEWORKS</u></b>			
A	Allowance for Water Connection Charges	1	lot	
B	50mmø Water Flow Meter	1	No.	
C	50mmø Gate Valve with Connector	8	Nos.	
D	50mmø Pipe	18	m	
E	50mmø Elbow	4	Nos.	
F	50mmø Tee	6	Nos.	
G	50 × 25mmø reducers	2	Nos.	
H	25mmø Faucet Connector	2	m	
J	19mmø Faucet Connector	2	No.	
K	25mmø Ball Valve		Nos.	
L	25mmø Pipe	6	m	
M	25mmø Elbow	35	Nos.	
N	25mmø Tee	1	No.	
P	25mmø Gate Valve with Connectors	5	Nos.	
Q	25 × 19mmø Reducer	4	Nos.	
R	19mmø Pipe	1	m	
S	19mmø Gate Vale	4	Nos.	
T	19mmø Stand Pipe	1	Nos.	
U	19mmø Elbow	1	Nos.	



ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	To collection			
	<b><u>INTERNAL SOIL / WASTE WATER DRAINAGE UPVC CLASS B PIPEWORKS</u></b>			
A	100mmø Bend	8	Nos.	
B	100mmø Pipe	12	m	
C	100mmø Single Swept Branch	3	Nos.	
D	100mmø Vent Cowl/Cap	1	Nos.	
	To collection			

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>COLLECTION</u></b>			
A	CIVIL WORKS ASSOCIATED WITH PLUMBING INSTALLATIONS			
B	SANITARY AND OTHER EQUIPMENT FIXTURES			
C	INCOMING WATER SUPPLY UPVC CLASS D			
D	INTERNAL SOIL WATER DRAINAGE UPVC CLASS B PIPEWORKS			
	<b><u>PLUMBING INSTALLATION</u></b> Carried to Summary			GH¢

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>ELECTRICAL INSTALLATIONS</u></b>			
A	12-Way 100A TP MCB main Switch Distribution Board complete with 10kA MCBs 6Nos. 10A SP 6No. 20A SP 12Nos. 32A SF	1	No.	
	<b>LV DISTRIBUTION BOARDS</b> To collection			

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
<b><u>INTERNAL LIGHTING</u></b>				
A	4 x 28W T'5 Fluorescent Luminaire with electric ballast LG3 Cat. 2 louvre and radio interference filter	12	Nos.	
B	2D 16W IP43 nCompact Fluorescent Lamp with die cast aluminium body.	0	Nos.	
Flush Mounted 10A Plate Switch				
C	1-Gang 1-way	4	Nos.	
D	1-Gang 2-way	4	Nos.	
E	2-Gang 1-way	12	Nos.	
Conduit boxes				
F	Circular boxes with cover as draw points	10	Nos.	
G	75 x 75 x 35mm boxes	25	Nos.	
H	Ceiling Roses	18	Nos.	
J	25mm x 40mm Trunking	200	m	
1 x 1.5mm <sup>2</sup> pvc insulated copper Cable				
K	Red	150	m	
L	Black	150	m	
M	Yellow / Green	150	m	
N	1400mm Sweep Ceiling Fan complete with Regulator	14	Nos.	
<b><u>INTERNAL LIGHTING</u></b>				
To collection				

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>POWER DISTRIBUTION</u></b>			
A	13A Switch Socket Outlet 2-Gang	18	Nos.	
B	Automatic Hand Drier	0	Nos.	
C	1 × 2.5mm <sup>2</sup> pvc insulated copper cable Brown	150	m	
	Blue	150	m	
	Yellow / Green	150	m	
D	1 × 4.0mm <sup>2</sup> pvc insulated copper cable Brown	120	m	
	Blue	120	m	
	Yellow / Green	120	m	
E	Conduit boxes 75 × 75 × 35mm	14	Nos.	
	136 × 75 × 35mm	10	Nos.	
	<b><u>POWER DISTRIBUTION</u></b> To collection			

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<b><u>DATA &amp; VOICE INSTALLATIONS</u></b> (Total Number of Network Points = 30)			
	<b>Supply, assemble and connect data through block wall, on cable carrier tray and ceiling measured separately. Note: voice/data cable shall be run direct to server room from all outlets</b>			
A	Supply and install CAT 6 <b>twin faceplate</b> outlet on buried conduit box (for data/voice network , etc).	21	pcs	
B	Supply and install CAT 6 <b>twin</b> RJ 45 keystone jack in buried conduit box (for data/voice network, etc).	33	pcs	
C	Supply and install/bury conduit Box (75mm x 75mm) into various points to meet buried 25mm pvc pipe	21	pcs	
D	Supply 24-Port Patch Panel (CAT 6) Rackmount with Instruction manual	1	pcs	
E	Supply and install 12-Port layer 2 Gigabit Managed Switch with following minimum technical specifications: 24 RJ-45 autosensing 10/100/1000 PoE ports with 1 serial console port. Mounts in an EIA-standard 19-inch telco rack. throughput: 35.7 million pps. switching capacity: 48 Gbps. MAC address table size: 8,000 entries, input voltage and frequency : 260 VAC/50Hz, PoE power: 195 W, Command-line interface and web management, configuration menu; out-of-band management (serial RS-232C), protocols: VLANS, LLDP, SNMP, IEEE 802.1x, etc	1	pcs	

F	Supply 2.4 ghz 802.11b/g/n Enterprise Wifi Access Points with Controller	1	pcs	
G	Supply and install CAT 6 RJ 45 plugs to construct short patch cords	30	pcs	
H	Supply and install boot sleeves on both ends of patch cords to connect switch and patch panel.	30	pcs	
	To collection			
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
A	Supply and install preterminated patch cord from network point to clients devices in various offices (minimum length of 3m)	9		
B	Supply and install CAT 6 UTP cable to lay in the pvc pipe from the patch panel in the IT/server rack to the CAT 6 faceplate outlets.	3	box	
C	Supply and install 25 mm x 40mm Trunking conduit for data network	30	pcs	
D	Supply and install Power Distribution Unit with 8-Way Horizontal Surge protector, Rack Mount	3	pcs	
E	Supply and install 25 mm x 40mm Trunking conduit for cable passage	30	pcs	
F	Termination of CAT 6 UTP cables as specified and supply test reports.	30	pcs	
G	Terminate and label CAT 6 UTP cable end on RJ 45 outlet and on Patch Panel.	30	pcs	
H	Installation, configuration and testing of wifi equipment	1	Lot	
	To collection			
	<u>COLLECTION</u>			

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**DATA & VOICE INSTALLATIONS**

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
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**COLLECTION**

LV Distribution

Internal Lighting

Power Distribution

Data & Voice Installation

**ELECTRICAL INSTALLATIONS**

TOTAL CARRIED TO SUMMARY



ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
<b><u>METAL WORKS</u></b>				
<u>GLAZED ALUMINIUM WINDOWS</u>				
A	Aluminium framed glazed sliding window overall size 1850mm x 1800mm	6	No	
B	Aluminium framed glazed sliding window overall size 900mm x 1800mm	8	No	
C	Aluminium framed glazed sliding window overall size 900mm x 450mm	2	No	
<u>DOORS</u>				
<u>SECURITY DOOR</u>				
D	1000mm x 2100mm Security door with and including all necessary accessories	3	No	
E	1800mm x 2100mm Security door with and including all necessary accessories	1	No	
<u>GLAZED SWING DOORS</u>				
F	1800mm x 2550mm Glazed aluminium swing doors	1	No	
G	900mm x 2550mm Glazed aluminium swing doors	2	No	

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
H	<u>BURGLAR PROOF &amp; BALUSTRADE</u> Supply and fix metal burglar proof to windows as directed by Project Architect	20	M <sup>2</sup>	
	<b>METAL WORKS</b> To summary			
	<b><u>PLASTERWORK AND OTHER FLOOR, WALL AND CEILING FINISHINGS</u></b>			
	<u>12mm Cement and sand (1:4) rendering as described on concrete or block wall internally</u>			
A	Wall	288	m <sup>2</sup>	
	<u>PLASTERBOARD</u> <u>Supply and fix</u>			
B	Plasterboard to hardwood including all necessary fixing accessories.	375	M <sup>2</sup>	
	<u>Plastic T &amp; G</u> <u>Supply and fix</u>			
C	Plastic T & G including fixing to hard wood	82	M <sup>2</sup>	
	<u>Polished Porcelain</u>			
D	600mm x 600mm polished porcelain floor tiles laid laid on screeded bed( measured separately)	375	M <sup>2</sup>	
E	600mm x 600mm non polished porcelain floor tiles laid laid on screeded bed( measured separately)	94	M <sup>2</sup>	
	<u>WALL TILES</u>			

F	250mm x250mm x 6mm Thick white glazed cushion edge ceramic wall tiles to BS 1281 bedded on and pointed in neat white cement on screeded backing (measured separately)	74	M <sup>2</sup>	
G	Ditto skirting 95mm wide x 30mm thick cast in convenient lengths do.  To collection	448	m	
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
<b><u>PLASTERWORK CONT'D</u></b>				
<b><u>SCREEDED BED AND BACKING</u></b>				
<b><u>Cement and sand mortar (1:4) as described :</u></b>				
A	12mm Screeded backing to receive glazed wall tiles	74	M <sup>2</sup>	
B	38mm Screeded bed to receive floor tiles	469	M <sup>2</sup>	
To collection				
<b><u>COLLECTION</u></b>				
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**PLASTERWORK AND OTHER FLOOR,  
WALL AND CEILING FINISHINGS**

To summary

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
<b><u>PAINING AND DECORATION</u></b>				
	<u>Prepare and apply one coat of aluminium wood primer to back of joinery before fixing</u>			
A	General surfaces not exceeding 300mm girth	34	m <sup>2</sup>	
	<u>Scrape off existing paint, apply a stabilizing solution Prepare and apply three coats of Acrylic Emulsion paint on</u>			
B	Rendered Walls	688	m <sup>2</sup>	
	<u>Scrape off existing paint, apply a stabilizing solution Prepare and apply three coats of Weathered Acrylic Emulsion paint on</u>			
C	Rendered Walls	544	m <sup>2</sup>	
	<u>Knot, prime stop and apply two undercoats and one finishing coat of gloss oil paint on:</u>			
D	General surfaces of wood	28	m <sup>2</sup>	
E	Ditto not exceeding 300mm girth	18	m <sup>2</sup>	

F	<p><u>Prepare and apply sandy-sealer and two undercoats and one finishing coat of polyurethane lacquer on:</u></p> <p>General surfaces of wood</p> <p style="text-align: center;"><b><u>PAINTING AND DECORATION</u></b> Carried to Summary</p>	54	m <sup>2</sup>	
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<p style="text-align: center;"><b><u>SUMMARY</u></b></p> <p>CONCRETE WORKS</p> <p>BLOCKWORK</p> <p>ROOFING</p> <p>CARPENTRY</p> <p>JOINERY</p> <p>PLUMBING AND ENGINEERING INSTALLATION</p> <p>ELECTRICAL INSTALLATIONS</p> <p>METAL WORK</p> <p>PLASTERWORK AND OTHER FLOOR, WALL AND CELING FINISHINGS</p> <p>PAINTING AND DECORATING</p>			

**MAIN BUILDING**  
To General Summary

**GH¢**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>RATE</b>
	<b>C. EXTERNAL WORKS</b>			
	<b><u>SEPTIC TANK &amp; MANHOLES</u></b>			
	<b><u>EXCAVATION AND EARTHWORKS</u></b>			
	<b><u>Starting from ground or reduced level</u></b>			
A	Surface average 150mm deep to remove vegetable soil	48	M <sup>2</sup>	
B	Excavate pit commencing at reduced level and not exceeding 1.50m deep	56	M <sup>3</sup>	
C	Ditto, exceeding 1.50m maximum depth not exceeding 3.00m deep	56	M <sup>3</sup>	
D	Ditto, exceeding 3.00m maximum depth not			

	not exceeding 4.50m deep	42	M <sup>3</sup>	
E	Backfill and well ram selected excavated materials around foundation in 150mm layers well consolidated	38	M <sup>3</sup>	
F	Remove surplus excavated materials from site	116	M <sup>3</sup>	
	To Collection			
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	<u>Concrete (Grade 21.00N/mm<sup>2</sup>-20mm aggregate) in:-</u>			
A	Base of septic tank	12	M <sup>3</sup>	
	<u>REINFORCED VIBRATED CONCRETE</u>			
	<u>Concrete (Grade 21.00N/mm<sup>2</sup>-20mm aggregate) in:-</u>			
	Columns	5	M <sup>3</sup>	
B	150mm Thick Slab	28	M <sup>2</sup>	
C	Concrete covers size 750mm x 750mm x 50mm thick including formwork and reinforcement	3	No	

To Collection

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	Reinforcement			
	<u>Mild Steel Rod Reinforcement to B.S. 785 cut, bent, hoisted and fixed in position:-</u>			
A	12mm Diameter rods in slab	584	Kg.	
B	16mm Diameter rods in beams / Columns	223	Kg.	
C	10mm Diameter rods in do	75	Kg.	



ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	To Collection			
	<u>FORMWORK</u>			
	<u>Sawn Formwork to</u>			
A	Soffits of suspended floor slab	0	M <sup>2</sup>	
B	Edges of floor slab 150mm high	19	M	
	<u>BLOCKWORK</u>			
	<u>Sandcrete BlockWalling in cement mortar (1:3)</u>			
C	150mm Solid wall	112	M <sup>2</sup>	
	<u>PLASTERWORK AND OTHER FINISHINGS</u>			
	<u>Portland cement mortar (1:4) as described:-</u>			
D	20mm Rendering to concrete or block wall	142	M <sup>2</sup>	
E	50mm Level paving on concrete trowelled hard and smooth and finished with wood float	28	M <sup>2</sup>	

	To Collection			
D	20mm Rendering to concrete or block wall	142	M <sup>2</sup>	
E	50mm Level paving on concrete trowelled hard and smooth and finished with wood float	28	M <sup>2</sup>	
	To Collection			
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	COLLECTION			
	Page 2/ 23			
	Page 2/ 24			
	Page 2/ 25			
	Page 2/26			
	<b>SEPTIC TANK&amp; MANHOLES</b> To summary			<b>GHC</b>

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ITEM	DESCRIPTION	QUANTITY	UNIT	RATE
	SUMMARY			
	SEPTIC TANK& MANHOLES			

**C. EXTERNAL WORKS**

To General Summary

AMOUNT (GH¢)

AMOUNT (GH¢)

AMOUNT (GH¢)

AMOUNT (GH¢)









AMOUNT (GH¢)

AMOUNT (GH¢)





AMOUNT (GH¢)



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<b>AMOUNT (GH¢)</b>

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AMOUNT (GH¢)
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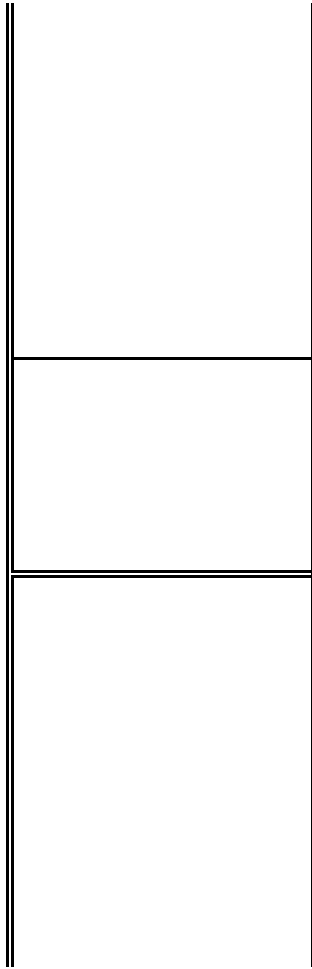




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AMOUNT (GH¢)





**THE REHABILITATION OF EXISTING TARKWA POST OFFICE  
TARKWA - WESTERN REGION FOR GHANA POST**

**GENERAL SUMMARY**

**BILL NO. 1** GENERAL CONDITIONS OF CONTRACT AND PRELIMINARIES =

**BILL NO. 2** MEASURED WORKS:-

A. DEMOLITION AND ALTERATION =

B. MAIN BUILDING =

C. EXTERNAL WORKS =

***SUB-TOTAL*** =

**ADD:** INSURANCE AGAINST INJURY TO PERSONS AND PROPERTY  
REQUIRED AS PER CONTRACT CONDITION =

**ADD:** 10% OF SUB-TOTAL 1 AS PROVISIONAL SUM TO COVER  
CONTINGENCIES IN TERMS OF VARIATIONS IN DESIGN =

**TOTAL COST OF CONSTRUCTION**                      **GH¢**  
Carried to Grand Summary

SIGNED: .....

ON BEHALF OF CONTRACTOR

.....

DATE: .....

<b>AMOUNT GH¢</b>