



**REPUBLIC OF LEBANON  
MINISTRY OF ENERGY AND WATER**

**CENTER D'INFORMATION ET DE FORMATION AUX  
METIERS DE L'EAU (CIFME)**

**Tender Documents**

**Volume 3 – Bill of Quantities**

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## **Bill I - Architectural Works & Bill II – Civil Works**

- **Preamble**

**Preamble to Bill of Quantities – Bill I: Architectural Works & Bill II: Civil Works****GENERALLY**

The Bills of Quantities herein, including all notes and instructions, form an integral part of the Contract Documents. However, the descriptions contained in the Bills of Quantities for each item are not necessarily complete. The Contractor is referred to the Conditions of Contract and other Documents, Specifications, Client's requirements and Drawings as well as relevant Standards and Codes of Practice for further information as no claim or variation will be considered on account of the Contractors' failure to do so.

Amendments shall not be made to these documents without authority, in writing, by the Engineer.

The Tenderer should note that the total of all the items in the Bills of Quantities including amounts in respect of Provisional Sums must be equal to the total shown in the Form of Tender against such Bills of Quantities.

It is the Contractor's responsibility to insert the correct rates against each item in the unit rate column of the Bills of Quantities. Omitted items or incorrectly inserted rate shall be the sole responsibility of the Contractor.

These Preamble clauses shall be read in conjunction with the Conditions of Contract, Tender Drawings, Specifications and Client's requirements, and they shall not be considered as exhaustive but merely as highlighting certain points. These documents shall be taken as mutually explanatory of one another.

General directions and descriptions of work and materials given in the Specification are not necessarily repeated in these Bills of Quantities. Reference shall be made to the Specifications for this information. The rates for each item must be comprehensive and must include for complying with the Specifications, and all obligations under the Contract including all matters and things necessary for the proper construction, completion and maintenance of the Works. No claims for additional payment will be allowed for any error or misunderstanding by the Contractor of the work involved.

Where items in the Bills contain the phrase "as specified", the Contractor shall refer to the Specifications and the Drawings for the full description and the Contractor shall include in his rates for complying with this clause whether the phrase "as specified" appears in the text or not. Where the word "allow" occurs the cost of the item shall be at the risk of the Contractor.

**PRICING**

The rates to be inserted in the Bills of Quantities are for those works referred to in the Tender Documents and shall cover the execution, completion and maintenance of the Works, finished complete in every respect and shown and described in the Tender Documents. The rates for each item must allow for all costs and expenses in complying with all general risks, liabilities and obligations set forth in the Drawings, Specifications and Conditions of Contract, including but not limited to the following:

- i. The Contractor is to include overhead charges and profit.
- ii. The Contractor is to include costs for materials, goods, consumables and all associated costs.
- iii. The Contractor is to include costs for labour, supervision and all associated costs. Including Payment of wages and salaries for skilled and unskilled labour, supervisory staff (including Agent, engineers, surveyors, technicians, general and other foremen, gangers, timekeepers, clerks, mechanics, etc.) whether local or expatriate staff, and for all official holidays and vacations, sick leave, indemnities, bonus, social security insurances, including all remunerations and other incidental payments pertinent to the works.

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- iv. The Contractor is to include costs for fitting and fixing of materials and goods in position.
- v. The Contractor is to include costs for all constructional plant, lifting equipment, transport facilities, vehicles, tools and services, etc. required for the proper execution of the Works. This responsibility shall include shipment, customs clearance, off-loading, loading and handling and transportation to the site. The facilities shall include the protective clothing and safety equipment (PPE) of operators.
- vi. The Contractor is to include costs to provide, erect, maintain, dismantle and clear away at completion proper and adequate scaffolding, as specified. Contractor shall include all requirements of subcontractor, including, but not limited to, adaptations, to suit the Works.
- vii. The Contractor is to include costs for restriction of working areas and procedures.
- viii. The Contractor is to include costs for applicable taxes, duties, charges, government levies, landing charges, transport and the like.
- ix. Payment of all state dues, duties, fees and charges, customs or other import duties, harbour wharfage and port dues, landing, quay and storage charges and any other local charges or dues applicable on all plant and materials imported for the purpose of incorporating the same into the Works.
- x. All temporary work required (including any that may be required by sub-contractors whether nominated or otherwise and other specialist Contractors under separate contract with the Employer), shifting, altering and adapting such temporary works as may be required during the progress of the Works and removing at completion and making good any surface disturbed.
- xi. During the progress of the Works, records of all details and dimensions of the Works as constructed and shall at any time, submit such records to the Engineer as he may require.
- xii. In addition to those records which are specifically required by the Specification (e.g. test cubes of concrete, air temperature, etc.,) a site record shall be kept of the completion dates of the various works in each trade, with particular reference to work which requires time for drying out, such as solid backgrounds which receive insitu screeds and finishing's, including the completion time of the individual layers of each application. The Contractor shall arrange for the original to be signed by the Engineer each calendar month, and for a copy to be issued to the Engineer at site meetings.
- xiii. The Contractor shall supply all reports as required under the Contract and as per the Employer / the Engineer's request.
- xiv. The Contractor is to include costs in providing adequate protection against any form of damage or deterioration for all sections of the Works. This shall include protective tapes, casings, guard rails, barriers and the like which shall be provided, if necessary. Particular care shall be taken to mask self finished surfaces during the application of adjacent insitu work, and windows and doors during the application of sprayed finishes. In pursuance of his obligations under the Conditions of Contract, the Contractor shall, whenever required or directed by the Engineer, cover up and protect the works from inclement weather and from damage by his own or other workmen performing subsequent operations and clear away the same on completion.
- xv. The Contractor is to include costs in taking all necessary precautions to protect buildings, fences, roads, passages, culverts and other apparatus, if found, and he shall not demolish or remove any of these works except according to specific instructions by the Engineer.

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- xvi. The Contractor is to include costs for a condition survey by the Contractor of adjacent structures in the presence of the Engineer both before and after the provision of supports. The Contractor shall be responsible for the reinstatement or repair of any adjacent structures damaged as a result of the execution of the Works.
- xvii. The Contractor is to include costs in taking adequate precaution against fire throughout all the Contractor's and Sub-contractor's operations
- xviii. The Contractor is to include costs in maintaining the whole area of his operations in a clean tidy and safe conditions throughout the project construction period by arranging his materials and workmanship. Debris etc., shall be systematically cleared off the working areas as it accumulates and if not removed directly from the site shall be deposited at the collection points allocated by the Engineer pending remove from the site. This clause in no way invalidates the contractor's obligation under clauses the General Conditions of the Contract. The Contractor shall restrict his activities to the defined site area or any other area for which they have permission to use.
- xix. The Contractor is to include costs in taking precautions to minimise nuisance arising from noise, dust, etc. The Contractor shall be held responsible for any nuisance caused by his workmanship, noise, pollution, dust, etc. The Contractor is to submit to the Engineer his proposals for approval.
- xx. The Contractor is to include costs in providing at all times for the duration of the Contract, all such chainmen, staff and survey instruments as may be required for the proper construction of and completion of the works.
- xxi. The Contractor is to include costs for thoroughly cleaning all buildings and landscaped areas, wash down windows and generally clean the works to be ready for occupation prior to handing over all to the approval of the Engineer.
- xxii. The selected Contractor will be required to provide the Engineer a full and more detailed Tender price breakdown upon being awarded the Contract. This tender price breakdown is to show the actual calculations of the General Requirements, the labour, plant and materials cost of the works, the build-up of measured rates with on costs and overheads and profit and any other allowances used to arrive at the Accepted Contract Amount.
- xxiii. The Contractor is to include costs in taking all reasonable and proper steps for protection and maintenance of all public and private roads adjacent to the Site which can be affected due to the performance of the Works in accordance with the Engineer's instructions. The roads shall be kept free for access at all times.
- xxiv. The Contractor shall submit to Engineer / Employer with 3 sets (black and white) hard copy and 3 CDs of scanned copy of the complete Contract Documents within 5 days of receipt of the fully signed Contract.

The prices and rates entered by the Contractor against items in the Bills of Quantities shall apply throughout the duration of the Contract until the issuance of the Taking Over Certificate to the execution of these items in any location and, except where otherwise provided for, to any additional work ordered by the Engineer and/or the Employer.

A price or rate is to be entered against each item in the Bills of Quantities and any item left unpriced will be deemed to be included for elsewhere in the Bills of Quantities and hence omitted items or incorrectly inserted rate shall be the sole responsibility of the Contractor.

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These rates shall be the full inclusive value of the work described under the several items including all costs and expenses which may be required in and for the construction of the work described. The costs and expenses of all the general risks, liabilities and obligations, set forth or implied in the conditions of contract shall be deemed to be included in the rates for the work

The Contractor shall be deemed to have fully considered all the conditions, obligations and requirements of the Tender Documents before entering the respective rates against the items included in the Bills of Quantities.

Rates should be entered against all priceable items included in the Bills of Quantities, whether quantities are stated or not. Lump sums covering more than one item shall not be given. Items against which no rate is entered will be considered as included and covered by the other rates in the Bills.

The unit rates shall be deemed to include for the cost of preparing the tender, all costs associated with the preparation of the final account, all other establishment charges and on-costs of whatever nature. No claim for additional payment will be allowed for any error or misunderstanding by the Contractor in this respect.

Builder's work in connection with specialist sub-contractors is deemed to be included in the rates for those sub-contract works. The Contractor must obtain particulars of the position in which chases, holes, mortises, etc., will be required to avoid any unnecessary cutting away. No claims will be considered for the extra cost of cutting away work already built in consequence of any neglect on the part of the Contractor to obtain sufficient particulars beforehand.

The prices shall be comprehensive and must include for complying in all respects with the Instructions to Tenderers, Conditions of Contract, Specifications and Drawings and for all matters and things necessary for the proper construction, completion and maintenance of the whole of the Works. No claims for additional payment will be allowed for any error or misunderstanding by the Contractor of the Work involved.

Lump sums shall not be given where unit rates are applicable.

Where the word “allow” is used, the cost of the item shall be the responsibility of the Contractor.

The amounts set against any item of overhead shall include for all costs in connection with letters of credit, bank charges, interest charges and insurance after the materials, come under the control of the Contractor.

The rates inserted will be used to determine the amount of the Contractor's Interim Payments.

The Tenderer shall submit the analysis of the “Contract Price” with a full and detailed rate breakdown of all the BOQ items including spare parts items, together with their tender submission. The breakdown is to show the actual calculations of the General Items, labour, Plant and Materials, Cost for the Works, the build-up of measured rates with on-costs and overheads and any other allowances used to arrive at the Tender Price. In addition the Tenderer/Contractor will be required to provide the Engineer within 48 hours with a full and detailed breakdown/ any other information if requested.

**VARIATIONS**

The rates inserted in the Bills of Quantities with the application of the adjustment item will be used to value any variations to the work, whether omissions or additions. The Contractor shall not be entitled to payment for profit and overheads on the value of the Works omitted (including Provisional Sum items).

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The rates in the appropriate section shall include for design of the elements as specified in the Contract and for providing working drawings, shop drawings, schedules, specifications, calculation, etc and for obtaining the Engineer's approval.

**TENDERER'S PRICE ADJUSTMENT**

The adjustment item shown on the General Summary page, if any, shall apply to all Bills (excluding Provisional Sums) unless clearly indicated otherwise. In the event that a Contract is awarded on the basis of this tender, the Adjustment Item, calculated as a percentage of the total tendered sum or the total for the Bills indicated, shall be applied to all rates and items as entered in the Bills of Quantities (including any addenda) and the Contract shall be signed based on the inclusion of the adjusted rates and items. During this Contract, the adjusted rates and items shall be applied during any remeasured works and in the Valuation of Variation Orders.

**QUANTITIES**

The Drawings, Specifications and all other Contract Documents are complementary and if any item is included in any one of them, it shall be considered as if it is included in all of them.

Notice is drawn to the fact that the quantities provided in the Bills of Quantities are approximate and for indicative purpose only and the Tenderer should check the same against the information provided in the Drawings, Specifications and other Tender Documents including checking the Site conditions.

Should the Tenderer feel that adjustments of any quantities or the addition of any further items are necessary, he shall itemise all such differences or missing items in the Tenderer's Adjustment Schedule immediately at the end of the Bill of Quantities giving full details of revised quantities, descriptions, rates and extensions.

**METHOD OF MEASUREMENT**

The quantities in the Bills of Quantities have been prepared generally in accordance with POM(I) 'The Principles of Measurement (International). The description of each item (which description shall imply references to any heading, sub-heading, preamble or other clause of item which shall apply) shall be held to include all claims, materials, workmanship, including all taxes, duties, charges, all Government levies, landing charges, transport, profit and overheads and all other incidental costs to complete the Works.

**UNITS OF MEASUREMENT**

The units of measurement adopted in the Bills of Quantities shall prevail throughout the Contract notwithstanding any trade, local or general custom and shall be used in the adjustment of all measured variations or further measurement or remeasurement. All works shall be measured net as fixed and finished in accordance with the Drawings and no allowance made for waste.

The Units of measurement used herein are

Volume : Cubic Metre (m<sup>3</sup>)

Area : Square Metre (m<sup>2</sup>)

Length : Linear Metre (m)

Number : nr / no



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Weight : Kilogram/Tonnes (kg/T)

Lump sum : item / LS / Sum

Group : group

Set : set

Provisional Sum : PS

Pair : pair

Duration : months

In item descriptions, dimensions involving metres are given in metres (Abbreviated m) parts of a meter are given in centimetres (Abbreviated cm) or millimetres (Abbreviated mm). In certain descriptions dimensions may be given in British Units viz. inches (Abbreviated in or ").

The Contractor shall not use these Bills of Quantities as a construction programme or for the purposes of ordering materials or arranging sub-contracts. The references for these activities shall be the Drawings, Specifications and instructions issued by the Engineer.

These preambles are to be read in conjunction with the item descriptions in the Bills of Quantities.

‘As described’ means as described in the Specifications.

**ABBREVIATIONS**

In the Specification and Bills of Quantities the following abbreviations have the meanings hereby assigned to them :

B.S.	means the specification issued by the British Standards Institution.
C.P.	means the Code of Practice issued by the B.S.I.
AASHTO	means the specification issued by the American Association of the State Highway and Transportation Officials
ASTM	means the specification issued by the American Society for Testing and Materials.
POM(I)	means Principles of Measurement International for works of Construction dated June 1979 published by the Royal Institution of Chartered Surveyors, 12 Great George Street, Parliament Square, London SW1P 3AD, UK amended to suit local practice and conditions
PD	means British Standard Provisional Document
DD	means British Standard Draft for Development
Approved/Approval	means approved by or approval of the Engineer in writing
Submitted/Submit	means submitted to or submit to the Engineer in writing
Accepted/Acceptance	means accepted by or acceptance of the Engineer in writing

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Inspected/Inspection	means inspected by or inspection of the Engineer
Directed	means directed by the Engineer in writing
Authorised/Authority	means authorised by or authority of the Engineer in writing
Required	means required by the Engineer in writing
Rejected	means rejected by the Engineer in writing
In writing	above shall also mean verbally later confirmed in writing
O.O.E.A.A.	means or other equal and approved
mm	Millimetre
m	Linear metre
m <sup>2</sup> or m2	Square metre
m <sup>3</sup> or m3	Cubic metre
kg	Kilogramme
KN	Kilo Newton
MPa	Mega – Pascal
no	Number
pc	Piece or number

**MATERIALS AND WORKMANSHIP**

Tenderers are referred to the specification forming part of the contract documents, together with the notes on all the contract drawings for the standard of materials and workmanship to be used in construction.

Where not elsewhere defined, standards are to be not less than those specified in relevant Standards and Codes of Practice currently in force.

Rates for various items throughout the Bills of Quantities shall include, unless otherwise stated or measured, for cutting of every description and the consequent waste, for work in girths, widths or heights of less than 300 mm and for all short lengths.

Rates for all work shall include for protection and provision of samples.

All measurements are net and the rates shall include for all laps, waste, working space and trade or traditional allowances.

The pricing of materials shall take account of the following:

- i. Pricing Preambles and Specifications shall apply reciprocally between sections of the works unless otherwise described
- ii. Materials shall be of the quality specified unless otherwise directed by the Engineer.

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- iii. All materials shall be transported, handled, stored and fixed in accordance with the printed instructions or recommendations of their manufacturers or suppliers.
- iv. Protection of completed work, all casings and temporary coverings and making good, cleaning and polishing and clearing away upon completion.

**EMPLOYER SUPPLIED AND FIX ONLY MATERIALS**

The expressions “Employer Supplied Materials” and “Fix Only” shall mean the items or equipment, which have been procured by the Employer and delivered to the Contractor at site, wherein the Contractor has to take delivery of, unload, hoist, store, protect, distribute, install, test, commission and maintain them including any necessary materials & labour and property works required for completion and as a part of the project, described in specification, in contractual drawings and the Bill of Quantities.

The Engineer shall specify these items including all accessories, which are required to complete the installation as detailed in drawings, specification or Bill of Quantities. The details of material, quantities, supplier's information and delivery details shall be issued to the Contractor when they are finalized. The Contractor shall quantify the material required for Employer supplied fix only items in sufficient time to allow a reasonable procurement period for the Employer. The Contractor shall also indicate on their Clause 8.3 Programme when these fix only items are required.

The Contractor's responsibilities shall include but not be limited to the following:

- i. Delivery of Employer procured material shall be agreed upon during the approval of construction programme.
- ii. Verification of quantities of materials prior to placing of orders with the suppliers and advice the Engineer if there are any discrepancies.
- iii. Notify the Engineer in advance if there are any delays in delivery of material/equipment, which may affect the completion of works according to the programme.
- iv. Receive samples of materials delivered to site and installation of samples according to manufacturer's recommendation or specification or as detailed in drawings and obtaining of Engineer approvals of all materials included as fix only in his B.O.Q.
- v. Allow builders' work in connection with installations.
- vi. On receipt of materials supplied by Employer at site, the Contractor shall unload, check for shortages, breakages, damages or any failures and notify the Engineer within five working days.
- vii. The Contractor shall not accept any deliveries or materials on site which are not properly packed or identified.

Examples: Light fixtures shall be delivered to the site stores with proper labels identifying manufacturers catalogue numbers and the fitting reference numbers as Type A, B, C, D, ... etc. as detailed in the purchase order. The accessories such as diffusers, reflectors, ballast, transformers and lamps, which are part of the fixtures, should also be labelled to avoid confusion during issue of material and installation.

Sanitary fittings shall be delivered to the site stores with all identification labels on them for Make/Type where they are to be installed having toilet numbers/building references. The mixers for sanitary appliances shower assemblies, W.C. assemblies etc. shall also be labelled as sanitary fixtures.

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- viii. The Contractor shall be held responsible for any losses, breakages and damages to material once he has confirmed acceptable delivery to site.
- ix. Maintain schedules of materials delivered to the site and the material installed with a proper inventory.
- x. Coordinate with the Subcontractors and issue materials as they are required on the site.
- xi. Make necessary arrangements for protection of installed materials.
- xii. Verify the quantities of material as per approved shop drawings/specification /as required on site to complete the installation prior to placing of orders with the suppliers.
- xiii. Check delivery orders and advise suppliers if there are any additional items/missing accessories required for the installation at the time of delivery.
- xiv. Contractor shall issue a complete set of shop drawings to the Engineer to verify the final quantities of material in order to procure material on time to suit the construction programme. The MEP Contractor shall allow sufficient time for procurement, anticipating the delivery period of materials and obtaining of approvals of shop drawings.
- xv. Contractor shall issue a complete set of as built drawings to the Engineer.
- xvi. Contractor shall be responsible for any losses, breakages and damages to material during distribution or installation.
- xvii. Install samples of material to the satisfaction of the Engineer.
- xviii. Install materials or equipment as per manufacturer's recommendations or as detailed in drawings/specifications.
- xix. Allow for all fixings such as anchors, screws, bolts, washes and nuts.
- xx. MEP contractor shall allow for Antifungal mastic around all sanitary fixtures as necessary to the approval of the Engineer.
- xxi. Test and commission of fixtures or equipment and notify the Engineer for any defects found.
- xxii. Handover installed items to the Engineer.

**SUPPLY ONLY**

The expression "supply only" used in these Bills of Quantities means that the Contractor is to provide for everything as defined in Clause GP4.1 of POM (I) in connection with such items except fixing in position. All such items are to be delivered to site and stored in accordance with the Engineer's instructions.

**SUB- CONTRACTORS**

Any sub- contractors which the Contractor proposes to use for the works are subject to the approval of the Engineer.

The Contractor should ascertain from sub- contractors and suppliers before the work is put in hand particulars of positions in which chases, holes, mortises and the like will be required to be formed or left. No claim for the extra costs of cutting away work already built due to the Contractor's failure to ascertain these particulars will be admitted.

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Any sub-contractor who has not been approved by the Engineer shall not be used in connection with the carrying out of the Works.

The Contractor shall allow for any additional costs incurred due to sub- contractors working different hours from and extended hours to those worked by the Contractor.

The word “attendance” means the following :

Attendances to be provided by the Contractor

The Contractor shall be responsible for providing, including but not limited to, the following attendances:

- i. Use of Contractors administrative arrangements
- ii. Use of Constructional Plant
- iii. Use of Contractor’s Mess Room, Sanitary and Welfare Facilities
- iv. Co-ordination and scheduling of all works related to each sub-contract
- v. Use of any type of Scaffolding
- vi. Use of Temporary Works including water and electricity
- vii. Supplying full size setting out templates
- viii. Giving and marking dimensions and taking responsibility for their accuracy.
- ix. Space for Contractors Office and Stores
- x. Providing working space
- xi. Offloading Sub-Contractors materials distribution, hoisting/lifting and placing in secure storage facilities with lighting and power.
- xii. Clearing away rubbish
- xiii. Other necessary attendance and usual facilities, documentation, general intertrades attendances, labour and assistance.
- xiv. Use of temporary roads, pavings, paths, standing and special scaffolding, hoisting/cranage plant, lighting and water, offices, office facilities and sanitary facilities
- xv. Protecting the work on completion
- xvi. Opening and maintaining letters of credit, pre-payment, etc.
- xvii. Any special Attendance required required for the completion of the works

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Rates for Assistance by the Contractor in respect of work by Nominated Sub-Contractor or Government or Public Authority shall include, but not be limited to:

- i. Use of Contractor's administrative arrangements.
- ii. Use of constructional plant.
- iii. Use of Contractor's facilities, including messrooms, sanitary accommodation and welfare facilities.
- iv. Use of temporary works.
- v. Space for Sub Contractor's or Authority's offices and stores.
- vi. Clearing away rubbish.
- vii. Scaffolding, including the provision, maintenance and removal of any special scaffolding required.
- viii. Unloading, distributing and placing in position all plant, machinery etc.
- ix. Provision of electric power for sub-contractor's on-site work, and for lighting, including any 3 - phase or heavy supplies which may be required.
- x. Provision of water for the works, including requirements for testing and commissioning
- xi. Unloading all plant and materials, placing in suitable storage areas, hoisting or lowering to respective floor levels and distributing plant and materials to positions convenient to the nominated sub-contractor for executing his work.
- xii. General co-ordination and integration of all sub-contract works into the general programme.
- xiii. Entering into an agreement with the nominated sub-contractor based on the conditions laid down in the form of contract.
- xiv. Ascertaining full details of any work to be executed by other trades in connection with the sub-contract works and arranging for such work to be executed at the proper time.
- xv. Allowing use of all temporary means of access already fixed or placed in position on the site for men and materials.
- xvi. Any special Attendance or services required by a nominated sub-contractor beyond those referred to in the proceeding paragraph

**Facilities for Direct Works**

The Contractor shall afford the following facilities free of charge to other contractors appointed by the Employer to carry out direct works not forming part of this Contract

- i. Allowing use of scaffolding and all temporary means of access already fixed or placed in position on the site for men and materials.

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- ii. Use of messrooms, sanitary accommodation and welfare facilities.
- iii. Providing water for the Works.
- iv. Providing power and lighting for the Works.
- v. Protecting after installation.
- vi. Clearing away rubbish.

**Fixing of Goods or Materials Supplied by Specified Suppliers**

Rates for fixing goods and materials supplied by the Specified Merchant or Tradesman shall include, but not limited to:

- i) Unloading, storing, distributing and hoisting.
- ii) Arranging for delivery or payment of carriage, where particulars are given.

Builder's work in connection with Mechanical, Electrical, Plumbing, Drainage, External services and other Installations

The expression “Builder’s Works” shall mean the ancillary work carried out by the Contractor in connection with the MEP installations, examples of which are given below.

The drilling, cutting or leaving of holes or apertures through structural floors, walls, beams, etc. shall be avoided, but where this becomes a necessity, the Contractor must obtain the written approval of the Engineer before work is put in hand.

The Contractor shall allow for all builders’ work in connection with the installations as included in the following list which it should be noted, is not intended to be exhaustive and can be extended at the discretion of the Engineer. The Contractor shall allow for all builders’ work in connection with the installations as included in the following list which it should be noted, is not intended to be exhaustive and can be extended at the discretion of the Engineer.

- i. Drilling, cutting or leaving of holes for pipes, ducts and the like through walls, floors, partitions, roofs, etc. and subsequently making good/waterproofing where necessary.
- ii. Cutting and pinning ends of supports for pipes, equipment, appliances, fittings and the like to walls, floors, partitions, soffits, etc. and making good. (e.g.. Fixing of MEP items to the structures where weights of the equipment/Pipes are detrimental to the structural elements ).
- iii. Cutting or leaving mortises, sinkings, etc. for holding down bolts, brackets, supports and the like and grouting in.
- iv. Cutting chases for pipes, conduits and the like in walls, floors, partitions, etc. and subsequent making good.
- v. Cutting and filling around, boring holes through and making good of finishings up to pipes, ducts, fans supports, brackets and the like.
- vi. The construction of concrete, block and/or timber ducts.
- vii. The formation of ducts within concrete slabs, together with access covers and frames.

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- viii. The building of timber frames, panels, ceiling access panels and doors, including ironmongery, to give access to pipes, ducts, equipment and the like.
- ix. The formation of concrete bases, plinths, etc. for plant and equipment including floating floors, isolation pads, inertia bases for chillers and the like.
- x. The building of timber frames for A/C grilles and ducts penetrations.
- xi. Painting of exposed pipework, insulation, and exposed metal supports, etc. where aesthetics are of concern. (See Item D – 4).
- xii. The waterproofing of penetrations for all external ductwork and pipework to the Engineer's approval.
- xiii. Making good finishes after second fix installation.
- xiv. Secondary steel framing necessary for support of plant, pipework, lifts, ductwork and the like. ( e.g.: Steel supports required for fixings of equipment, pipes etc. on steel roofs )
- xv. Concrete encasement to drainage pipes and fittings below slab on grade.
- xvi. Elevator lifting beams, supports and other necessary builders work.
- xvii. The lifting of all plant and equipment into its place, including the lifting of chillers, air handling units, water tanks and window cleaning equipment and the like onto the roof(s) or relevant level (s) from ground floor levels close to the building.
- xviii. Surveyor's assistance for setting out of positions for fixing of pipe sleeves and cut-outs on floor slabs as required by MEP Subcontractor.

**SITework**

The Tenderer shall allow in his rates for excavation for excavating in type of ground, including running silt, running sand and rock, commencing excavation of any depth, excavating below the normal water table, excavating around existing services and mains, supporting the vertical sides of excavations, working space and filling soft spots, and shall cover the uprooting of all trees, stumps, roots, hedges (if any), clearing and grubbing of top soil, vegetable and organic matters, drift sand, unsuitable soil and rubbish (minimum 300 mm deep) falling within the areas to be occupied by the works and removal from the site to approved dumps as directed by the Engineer.

Excavating in rock (if any) which in the opinion of the Engineer requires removal by means of drilling, breaking, wedging, etc. or by any power operated hand tool.

Trimming bottoms and sides of excavation to the widths and depths shown on Drawings and include removal of all drift, sand, dust and rubbish which may accumulate on the site or in excavations and keeping the site and excavations free from water during the progress of the works to the satisfaction of the Engineer.

Manual removal of the bottom layer of excavations minimum 200 mm thick, just before concrete blinding is to be placed and the Contractor shall make up, at his own expense the difference between levels excavated deeper than the levels shown on Drawings, with plain concrete.

Rates for all excavation shall include for keeping excavations free from water by whatever means.

Rates for disposal of excavated material shall include for any necessary double handling and the provision of a tip, if necessary, including any charges in connection therewith including Removal of ex-



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cavated material either spoil heaps in approved locations for future use or to any other approved outaide dump location approved by Authority including screening, transporting and backfilling around foundations below existing/natural ground level. Rates shall include for loading transporting, depositing, spreading and leveling surplus excavated material in locations approved by the Engineer. Rates for excavation shall also include for obtaining additional backfill material from borrow pits, irrespective of location, should the Engineer decide that any excavated material is unsuitable for the purpose.

Wherever the term ‘dispose on site’ is stated within the earthworks section of the Bills of Quantities, the quantities of surplus excavated material shall either be required to be used elsewhere in the contract or stockpiled on site in a location approved by the Engineer.

Wherever the term ‘filling to make up levels’ is stated within the earthworks section of the Bills of Quantities, the additional quantities of fill material required shall either be taken from elsewhere in the contract or from the stockpiles of surplus excavated material located on site.

Rates for excavation of trenches for pipes, cables and the like shall include for compaction, disposal, dewatering and filling with selected excavated material, hand and machine compacted as specified.

The rates for drains, inspection chambers, etc., are to allow for testing.

Rates for drain pipes generally are to include for all short lengths, back stops, wooden plugs and retaining and alignment pegs required in laying and for the extra involved over normal trench excavating in hand packing and tamping selected fine material around the lower half of the pipes to buttress them against the side of the trench. Rates are to include for leaving all pipes clean and clear.

Pipes are measured net as laid and are to include for all drain fittings on all types of drain pipes, extra joints of all types and cutting and waste on all pipes, for laying in trenches of any depth, and building in to sides of inspection chambers.

Rates for drain accessories shall include for concrete surrounds and any additional excavation and disposal.

Rates for filling shall include for:

Watering and compacting in layers as specified.

Additional material necessary to make up levels.

Multiple handling as necessary.

Temporary retaining boards.

Hand-picking where required.

**CONCRETE WORK**

The Contractor is referred to the Structural Engineering Specification

The rates for beds, blinding and the like shall include for trimming, grading and consolidating the underlying surfaces.

In-situ plain and reinforced concrete have been measured net in square meter stating the thickness or in cubic meter. Precast units are measured linearly stating the overall sizes. The volume of concrete displaced by reinforcement and the volume of pockets, holes, chases, mortices and the like are not

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deducted. No deduction has been made for voids less than 0.50 m<sup>2</sup> and in these cases the shuttering necessary to form the void shall be understood to be included.

Construction joints have not been measured but are to be included in the rates for concrete slabs, beams, column and walls, etc. The position of all construction joints shall be agreed with the Engineer.

The rates for concrete shall include for hoisting to any heights, or lowering to any depth, scaffolding, haulage, transportation, placing, all concrete ingredients including all kinds of admixtures, aggregates, water, mixing, compaction by vibrators if required, curing, hacking surfaces for key, forming and grouting mortises, making good concrete in connection with holes and mortises, all surface treatment to unset concrete special finishes to concrete where described and all construction joints.

The rates for concrete casing to stanchions shall include for expanded metal lathing and angle beads.

The rates for concrete shall include for joint sealing between concrete and plaster

The rates for rod reinforcement shall include for the fixing of rods of any diameter, extra material in laps, for straightening as necessary, cutting to length, bending to the required shapes, tying wire, distance pieces, chairs, block spacers and for welding of bars to form mesh reinforcement.

The rates for bar reinforcement shall include for the cost of calculating and preparing all bar bending schedules to the approval of the Engineer. Bending schedules are to be prepared in accordance with BS 4466.

The rates for shuttering shall include for all props, struts, stays, wedges, bolts, all cutting labours at the intersections, overlaps, passings at angles, cutting and fitting round projections and pipes, grooves of any sectional area, all stops, chamfers, splayed angles, mould oil, strutting and supporting shuttering to any height and for easing, striking and removal. The rates shall also allow for chamfered edges to all external angles as detailed. Rates shall also include de-shuttering and removing of props, panels etc.

The rates for precast concrete shall include for all reinforcement and for all moulds, square, rounded and mitred angles, holes or notching for pipes, etc., and hoisting, setting and bedding in position.

**Rates for concrete shall include for:**

The supply of all materials, storage, plant and equipment, tools, admixtures, trial mixes, mixing, sampling and testing.

Hoisting and depositing concrete in position, vibration and consolidation of concrete and compaction around reinforcement.

Forming construction joints, provision of water stops (where necessary) and forming edges of beds where laid in bays.

Providing tamped or trowelled or floated surfaces as required and for finishing to falls or slopes.

Thickening under block walls.

Cutting or forming mortices, apertures, grooves, chases, rebates and chamfers.

Grouting, casting in-pipes, pipe sleeves, ducts, dowels, fixing bolts and the like.

Building in ends of lintels, etc.

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Curing as specified.

The preparation of a detailed bar bending schedule and submission for Engineer's approval.

Provision of method statement, design calculations, shop drawings and any mockup/placement samples as required by the Engineer.

All necessary formwork including shutter oils, angles and intersections, forming grooves, throats, sinkings and splays, raking and circular cutting around all pipes, ducts and the like and strings of stairs, striking and rubbing down and making good concrete surfaces after formwork is removed.

All reinforcement, fabric mesh, links, stirrups, chairs, etc. including cleaning, bending, cutting, notching and all necessary supports and spacers and spacer bars, distance pieces and steel binding wires.

Wall ties including fixing to formwork, bending and casting into concrete and subsequently straightening and building into joints in block work.

**Pre-Cast Concrete**

Rates for pre-cast concrete units shall include for moulds, reinforcement, stoolings, ends, angles and junctions. Rates shall also include for surface finish as required and for fixing cramps, ties, holes and plugs or inserts. Unit rates shall include for hoisting, building-in, bedding, jointing and pointing as required.

**Damp proofing/Waterproofing/Tanking**

Polythene sheet has been measured net in square meter with no allowance made for overlaps.

Rates for polythene sheet shall include for laps, straight and curved cutting, waste and for fitting around obstructions.

Waterproofing/tanking works have been measured net in square meter with no allowance made for overlaps, etc. Rates shall be deemed to include for the provision of detailed shop drawings, fillets in screed/surface preparation, champhering corners, protection boards & screed, reinforcing strips at joints and corners, etc., as specified.

**MASONRY**

The rates for blockwork are to include for all cuttings, building to any height off slabs or beams, racking out joints or hacking surfaces to form key, bedding and pointing frames, etc., building in door and window frames and the like, building in or cutting and pinning in ends of lintels, steps, timbers, steel sections, and the like, mortises and making good in connection with building in, cutting and pinning in, holes and mortises.

The rates for blockwork shall include for all movement and expansion joints with compressible filler and joint sealant where shown on the drawings or described in the specification.

The rates for blockwork shall include for ties at tops of walls and at horizontal abutments of beams and vertical abutments of columns.

The rates for hollow blockwork shall include for filling blocks solid with in-situ concrete and steel bar reinforcement where shown on the drawings or described in the specification and for providing solid course of blockwork at sill level of all openings and bearings of all in-situ concrete and at the top of all free-standing walls.

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The rates for cavity walls shall include for ties as indicated on the drawings or described in the specification.

Rates for blockwork shall include for execution of work in isolated areas and in panels to form non-continuous work to include movement and expansion joints in accordance with Specification and where shown on drawings.

**Rates for Blockwork shall include for:**

The supply of all necessary materials, manufacture, sampling and testing, haulage, hoisting, scaffolding, testing, curing and erection of blockwork to the dimensions shown on Drawings and as specified.

All rough and fair cutting and waste, cutting and pinning to soffits, inter-sections and ends, bonding with wall ties to reinforced concrete members, forming openings, chases, mortices, leaving temporary openings in walls for structural members and making good.

Raking out joints as the work proceeds to form a key for rendering or pointing as required.

Forming grooves for flashings, etc. and leaving weep holes.

Admixtures with cement and sand mortar, upon the approval of the Engineer.

Forming cavities including wall ties as specified and all extra materials and labour for closing cavities at sills, jambs, etc.

Reinforced concrete bond beams, 200 mm high, at middle height for blockwalls exceeding clear height indicated on drwg. S00 and bond columns in walls over 6m long.

Providing solid blocks at jambs and sills to doors and windows in lieu of hollow block.

Providing solid block instead of hollow blocks at junction between ceiling soffits and walls and for all opening jambs and sills.

Providing solid block instead of hollow in the first course of all walls.

Fire proofing material, where necessary, between the last course and soffit of slab/ceiling.

Fire proofing material and insulation around pipes, ducts, cables, etc., passing through walls, slabs and ceilings.

Providing all necessary galvanized mild steel lathing at joints of blockwork and junction between concrete and blockwork.

Providing all necessary damp proof course.

**METALWORK**

The rates for all steelwork and metalwork shall include for the following :

- i. Ends, angles, intersection, ramps on frames, bearers, stays and the like
- ii. Assembling and jointing together components
- iii. The weight of weld metal in welded constructions
- iv. Members of any length

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- v. Cutting to size and shape and joints in the running length
- vi. Notches, holes, slots, mitres, angles, ends and for all drilling and splay cut ends
- vii. Grinding welds to a smooth finish, unless otherwise required
- viii. Fixing with appropriate non-corroding countersunk screws including holes unless otherwise described
- ix. Riveted and bolted work shall include rivets, bolts and holes and countersunk holes
- x. Approved protection to cut ends or holes in galvanised work or other applied finish
- xi. All considerations arising from the Specification
- xii. Floor plates, duct covers and the like shall include narrow widths, laying in position, frames and for all holes, slots and the like and making good
- xiii. All preparation, protection coatings and final decoration with the items to which they relate
- xiv. All fittings and fixing required, including grouting in position

“Welding” is deemed to be in accordance with the specification and for the material to which it is to be used.

**WOODWORK**

Sizes of sawn timber are basic.

Sizes of milled (wrot) timbers are finished.

Woodwork shall be deemed to be fixed with non-corroding nails unless otherwise described.

Screwed woodwork shall be so described and shall be deemed to be fixed with non-corroding screws.

These preambles apply equally to all items measured as composite units.

The rates for woodwork shall include for the following:

- i. Working to size and shape
- ii. Raking, curved or splay cutting
- iii. Short lengths, mitres, stops, ends and angles
- iv. Rebates, chamfers, grooves, scribed edges, rounded edges and the like
- v. Cross grain and stopped work
- vi. All joints in the running length including structural joints
- vii. Cutting and fitting to steelwork
- viii. All considerations arising from the Specification
- ix. Trimming around openings

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- x. Extra timber in joints, horns etc
- xi. Notchings, boring and sinkings, rounded curves and splayed edges
- xii. Holes for pipes, tubes, bars, cables, conduits, ducting, trunking and the like.
- xiii. Treating backs of woodwork in contact with structure

**The rates for framed woodwork shall include for the following:**

- i. Proper framed joints
- ii. Gluing joints
- iii. Dowelling cramps and/or screwing joints

**The rates for milled woodwork shall include for the following:**

- i. Punching, fixings below exposed surfaces and filling flush
- ii. Any necessary sanding to remove “rippling” caused by milling machines
- iii. Special returned ends
- iv. Wreaths, ramps and the like

**The rates for woodwork described as “selected” shall include for the following:**

- i. Keeping clean and clear finishes
- ii. Punching nails and pins below exposed surfaces and filling with an approved coloured filler to match the woodwork
- iii. Where described also as “screwed” the woodwork shall be fixed with screws recessed and pelleted to match the woodwork

The rates for plywood, blockboard and the like shall include for straight raking curved and circular cutting and all consequent wastage

The rates for plastic laminate faced manufactured boards shall include for providing plastic laminate edgings and balancing laminates and removal of protective coatings.

**The rates for ironmongery shall include for the following:**

- i. Mortises, sinkings and the like
- ii. All considerations arising from the Specification
- iii. Removing before and replacing after decoration
- iv. Fixing to wood or metal doors
- v. Testing and easing and adjusting
- vi. Oiling and leaving in perfect working order

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- vii. Adhering strictly to mastering and sub-mastering schemes
- viii. Supply and labelling at least two keys for each and every lock and handing to the Engineer
- ix. Master key if required by the specification or drawings

The rates for ironmongery described as “fixed to hardwood” shall include for fixing to plywood, blockboard and the like.

**THERMAL AND MOISTURE PROTECTION**

The rates for waterproof membranes and insulation shall include for cutting, notching, bending and lapping, holes for pipes, standards and the like, angles, ends, turning into grooves and forming outlets, skirtings, upstands, aprons, gutters and channels and forming small openings.

The rates for insulation shall also include for taped joints as specified.

The rates for gutters shall include for angles, ends, seams, passings at ends and outlets.

The rates for damp proof courses shall include for laps passing at angles and intersections and for additional mortar in bedding.

Tile finishes refer to FINISHES.

**Rates for Thermal and moisture protection shall include for:**

Supplying all necessary materials, plant, equipment and tools, storage, sampling and testing, haulage, hoisting and execution of all waterproofing, insulation and other works as specified.

Preparation of surfaces to be covered.

Cutting as necessary and fitting around pipes and obstructions.

Overlaps, forming collars and watertight joints around roof outlets, pipes and ducts passing through roof slab.

Preparation and submission of detailed shop drawings and samples to the Engineer for his approval.

**Skirting**

Rates for skirting and flashings shall include for dressing over angle fillets, bending, tucking-in edges and for all laps, ends, angles and intersections, etc and for additional layer of membrane as specified.

**Screed**

Rates for screeds or foam concrete shall include for providing fillets at all turnings, around pipes, sleeves, ducts, etc.

Rates for screeds shall also include for laying in bays, if necessary, including temporary formwork and dividing strips.

**DOORS AND WINDOWS**

The rates for doors are to include for fitting and hanging any type.

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Wooden sub-frames contiguous with windows and doorsets have not been measured separately and are deemed to be included therewith

Glazing is described within the door/window item, with which it is associated.

Ironmongery supply and installation is to be allowed with each opening.

Rates for carpentry and joinery items shall include:

The preparation and submission of detailed shop drawings to the Engineer for approval, prior to the commencement of the work involved.

Framing in the best manner and in accordance with the detailed Drawings, and for all labour, notching, cutting and waste, halvings, morticing, tenoning, wedging, scribing, openings, forming chamfers, grooves, rebates, rounded shapes, preparing surfaces to receive finishes, plugging to concrete and blockwork, making good all other sundry items of a like nature as required.

Protecting all work liable to be damaged or as may be required by the Engineer and removing on completion.

For providing cramps, screws, nails and other fixing devices.

Rates for doors shall include for:

Painting backs of frames with primer before fixing in position.

Fixing of ironmongery including matching fixing screws, etc. and shall include removing before painting and then refixing.

Fitting and hanging;

Preparing & painting or polishing/varnishing as indicated.

Rates for glazed doors shall include glass and beads.

**Glazed Units**

Rates for glazed doors shall include glass, glazing accessories and beads as required.

Rates for glazing work shall include for cutting to required sizes and shapes, forming holes, supplying and fixing all required gaskets, clips, beads, points, metallic putty, etc. protection of all glass from damage, replacing damaged panels, cleaning throughout and leaving all work in perfect condition.

Rates of galvanized work shall include for the treatment of cut ends, etc. as required.

**FINISHES**

Rates for finishes shall include for the following:

- i. All cutting and waste, arrises, short lengths, angles, ends etc making good or cutting and fitting around pipes conduits trunking pipe brackets and the like and making good up to door and window frames skirtings etc, all temporary rules and working around buried pipes, cables, conduits etc



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- ii. Angle beads, plaster stops, control joints, expanded metal strips, furring and lath, glass fibre scrim, aluminium channels and the like to all plasterwork around doors, windows at vertical abutments etc, and securely fixing to backgrounds
- iii. All narrow widths, small areas and all cuttings
- iv. Fair edges, rebated edges, splayed edges, rounded edges, arrises, quirks, grooves, flutes and the like
- v. All setting out, temporary rules, screeds, templates and supports
- vi. Curing and cleaning off/down upon completion
- vii. Dubbing out as necessary to take up tolerances in the structure and cambers in floors and the like
- viii. Expansion joints and control units
- ix. Expanded metal lathing wherever required

Rates for wall and floor tiles and the like shall include for the following :

- i. Fixing with an approved adhesive
- ii. Pointing up joints with mortar and cleaning off as required
- iii. Rounded, bevelled and fair edges as required
- iv. Metal edge strips, dividers etc
- v. Straight, raking and curved cutting
- vi. Provision of expansion joints and sealant as indicated on the drawings
- vii. Provision of slurry protection or the like including removing same in floor areas subjected to movement of labour and materials
- viii. General protection of finished work to the Engineer's approval
- ix. Straight and curved cutting, waste, grouting, pointing and the like to execute the works to the satisfaction of the Engineer.
- x. Cutting to shape around fittings, chamfering, leveling and the like and shall include for purpose-made tiles and slabs (ex. rounded edges, coves, etc.).
- xi. The preparation and furnishing, to the Engineer, of detailed workshop drawings for approval prior to commencement of work and/or ordering of materials.
- xii. Providing required approved sand fill below tile or slab mortar to bring-up levels to the finished floor levels.

**Rates for ceiling finishes shall include for the following:**

- i. False ceiling to include for all hangers, ceiling grid, tiles and insulation layers, and drop of any height.

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- ii. Straight, raking and curved cutting
- iii. Cutting and fitting around light fittings, A/C equipment etc

**Suspended Ceiling Finishing**

Suspended ceilings are measured flat. Rates for suspended ceiling shall be deemed to include for all steppings, bulkheads of all heights, edge trims/mouldings, decorative mouldings, light coves, etc.

**Rates for suspended ceilings shall include for the following:**

- i. Submitting samples of the system to the Engineer for approval prior to order.
- ii. Forming circular, rectangular or square openings for electric light fixtures, AC ducts and grilles, access panels and for straight cutting, curved cutting and waste.
- iii. Cleaning any soiled or discoloured surfaces of units, including the removal and replacement of units which are damaged or improperly installed.
- iv. On completion of the installation, cleaning of all areas where suspended ceiling works were executed, of all waste, cuttings, etc.
- v. Preparation and furnishing, to the Engineer, of detailed workshop drawings for approval prior to commencement of work and/or ordering of materials.
- vi. Providing access openings, doors/closure panels to the approval of the Engineer.
- vii. Providing equal margins when setting out grid and for all standard edge trim details.

**Rates for In-Situ Finishing shall include for the following:**

Forming horizontal or vertical guide screeds and for supplying hardwood guide blocks.

Preparing surface and providing expanded metal lath at junctions of blockwork and concrete.

Work to curved surfaces.

Work to falls and crossfalls.

Rounded edges, chamfered edges, quirks, arrises and the like;

Features, grooves, beaded edges, mounted edges, ends, angles, intersections and the like.

Rates for painting and decoration shall include for the following:

- i. Painting either internally or externally
- ii. All cleaning and preparatory work to the surface to be painted including rubbing down between coats
- iii. Priming shall include for using a primer appropriate to the surface to which it is being applied
- iv. Preparation of manufactured boards and wood products shall include for surface filling
- v. Work on “woodwork” shall include both softwood and hardwood and for knotting

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- vi. Extra preparation on metal trims and the like over that of general surfaces in which they are decorated
- vii. Unless of a differing specification, work shall be deemed to cover internal or external painting
- viii. Work in multi-colours
- ix. Work to curved surfaces
- x. All cutting into edges
- xi. Scaffolding as required and working to or at any height
- xii. All narrow widths, cutting to line, opening edges of doors

**MECHANICAL INSTALLATIONS**

The rates and prices for plant, equipment and installations are to be all inclusive of supply, installation, testing and commissioning, for the full operation of such plant, equipment and installations, to comply in all respects with the specification, Bills of Quantities, Drawings and to the complete satisfaction of the relevant Authority and the Engineer.

The rates for pipework shall include for the following :

- i. All cuttings, short lengths and small quantities
- ii. Made bends
- iii. Couplers and/or joints in the running length
- iv. Splay cut ends
- v. All considerations arising from the Specification
- vi. Fixing with approved holderbats or pipe clips cut and pinned, built in or plugged and screwed
- vii. Sleeves through walls
- viii. Bends and fittings on pipes whatever the diameter

**ELECTRICAL INSTALLATIONS**

The rates and prices for plant, equipment and installations are to be all inclusive of supply, installation, testing and commissioning, for the full operation of such plant, equipment and installations, to comply in all respects with the specification, Bills of Quantities, Drawings and to the complete satisfaction of the relevant Authority and the Engineer.

The rates in general shall include for the following :

- i. All cuttings, short lengths and small quantities
- ii. All joints in the running length and all connections
- iii. All considerations arising from the Specification
- iv. Fixing conduits/ cable trays, etc by approved methods

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- v. Assembling component parts
- vi. Cleaning off all protective wrappers and leaving ready for use
- vii. Leaving all equipment etc, clean and in full working order
- viii. Draw wires in empty conduits

The cable lengths/ routes are measured from point to point on the drawing, any cable required for connections, loops, etc, at equipment, appliances, control gear or the like will be deemed to be included.

Rates for Electrical Works shall include for:

Plugs, drawing wires and cables, sinking ends of cables to exposed conductors and capping ends of cables, connections to equipment with cable glands, etc.

Factory rust inhibiting primer, including storage and protection of all Electrical Works.

Supplying and painting all exposed surfaces of electrical metal work with one coat of rust inhibiting "Galvafrid" primer or approved equivalent and two coats of approved chlorinated rubber paint, and painting concealed surfaces of panel board cabinets with emulsified asphalt.

Laying all conduits concealed in reinforced concrete slabs, columns, walls, floors, blockwork or exposed, all as indicated on Drawings.

Providing all testing devices, equipment and any electrical power necessary for testing, before putting into operation the completed electrical system under the supervision of the Engineer, also for carrying out any modification or repairs necessary on completion of tests to the satisfaction of the Engineer.

Testing all installations as specified under the clause: "Tests and Certificates" .

Preparation and furnishing of detailed workshop drawings as indicated in the specifications, and/or the drawings for the approval of the Engineer prior to commencement of the works and/or the ordering of materials.

Sealing openings, etc., with fire proofing material, if not included elsewhere.

Rates for feeders shall include cables (single core or multicore armoured or unarmoured as applicable) conduits if any, cable cleats at every meter run, cable glands, cable tray and support, etc.

Rates for conduits shall include all fittings and accessories, expansion joint fittings, pull junction and terminal boxes, conduit straps, etc.

Rates for cables and wires shall include earthing wires and/or cables.

Rates for devices and equipment shall include nameplates and engraving.

Rates for ducts and conduit lead-ins and crossings shall include Fire proof filling material.

Builders work in connection with electrical installation shall include but not be limited to forming or cutting holes, chases, channels, etc. in reinforced concrete structures and blockwork and also for providing sleeves, clamps, brackets, hangers, hold fasts, screws, bolts and nuts, excavating and dewatering of trenches, backfilling for underground cable duct banks and directly buried cables. Builders works shall also include making good around all trades disturbed by the execution of electrical installations.

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Civil works in connection with electrical installation shall include for all incidental and associated works, not already included elsewhere in Bill No. 13, for the proper installation, completion and commissioning of the Electrical Works.

**PLUMBING AND MECHANICAL ENGINEERING INSTALLATIONS**

All works shall be complete as specified, as shown on the drawings and to the approval of the Engineer.

- i. Pipe work lengths measured are mean lengths as fixed in position. Rates for pipework laid underground shall include all excavation, concrete incasement, sand surround, dewatering, backfilling and disposal of surplus soil.
- ii. Rates for pipework laid underground shall include for all dewatering required to keep the excavated trenches clear of water by pumping, bailing or well point dewatering.
- iii. Rates for pipework shall include joints in the running length, fittings (eg. tees, junctions, etc.) made bends, cutting, short lengths and waste. Rates for pipework shall include for painting.
- iv. Rates for pipework shall include for pipe clips, holderbats, insulation, and lagging fixing to any background, hangers, supports, guides, expansion joints, unions, flanges, dielectric isolators, flexible coupling.
- v. Rates for piping shall include for cleaning, flushing, and disinfection of all systems as per specifications.
- vi. Rates for piping shall include for provision of automatic air vents, drain valves of risers, air chambers and vacuum breakers.
- vii. Rates shall allow for water hammer and stress analysis of the piping network.
- viii. Rates shall allow for thrust blocks and anchors.
- ix. Rates for sanitary fixtures shall include for assembling, jointing and fixing in position complete with all taps, mixers, valves, traps, cisterns, flush pipes and the like. Rates shall also include for connection to service pipes.
- x. Rates for all plumbing work shall include for marking out positions and any temporary removal necessary for decoration.
- xi. Builders work in connection with plumbing installation shall include, but not be limited to, cutting or forming holes, chases, channels, recessed pipes enclosure with removable covers, etc. in blockwork, concrete, timber and other materials, providing and building or casting in pipe sleeves, clamps, brackets, hangers, holdfasts and the like. Builders work in connection shall include for making good on completion all works disturbed by the plumbing installation.
- xii. Builder's work in connection with mechanical installation shall include but not be limited to; forming or cutting holes, chases, channels, etc., in reinforced concrete structures and block works.
- xiii. Rates for Air Conditioning and Ventilation System shall include for providing steel pipe sleeves, clamps, brackets, hangers, supports, tools, ladders, scaffolding, etc. painting metal works, making good around any other incidental requirements for the proper execution of the air conditioning and ventilation system in accordance with the Drawings.

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- xiv. Rates shall include for testing the equipment under the supervision of the Engineer's representative including any modifications, adjustments, or repairs which may be required during or on completion of the test, all as required and to the satisfaction of the Engineer.
- xv. Rates shall include for volume-splitter, volume-dampers, fire- dampers, gauge test points in ducts and for system balancing all in compliance with ASHRAE, SMACNA & NFPA requirements.
- xvi. Rates for flexible ducts shall include for butterfly volume dampers.
- xvii. Rates shall include for duct and pipe flexible connections and expansion joints.
- xviii. Rates shall include for duct sleeves in all walls and slabs to the approval of the Engineer.
- xix. Rates shall include for access openings with access doors, in ducts as per specification and to the approval of the Engineer.
- xx. Rates shall include for timber frames to the approval of the Engineer to all grilles terminating at the face of walls.
- xxi. Except for chilled water pumps, rates for pumping units shall include for the built-in and/or isolated control panels and all interconnecting control wiring and power supply from panel to pumps and accessories. (Conduiting is not included).
- xxii. Rates for all pumps shall include for all valves, strainer, flexible connections, gauges at suction and discharge of each pump.
- xxiii. Rates shall include for equipment and piping vibration isolators.
- xxiv. Rates shall include for sound attenuators and sound liner as per specifications to the approval of the Engineer.
- xxv. Rates shall include for item identification and labelling like plates, discs, labels, charts, and colour coding as per specification.
- xxvi. Rates for all plumbing, air conditioning and ventilation systems and other mechanical installations shall include for the preparation and furnishing of detailed workshop drawings as indicated in the specifications and/or in the drawings for the approval of the Engineer prior to commencement of the works and or the ordering of materials.
- xxvii. Rates for plumbing and air conditioning and ventilation systems shall include for closing ceilings in Technical Floor shafts with either structural concrete slab or chequered plates on structural steel supports to Engineer's approval.
- xxviii. Rates shall include for walkway to cross-overs across pipes at roof levels to the approval of the Engineer.
- xxix. Rates shall include for the provision of instruction and maintenance manual as specified.
- xxx. The Lump Sum for testing shall include for the provision of all testing equipment, materials, power and labour necessary to carry out the testing to the approval of the Engineer.

**Preamble to Bill of Quantities – Bill I: Architectural Works & Bill II: Civil Works****EXTERNAL WORKS**

- i. The Preamble clauses for other trades shall equally apply to work measured under this section.
- ii. Rates for pavings, kerbs, and the like shall include for the supply and installation of all materials as shown on the drawings or as directed by the Engineer.

**PROPRIETARY MATERIALS**

Where manufacturers names of proprietary material names are given against certain items in the Bills of Quantities, the rates and prices inserted shall be for those specified material or other similar and approved materials

**PRIME COSTS**

The Prime Cost element of the rate is deemed to be the net material cost of the stated material only. The quantities will be the net quantities stated in the Bill of Quantities. Where Prime Cost sums or rates are included, the Contractor is to include in his rate the full amount shown. To this sum or rate the Contractor shall, where so directed, add for “Fixing Only” as defined which such sums or rates of sums for “fixing only” shall include all cost associated with all wastage, site handling, insurance, off-loading and storage, collecting from the supplier’s premises, receiving at site, installation, secondary fixing and finishing materials, overheads and profit.

The Contractor will be required to submit a full rate breakdown of all items containing PC rates. This breakdown will show all elements as identified above.

The expenditure of the PC rates will be done on the basis of the quantities stated in the Bills of Quantities. The contractor must satisfy himself that the quantities in the Bills of Quantities are correct for the PC rate items. The contractor will be paid the contract price accordingly.

In case the employer provides the material, the contractor will be paid the contract price for this work with the deduction of the total cost of material supplied to him at the rate of ‘PC rate’ irrespective of employer purchase price (by multiplying BOQ net quantity). If the Contractor required more quantities than BOQ, then the employer will supply the excess quantity and deduct the cost at the rate of ‘PC rate’.

Once Prime Costs material is collected by the contractor, the Employer shall recover the full amount of the material price as stated above and the contractor shall be paid the material at site at the rate of PC rate.

The Prime Cost will be expended at the discretion of the Engineer and the adjustment to the Contractor's rate will be the net difference between the Prime Cost (PC) Rate stated in the description and the actual rate paid for the actual quantity installed excluding wastage and damages. If any amount so authorized by the Engineer and properly paid is more or less than the relevant Prime Cost (PC) Rate included in the Contract Documents, the differences shall be added to or deducted from the Contract Sum as the case may be.

Any savings or additions in the actual cost to PC rate items will be valued net and the necessary adjustments made to the overall rate with no adjustment to overheads or profit.



**Preamble to Bill of Quantities – Bill I: Architectural Works & Bill II: Civil Works****PROVISIONAL ITEMS**

The Engineer's consent is required for the appointment of any Subcontractors providing any Provisional Items.

On the Commencement Date (or such other time as agreed by the Engineer and the Contractor), the Contractor shall present to the Employer and the Engineer a minimum of three tender prices pertaining to each Provisional Item that each comply with the Contract Documents on which the particular Provisional Item's price is calculated.

The Employer and/or the Engineer may in their absolute discretion:

- i. enter into direct negotiations with such tenderers in order to obtain improved quotes from such tenderers for any Provisional Item; or
- ii. direct the Contractor to commence execution of the Works regarding such Provisional Item based on the existing price for such Provisional Item.

For each Provisional Item, the Contractor must use the Subcontractor approved by the Engineer and / or the Employer.

Upon approval by the Engineer and/or the Employer of such proposed Subcontractor for each Provisional Item, the Contract Price shall be adjusted to take account of the final price negotiated for each Provisional Item approved by the Employer and/or Engineer. The Contractor is not entitled to claim, and the Employer is not required to pay, any loss of profit or overheads regarding adjustment to the Contract Price arising from savings from any Provisional Item.

The Employer may in its absolute discretion reduce or remove any Provisional Item from the Bill of Quantities. Where any such Provisional Item is reduced or removed, the Contract Price shall be adjusted accordingly and the Contractor is not entitled to claim, and the Employer is not required to pay, any loss of profit or overheads regarding adjustment to the Contract Price arising from such reduction or removal.

Where the Contractor is required to add for 'Profit' a lumpsum figure shall be inserted as indicated. This amount shall include for site office, head office and other overheads.

Where the Contractor is required to add for 'Attendance' and/or 'Charges' a /lumpsum figure shall be inserted as indicated. This lumpsum shall include the following where work is to be executed by a Sub-contractor.

- i. Use of temporary roads, pavings, paths, standing and special scaffolding, hoisting/cranage plant, lighting and water, offices, office facilities and sanitary facilities.
- ii. Unloading, distribution, hoisting/lifting and placing in position (if not carried out by the Sub-contractor).
- iii. Providing secure storage facilities with lighting and power.
- iv. Providing power (if required).
- v. Protecting the work on completion.
- vi. Necessary supervision, coordination and shopdrawings as applicable/required.
- vii. Any other attendance specifically required.



**Preamble to Bill of Quantities – Bill I: Architectural Works & Bill II: Civil Works**

- viii. Builder's work, such as cutting, forming holes, chases and channels, etc. and making good.
- ix. Opening and maintaining letters of credit, pre-payment, etc.
- x. Unloading delivered items to site, checking for damage and supplying replacements (if necessary) and processing of insurance claims.

The term 'Fix Only' where used in the description of work in the Tender Documents shall be deemed to include for taking delivery, unloading, storing, distribution, hoisting, assembling and fixing in position, and for protecting and replacing broken, damaged or stolen goods as necessary.

**PROVISIONAL SUMS**

Provisional Sums are included for use as directed by the Engineer in accordance with Clause 13.5 of the Conditions of Contract.

Where the Contractor is required to add for 'Profit' a percentage figure shall be inserted as indicated. This percentage shall include for site office, head office and other overheads.

Where the Contractor is required to add for 'Attendance' and/or 'Charges' a percentage/lumpsum figure shall be inserted as indicated. This percentage/lumpsum shall include the following where work is to be executed by a Sub-contractor.

- i. Use of temporary roads, pavings, paths, standing and special scaffolding, hoisting/cranage plant, lighting and water, offices, office facilities and sanitary facilities.
- ii. Unloading, distribution, hoisting/lifting and placing in position (if not carried out by the Sub-contractor).
- iii. Providing secure storage facilities with lighting and power.
- iv. Providing power (if required).
- v. Protecting the work on completion.
- vi. Necessary supervision, coordination and shop drawings as applicable/required.
- vii. Any other attendance specifically required.
- viii. Builder's work, such as cutting, forming holes, chases and channels, etc. and making good.
- ix. Opening and maintaining letters of credit, pre-payment, etc.
- x. Unloading delivered items to site, checking for damage and supplying replacements (if necessary) and processing of insurance claims.

The term 'Fix Only' where used in the description of work in the Tender Documents shall be deemed to include for taking delivery, unloading, storing, distribution, hoisting, assembling and fixing in position, and for protecting and replacing broken, damaged or stolen goods as necessary.

**Preamble to Bill of Quantities – Bill I: Architectural Works & Bill II: Civil Works****FURNITURE, FITTINGS & EQUIPMENT**

It is the intention to seek competitive bids for the furniture, fittings and equipment covered under the Provisional Sum from reputable specialist Sub-Contractors, such items will include fixtures and equipment that requires putting in place or simple connections to services inlets and outlets, and furniture.

The proposed sub contract agreement that the intends to use to engage the Subcontractor should back to back agreement in line the his main Contract

The Employer will comment on this draft without any commitment on Employer's part and reserve the right to recommend amendment prior to award of the contract. The Subcontract agreement should in no way contradict the General Terms and Conditions of the Main Contract agreement and Conditions already in force, nor should it relieve the Main Contractor from any of his responsibilities and commitments contained in the Main Contract.

The employer will invite competitive bidders from qualified subcontractors

Bids will be invited on the following Terms and Conditions:-

Upon closing of this bid, Employer will be nominating the awarded bidder

The Employer will not be a party in any dispute between the Main Contractor and his subcontractor.

The Main Contractor will bear full responsibility in case of delays in concluding the contractual procedures with the Subcontractor.

Wild Air should be activated prior to the receipt of the Furniture at site in line with milestone date fixed in the Contract

The Main Contractor will be responsible for co-coordinating the sub-contract works with that of his own and of all other sub-contractors and design consultants and of ensuring the timely deliveries of equipment and completion of the works.

The Tenderers should also include allowance ( \_\_%) to the subcontractor's price that will be deemed to cover all attendance management and the provisions and requirements covering the co-ordination and all services connections and associated builders work, including making good that are necessary to ensure the complete and correct installation and operation of all the equipment, and not limited to transportation, unloading, storage, crainage, lifting to position, any kind of scaffolding, safe guarding, protection and handling, preparation of shop drawing, as built drawing, coordination drawings as required up to completion and handing over the works

The above percentages will apply to the actual cost of the Equipment Sub-Contract.

For tender purposes the percentages will be applied to the Provisional Sum amount.

**ADDITIONAL REQUIREMENTS**

- i. In addition to providing the fully priced Bill of Quantities and in the form set out in the Tender Documents ("Instructions to Tenderers"), the Tenderer is requested to complete and submit an "Excel soft copy" version of the Bill of Quantities in the format as enclosed
- ii. For the avoidance of any doubt the "Excel soft copy" version of the Bill of Quantities will not form part of the Tender Documents and is requested purely to assist in the arithmetical checking and analysis of the Commercial Tender Submissions. To the extent that there is any in-

**Preamble to Bill of Quantities – Bill I: Architectural Works & Bill II: Civil Works**

consistency between the fully priced Bill of Quantities referred to in “Instructions to Tenderers”, and the “Excel soft copy”, the former shall prevail.

- iii. The “Excel soft copy” version of the Bill of Quantities should be submitted at the same time as the Commercial Submission.

### **Bill III - Mechanical Works**

- **Mechanical List Of Approved Manufacturers  
Part-A (HVAC)**
- **Mechanical List Of Approved Manufacturers  
Part-B (Plumbing Works)**
- **Mechanical List Of Approved Manufacturers  
Part-C (Fire Fighting Works)**

## **Bill III - Mechanical Works**

- **Mechanical List Of Approved Manufacturers  
Part-A (HVAC)**

MECHANICAL LIST OF APPROVED MANUFACTURERS PART-A (HVAC)					
Sr	ITEM	MANUFACTURER-1	MANUFACTURER-2	MANUFACTURER-3	NOTES
1	SPLIT A/C UNIT	DAIKIN	FUJI	mitsubishi electric	or Equivalent
2	VRF AIR-CONDITIONERS	DAIKIN	HITACHI		or Equivalent
3	GRILLS, DIFFUSER& LOUVERS	KBE	UIC		or Equivalent
4	FANS	GREENHECK-USA	LOREN COOK-USA	SYSTEM AIR-UK	or Equivalent
5	GALVANIZED DUCT SHEETS G90	NIPPON JAPAN	ARCELORMITTAL	BORCELIK	or Equivalent
6	COPPER PIPES	MUELLER BRASS-USA	METTUBE-MALAYSIA	NIBCO-UK	or Equivalent
7	ADHESIVE	IDENDEN-USA	FOSTER-USA	MIRACLE-USA	or Equivalent
8	MOTORIZED SMOKE FIRE DAMPER	KBE	TROX-UK	TITUS-USA	or Equivalent
9	VCDS & Fire dampers	KBE	SAFID-KSA		or Equivalent
10	SUPPORT AND ACCESSORIES	WALRAVEN	FLAMCO-HOLAND	MUPRO	or Equivalent
11	PIPE INSULATION	KIMMCO	AFFICO	SAINT-GOBAIN	or Equivalent
12	VIBRATION CONTROL AND ACCESSORIES	MASON-USA	METRAFLEX-USA		or Equivalent
Notes : 1- Country of origin certificate shall be forwarded along with the supply of materials. Material Supplied without country of origin certificate will be rejected. 2-Any material or equipment that will fully perform the duties specified will be considered 'equal,' provided the bid submits proof that such material or equipment is of equivalent substance and function and is approved					

## **Bill III - Mechanical Works**

- **Mechanical List Of Approved Manufacturers  
Part-B (Plumbing Works)**

**MECHANICAL LIST OF APPROVED MANUFACTURERS PART-B (PLUMBING WORKS)**

<b>Sr</b>	<b>ITEM</b>	<b>MANUFACTURER-1</b>	<b>MANUFACTURER-2</b>	<b>MANUFACTURER-3</b>	<b>NOTES</b>
1	PPR PIPES AND FITTINGS	AQUATHERM-EU	BANNINGER	API	or Equivalent
2	DRAINAGE UPVC PIPES	REDI	OSTENDORF		or Equivalent
3	DRAINAGE SPECIALTIES	REDI FOR PVC	J.R.SMITH - CAST IRON	ZURN-CAST IRON	or Equivalent
4	WATER HAMMER ARRESTOR	ZURN-USA	WATTS-USA	JAY R SMITH-USA	or Equivalent
5	WATER PUMPS	WILO-SALMSON	KSB-GERMANY	GRUNDFOS OR LOWARA	or Equivalent
6	SUMP PUMPS	WILO-SALMSON	KSB-GERMANY	GRUNDFOS OR LOWARA	or Equivalent
7	VALVES	CRANE	HATTERSELY-UK	ECONOSTO-HOLAND	or Equivalent
8	PRESSURE REDUCING VALVE	NIBCO-USA	HATTERSELY-UK	ECONOSTO-HOLAND	or Equivalent
9	WATER METER	KENT-UK	SOCAM-UK	WEIR-UK	or Equivalent
10	GENERAL DUTY VALVES , AIR VENT ,	NIBCO-USA	HATTERSELY-UK	CRANE	or Equivalent
11	CHROME ISOLATION VALVE	HANS GROHE-GERMANY	ARMITAGE SHANKS	FRIEDRICH GROHE	or Equivalent
12	HANGER AND SUPPORT	WALRAVEN	FLAMCO	MUPRO	or Equivalent
13	SANITARY WARE	LAUFEN	ARMITAGE SHANKS	DURAVITE	or Equivalent
14	SANITARY TRIM AND FITTINGS	FRIEDRICH GROHE	ARMITAGE SHANKS	HANS GROHE-GERMANY	or Equivalent
15	ADHESIVES AND SEALANT	IDENDEN-USA	FOSTER-USA	MIRACLE-USA	or Equivalent
16	VIBRATION CONTROL AND ACCESSORIES	MASON-USA	KINETECS-USA	METRAFLEX-USA	or Equivalent

Notes :

1- Country of origin certificate shall be forwarded along with the supply of materials. Material Supplied without country of origin certificate will be rejected.

2-Any material or equipment that will fully perform the duties specified will be considered 'equal,' provided the bid submits proof that such material or equipment is of equivalent substance and function and is approved



## **Bill III - Mechanical Works**

- **Mechanical List Of Approved Manufacturers  
Part-C (Fire Fighting Works)**

**MECHANICAL LIST OF APPROVED MANUFACTURERS PART-C (FIRE FIGHTING WORKS)**

<b>Sr</b>	<b>ITEM</b>	<b>MANUFACTURER-1</b>	<b>MANUFACTURER-2</b>	<b>MANUFACTURER-3</b>	<b>NOTES</b>
1	FIRE FIGHTING PUMPS SET	ITT BILL&GOSSET-USA	LOUWARA PUMPS	KSB	OR APPROVED EQUAL
2	FIRE EXTINGUISHER	NAFFCO-UAE	POTTER ROEMER-USA	KIDDE-USA	OR APPROVED EQUAL
3	FIRE DEPARTMENT CONNECTION	NAFFCO-UAE	ANGUS-UK	TYCO-USA	OR APPROVED EQUAL
4	GALVANIZED THREADED FITTING	SHIELD-UK	VICTULIC-USA	GRINNELL-USA	OR APPROVED EQUAL
5	GROOVED PIPE & FITTING	SHIELD-UK	VICTULIC-USA	GRINNELL-USA	OR APPROVED EQUAL
6	SEAMLESS BLACK STEEL PIPE SCHEDULE 40	DALMINE	NIKOPOL	SAUDI STEEL PIPES	
7	FIRE HOSE REEL, NOZZLE, LANDING VALVE, CABINETS AND ACCESSORIES.	FIREATER	POTTER ROEMER-USA	KIDDE-USA	OR APPROVED EQUAL
8	CLEAN AGENT SYSTEM FM-200	KIDDE-FENWAL-USA	FIKE-USA	TYCO-USA	OR APPROVED EQUAL
9	FIRE VALVES & ACCESSORIES	VIKING-USA	VICTULIC-USA	GRINNELL-USA	OR APPROVED EQUAL
10	FIRE HYDRANT	NAFFCO-UAE	SHIELD-UK	KIDDE-US	OR APPROVED EQUAL
11	VIBRATION CONTROL AND ACCESSORIES	MASON-USA	KINETECS-USA	METRAFLEX-USA	OR APPROVED EQUAL

**Notes :**

1- Country of origin certificate shall be forwarded along with the supply of materials. Material Supplied without country of origin certificate will be rejected.

2-Any material or equipment that will fully perform the duties specified will be considered 'equal,' provided the bid submits proof that such material or equipment is of equivalent substance and function and is approved

## **Bill IV - Electrical Works**

## **Bill of Quantities**

- **Bill I: Architectural Works & Bill II: Civil Works**
- **Bill III: Mechanical Works**
- **Bill IV: Electrical Works**
- **Collection Sheet**

## **Bill of Quantities**

- **Bill I: Architectural Works & Bill II: Civil Works**

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM A - GENERAL REQUIREMENTS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
	The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.					
<b>A</b>	<b><u>GENERAL REQUIREMENTS</u></b>					
<b>1</b>	<b><u>Conditions of Contract / Form of Agreement</u></b>					
1-1	The Contractor shall price herein any obligations contained in Form of Agreement, or in Conditions of Contract, or in the Client's Requirements for which he has not included elsewhere and wishes to price separately, as no claim for lack of knowledge or understanding, or brevity of description will be accepted.	1	LS		Only..... ..... USD	
<b>2</b>	<b><u>Permits, Statutory Approvals and Co-ordination</u></b>					
2-1	The Contractor shall be responsible for coordinating and obtaining all necessary approvals, certificates and permits to construct the buildings from the relevant Government Departments, order of Engineers, the Police, local Service Authorities and Institutions (i.e. Electricity & Water Authority, Telecommunication, any other relevant Authorities) as required in the performance of this Contract. This item shall include also the cost of all kind of permits (order of Engineers, Ministries, Urban planning department, Municipality, ...)	1	LS		Only..... ..... USD	
<b>3</b>	<b><u>Contractual Requirements</u></b> <u>The Contractor should allow for provision of all the contract bonds and insurances in accordance with the Conditions of Contract.</u>					
3-1	Performance Bond	1	LS		Only..... ..... USD	
3-2	Insurance of the Works and Contractors Equipment	1	LS		Only..... ..... USD	
3-3	Contractor's All Risk Insurance	1	LS		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM A - GENERAL REQUIREMENTS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
3-4	Workmen Compensation Insurance	1	LS		Only..... ..... USD	
3-5	Labour health and safety requirements	1	LS		Only..... ..... USD	
3-6	Any other bonds and insurances specifically required by the Contract	1	LS		Only..... ..... USD	
<b>4</b>	<b><u>Guarantees / Warranties</u></b>					
4-1	The Contractor shall allow for provision of all the guarantees/warranties in accordance with the Conditions of Contract and specification. The guarantees/warranties shall be to the approval of the Engineer and the Employer.	1	LS		Only..... ..... USD	
<b>5</b>	<b><u>Facilities for the Staff of Employer and the Engineer</u></b> <u>The Contractor shall provide, maintain and remove temporary site offices for the staff of the Employer and Engineer along with welfare facilities (pantry, toilets, etc.), utility services, office furniture, computers, photocopy machines, telephone, 2 cellular phones, fax services, vehicle parking facilities, attendance, surveying equipments etc., all in accordance with the Specification and Client's requirements. Also, the Contractor should provide the Engineer transportation means (2 vehicles 4x4 latest model, minimum 3,500 cc).</u>					
5-1	Establishment of site offices and equipment	1	LS		Only..... ..... USD	
5-2	Maintenance of the site offices, equipment and transportation means including pay all electricity, water, communication charges, consumables and refreshments for the duration of the contract period.	1	LS		Only..... ..... USD	
5-3	Removal of site offices and equipment	1	LS		Only..... ..... USD	
<b>6</b>	<b><u>Offices and Facilities of the Contractor</u></b> <u>The Contractor is to provide, in positions to be approved by the Engineer, all necessary furnished offices for his site staff and the site staff of all sub-contractors including canteens / mess halls, all in accordance with the Specification and Client's requirements</u>					
6-1	Establishment charge	1	LS		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM A - GENERAL REQUIREMENTS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
6-2	Maintenance charge	1	LS		Only..... ..... USD	
6-3	Removal charge	1	LS		Only..... ..... USD	
<b>7</b>	<b><u>The Contractor is to provide weatherproof lock-up sheds, workshops, stores for the storage and protection of materials, tools, plant &amp; equipments, surveying equipments, and laboratories, all in accordance with the Specification and Client's requirements.</u></b>					
7-1	Establishment charge	1	LS		Only..... ..... USD	
7-2	Maintenance charge	1	LS		Only..... ..... USD	
7-3	Removal charge	1	LS		Only..... ..... USD	
<b>8</b>	<b><u>Allow for Contractor's all site administration</u></b>					
8-1	Administration Staff	1	LS		Only..... ..... USD	
<b>9</b>	<b><u>Safety, Health and Welfare of Work People</u></b>					
9-1	All accommodation and transportation required for the safety, health and welfare facilities including adequate shelter from inclement weather, accommodation for the storage and drying of clothes, taking of meals and sanitary and washing facilities for all people (including labour) employed on the site, first aid facilities, fire fighting equipment and drinking water facilities, including all necessary service connections, etc., all in accordance with the Specification and Client's requirements and the laws and regulations of relevant Authorities.	1	LS		Only..... ..... USD	



**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM A - GENERAL REQUIREMENTS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>10</b>	<b><u>Temporary Water and Electricity Services for the Construction Works</u></b> <u>The Contractor shall provide and maintain temporary water and electricity services required for the Works including that required by the sub-contractors. Pay all charges and bear all costs for the necessary temporary installation including pipe work, pumps, water tankers, storage tanks, generating equipment, etc., and remove on completion and make good all work disturbed.</u>					
10-1	Establishment charge	1	LS		Only..... ..... USD	
10-2	Maintenance charge	1	LS		Only..... ..... USD	
10-3	Removal charge	1	LS		Only..... ..... USD	
<b>11</b>	<b><u>Temporary IT Connections and Equipment</u></b> <u>The Contractor is to provide temporary IT equipment and connections such as telephones, fax machines with connections and internet connections on separate outside lines for staff of the Contractor and the subcontractor's use. He is to allow in his tender for the costs of installation, hire, consumables, charges and removal.</u>					
11-1	Establishment charge	1	LS		Only..... ..... USD	
11-2	Maintenance charge	1	LS		Only..... ..... USD	
11-3	Removal charge	1	LS		Only..... ..... USD	
<b>12</b>	<b><u>Site Hoarding</u></b> <u>The Contractor shall be responsible for the complete installation, maintenance and removal of the site hoarding including make good where necessary and clean the site in accordance with the Specification and Client's requirements</u>					
12-1	Establishment charge	1	LS		Only..... ..... USD	
12-2	Maintenance charge	1	LS		Only..... ..... USD	
12-3	Removal charge	1	LS		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM A - GENERAL REQUIREMENTS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>13</b>	<b><u>Security Arrangements at Site</u></b> <u>Provide and maintain necessary security arrangements including watchmen, all lighting requirements required to safeguard the site, plants, equipments, public and adjoining properties, etc. The Contractor shall be liable for any claims arising from loss or damages suffered and for reinstating and making good after any damage or theft.</u>					
13-1	Establishment charge	1	LS		Only..... ..... USD	
13-2	Maintenance charge	1	LS		Only..... ..... USD	
13-3	Removal charge	1	LS		Only..... ..... USD	
<b>14</b>	<b><u>Project Sign Boards</u></b> <u>The Contractor is to allow for supply, installation and maintenance and removal including make good where necessary of Project Sign Board throughout the construction period, in accordance with the Specification and Client's requirements.</u>					
14-1	Establishment charge	1	LS		Only..... ..... USD	
14-2	Maintenance charge	1	LS		Only..... ..... USD	
14-3	Removal charge	1	LS		Only..... ..... USD	
<b>15</b>	<b><u>Material and Work Testing</u></b>					
15-1	The Contractor shall allow for all requirements, obligations, etc., with regard to all material and work testing that are to be carried out by an approved independent Authority accredited laboratory.	1	LS		Only..... ..... USD	
<b>16</b>	<b><u>Works Free From Water</u></b>					
16-1	Except where underwater construction is required, the Contractor shall execute all works in the dry condition and shall construct any temporary drains, water courses and other works that may be necessary for the purpose.	1	LS		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM A - GENERAL REQUIREMENTS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>17</b>	<b><u>Work Site, Setting Out and Cross Section</u></b>					
17-1	The Contractor is responsible for all the setting out of line and levels of the Works and shall employ adequate qualified staff to carry this out. Where survey markers have been established by the Engineer, the Contractor shall check the accuracy of their position and level and shall immediately notify the Engineer of any discrepancies. The Contractor shall, as soon as practicable, supply the Engineer with records in approved form relating to all reference pegs and bench marks and shall keep such records up to date by formal notice to the Engineer. Before commencing work on any section of the Works, the Contractor, jointly with the Engineer, shall level survey the original ground surface and shall prepare plans and cross-sections accordingly.	1	LS		Only..... ..... USD	
<b>18</b>	<b><u>Existing Services and Service Diversions</u></b>					
18-1	The Contractor shall ascertain the whereabouts of all existing services and public utilities such as electrical cables, telephone lines, sewers, water supply lines, gas lines, pipes, wires, fences, etc., on the site, both above and below ground. The Contractor shall also obtain any re-routing requirements from the concerned authorities and shall be responsible to carry out such works accordingly to the satisfaction of the Authorities and the Engineer.	1	LS		Only..... ..... USD	
18-2	Where diversions of services are not required in connection with the permanent works, the Contractor shall protect, uphold, maintain and keep the same in working order in their existing locations and shall restore them to their original condition on completion to the satisfaction of the Engineer	1	LS		Only..... ..... USD	
<b>19</b>	<b><u>Temporary Site Access</u></b> <u>The Contractor shall prepare and maintain temporary roads, traffic diversion and traffic regulation as may be necessary from the site to the nearest highway and also within the site. The road / any site access shall be positioned in accordance with the Engineer's instructions and shall be kept free for access at all times.</u>					
19-1	Establishment charge	1	LS		Only..... ..... USD	
19-2	Maintenance charge	1	LS		Only..... ..... USD	
19-3	Removal charge	1	LS		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM A - GENERAL REQUIREMENTS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
20	<b><u>Technical Requirements</u></b>					
20-1	The Contractor shall submit to the Engineer for approval a Critical Path Programme, Method Statements, Monthly Progress Report, Progress Photograph, Testing and Commissioning Certificates; Operation and Maintenance Manuals; Training materials; Health and Safety Plan; IFC Drawings; Shop Drawings; As Built Drawings; all Records and other relevant documentation to the Works requested by the Engineer.	1	LS		Only..... ..... USD	
21	<b><u>Preventive Maintenance During Defects Notification Period</u></b>					
21-1	Allow for complete preventive maintenance during Defects Notification Period as per the Contract.	1	LS		Only..... ..... USD	
22	<b><u>Geotechnical Investigation</u></b>					
22-1	The contractor shall be responsible for conducting on-site evaluation and geotechnical investigations, including but not limited to test boring, site samples etc. The contractor shall supply all reports, documents, samples, etc. relevant to this work to the Engineer.	1	LS		Only..... ..... USD	
TOTAL ITEM A (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM B - SITE WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
	The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.					
<b>B</b>	<b><u>SITE WORKS</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Piling and Shoring Works</u></b>					
1-1	Allow for Piling and shoring system including but not limited to mobilization/demobilization, all required and necessary tests, disposal of excavated materials, guidewall, chipping off pile heads, pile head treatment, capping beam, professional indemnity insurance, complete					
1-1-1	Allow for cast-in-situ bored concrete piles (design and build by specialist)	1	LS		Only..... ..... USD	
1-1-2	Allow for permanent shoring system (design and build by specialist)	150	m.		Only..... ..... USD	
<b>2</b>	<b><u>Earthworks</u></b>					
2-1	Bulk excavation to reach desired level	6,229	m3		Only..... ..... USD	
2-2	Excavation for trenches to receive concrete structures	5	m3		Only..... ..... USD	
2-3	Back filling from selected/imported excavated material and compacting in layers not exceeding 25cm to cover concrete structures	225	m3		Only..... ..... USD	
2-4	Cart away to municipality approved location surplus excavated material as advised by engineer.	6,004	m3		Only..... ..... USD	
2-5	Applying Chemical Anti-Termite material under building foundations, beams, ground slabs on grid and external perimeter of the building	1,173	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM B - SITE WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>3</b>	<b><u>Dewatering</u></b>					
3-1	The Contractor shall be responsible for the Design Furnishing Installing, Testing and Maintaining the Dewatering system to control ground water and surface water as required to comply with the specifications and local Authorities requirements and to the Engineer's approval (If dewatering found to be not required as per the actual site conditions then this item will be deleted completely).	1	LS		Only..... ..... USD	
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>4</b>	<b><u>Earthworks</u></b>					
4-1	Bulk excavation to reach desired level	313	m3		Only..... ..... USD	
4-2	Excavation for trenches to receive concrete structures	1	m3		Only..... ..... USD	
4-3	Back filling from selected/imported excavated material and compacting in layers not exceeding 25cm to cover concrete structures	160	m3		Only..... ..... USD	
4-4	Cart away to municipality approved location surplus excavated material as advised by engineer.	153	m3		Only..... ..... USD	
4-5	Applying Chemical Anti-Termite material under building foundations, beams, ground slabs on grid and external perimeter of the building	50	m2		Only..... ..... USD	
<b>5</b>	<b><u>Dewatering</u></b>					
5-1	The Contractor shall be responsible for the Design Furnishing Installing, Testing and Maintaining the Dewatering system to control ground water and surface water as required to comply with the specifications and local Authorities requirements and to the Engineer's approval (If dewatering found to be not required as per the actual site conditions then this item will be deleted completely).	1	LS		Only..... ..... USD	
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>6</b>	<b><u>Earthworks</u></b>					
6-1	Bulk excavation to reach desired level	344	m3		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM B - SITE WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
6-2	Excavation for trenches to receive concrete structures	1	m3		Only..... USD	
6-3	Back filling from selected/imported excavated material and compacting in layers not exceeding 25cm to cover concrete structures	210	m3		Only..... USD	
6-4	Cart away to municipality approved location surplus excavated material as advised by engineer.	134	m3		Only..... USD	
6-5	Applying Chemical Anti-Termite material under building foundations, beams, ground slabs on grid and external perimeter of the building	388	m2		Only..... USD	
<b>7</b>	<b><u>Dewatering</u></b>					
7-1	The Contractor shall be responsible for the Design Furnishing Installing, Testing and Maintaining the Dewatering system to control ground water and surface water as required to comply with the specifications and local Authorities requirements and to the Engineer's approval (If dewatering found to be not required as per the actual site conditions then this item will be deleted completely).	1	LS		Only..... USD	
<b>IV</b>	<b><u>SERVICE BLOCK &amp; WATER TANK</u></b>					
<b>8</b>	<b><u>Earthworks</u></b>					
8-1	Bulk excavation to reach desired level	1,484	m3		Only..... USD	
8-2	Excavation for trenches to receive concrete structures	1	m3		Only..... USD	
8-3	Back filling from selected/imported excavated material and compacting in layers not exceeding 25cm to cover concrete structures	852	m3		Only..... USD	
8-4	Cart away to municipality approved location surplus excavated material as advised by engineer.	632	m3		Only..... USD	
8-5	Applying Chemical Anti-Termite material under building foundations, beams, ground slabs on grid and external perimeter of the building	136	m2		Only..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM B - SITE WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>9</b>	<b><u>Dewatering</u></b>					
9-1	The Contractor shall be responsible for the Design Furnishing Installing, Testing and Maintaining the Dewatering system to control ground water and surface water as required to comply with the specifications and local Authorities requirements and to the Engineer's approval (If dewatering found to be not required as per the actual site conditions then this item will be deleted completely).	1	LS		Only..... ..... USD	
<b>V</b>	<b><u>WASTE WATER TREATMENT ROOM &amp; IRRIGATION WATER TANK</u></b>					
<b>10</b>	<b><u>Earthworks</u></b>					
10-1	Bulk excavation to reach desired level	748	m3		Only..... ..... USD	
10-2	Excavation for trenches to receive concrete structures	1	m3		Only..... ..... USD	
10-3	Back filling from selected/imported excavated material and compacting in layers not exceeding 25cm to cover concrete structures	536	m3		Only..... ..... USD	
10-4	Cart away to municipality approved location surplus excavated material as advised by engineer.	213	m3		Only..... ..... USD	
10-5	Applying Chemical Anti-Termite material under building foundations, beams, ground slabs on grid and external perimeter of the building	50	m2		Only..... ..... USD	
<b>11</b>	<b><u>Dewatering</u></b>					
11-1	The Contractor shall be responsible for the Design Furnishing Installing, Testing and Maintaining the Dewatering system to control ground water and surface water as required to comply with the specifications and local Authorities requirements and to the Engineer's approval (If dewatering found to be not required as per the actual site conditions then this item will be deleted completely).	1	LS		Only..... ..... USD	
<b>VI</b>	<b><u>TESTING STRIPS (POTABLE WATER)</u></b>					
<b>12</b>	<b><u>Earthworks</u></b>					
12.1	Excavation for trench	447	m3		Only..... ..... USD	



**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM B - SITE WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
12.2	Backfilling for trench	386	m3		Only..... ..... USD	
12.3	Blinding; 50mm thick	82	m2		Only..... ..... USD	
12.4	Gravel 3/4" (20cm thk overlay)	81	m2		Only..... ..... USD	
VII	<b><u>TESTING STRIPS (WASTE WATER DRAINAGE)</u></b>					
13	<b><u>Earthworks</u></b>					
13.1	Excavation for trench	268	m3		Only..... ..... USD	
13.2	Backfilling for trench	241	m3		Only..... ..... USD	
13.3	Blinding; 50mm thick	76	m2		Only..... ..... USD	
13.4	Gravel 3/4" (20cm thk overlay)	76	m2		Only..... ..... USD	
TOTAL ITEM B (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM C - CONCRETE**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>C</b>	<b><u>CONCRETE</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Substructure</u></b>					
1-1	<u>Plain in Situ Concrete (Sulphate Resistant Cement) including formwork in accordance with drawings and specifications</u>					
1-1-1	Screed; 50mm thick	1,173	m2		Only..... ..... USD	
1-1-2	Blinding; 50mm thick	1,173	m2		Only..... ..... USD	
1-2	<u>Reinforced in Situ Concrete (OPC+GGBS) including reinforcing steel and formwork in accordance with drawings and specifications</u>					
1-2-1	Raft Foundation	1,056	m3		Only..... ..... USD	
1-2-2	Slab on Grade	18	m3		Only..... ..... USD	
1-2-3	Columns	13	m3		Only..... ..... USD	
1-2-4	Retaining Wall	136	m3		Only..... ..... USD	
1-2-5	Concrete Wall	27	m3		Only..... ..... USD	
1-2-6	Beams	37	m3		Only..... ..... USD	
1-2-7	Stair wall	17	m3		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM C - CONCRETE**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
1-2-8	Lift Wall	6	m3		Only..... USD	
1-2-9	Stair steps	3	m3		Only..... USD	
1-2-10	Stair landing	1	m3		Only..... USD	
1-2-11	Basement ramp	2	m3		Only..... USD	
1-2-12	Ramp wall	28	m3		Only..... USD	
1-3	<u>Cast in situ Reinforced concrete including Reinforcement and Formwork for Post tensioned slab.</u>					
1-3-1	Suspended Slab	996	m2		Only..... USD	
1-4	<u>Supply gunite concrete to shoring works, sprayed at pressure as per drawing and specification</u>					
1-4-1	To secant shoring piles	615	m2		Only..... USD	
<b>2</b>	<b><u>Superstructure</u></b>					
2-1	<u>Reinforced in situ Concrete (Ordinary Portland Cement) including reinforcing steel and formwork in accordance with drawings and specifications</u>					
2-1-1	Columns	30	m3		Only..... USD	
2-1-2	Beams	152	m3		Only..... USD	
2-1-3	Suspended Slab	14	m3		Only..... USD	
2-1-4	Concrete Wall	117	m3		Only..... USD	
2-1-5	Lift Wall	92	m3		Only..... USD	
2-1-6	Stair wall	75	m3		Only..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM C - CONCRETE**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
2-1-7	Stair steps	27	m3		Only..... ..... USD	
2-1-8	Stair landing	24	m3		Only..... ..... USD	
2-2	<u>Cast in situ Reinforced concrete including Reinforcement and Formwork for Post tensioned slab.</u>					
2-2-1	Suspended Slab	2,611	m2		Only..... ..... USD	
2-3	<u>Allow for concrete joint including sealant topping, adhesive and etc... as shown on drawings, all complete to the Engineer's approval.</u>					
2-3-1	Expansion joint	1	LS		Only..... ..... USD	
2-3-2	Construction joint	1	LS		Only..... ..... USD	
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>3</b>	<b><u>Substructure</u></b>					
3-1	<u>Plain in Situ Concrete (Sulphate Resistant Cement) including formwork in accordance with drawings and specifications</u>					
3-1-1	Screed; 50mm thick	241	m2		Only..... ..... USD	
3-1-2	Blinding; 50mm thick	241	m2		Only..... ..... USD	
3-2	<u>Reinforced in Situ Concrete (OPC+GGBS) including reinforcing steel and formwork in accordance with drawings and specifications</u>					
3-2-2	Raft Foundation	121	m3		Only..... ..... USD	
3-2-3	Lift Wall	4	m3		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM C - CONCRETE**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>4</b>	<b><u>Superstructure</u></b>					
4-1	<u>Reinforced in situ Concrete (Ordinary Portland Cement) including reinforcing steel and formwork in accordance with drawings and specifications</u>					
4-1-1	Columns	11	m3		Only..... ..... USD	
4-1-2	Beams	28	m3		Only..... ..... USD	
4-1-3	Suspended Slab	12	m3		Only..... ..... USD	
4-1-4	Lift Wall	14	m3		Only..... ..... USD	
4-1-5	Stair wall	32	m3		Only..... ..... USD	
4-1-6	Stair steps	9	m3		Only..... ..... USD	
4-1-7	Stair landing	8	m3		Only..... ..... USD	
4-2	<u>Cast in situ Reinforced concrete including Reinforcement and Formwork for Post tensioned slab, Design by specialised contractors and approved by the Engineer.</u>					
4-2-1	Suspended Slab	663	m2		Only..... ..... USD	
4-3	<u>Allow for concrete joint including sealant topping, adhesive and etc... as shown on drawings, all complete to the Engineer's approval.</u>					
4-3-1	Expansion joint	1	LS		Only..... ..... USD	
4-3-2	Construction joint	1	LS		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM C - CONCRETE**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>5</b>	<b><u>Substructure</u></b>					
5-1	<u>Plain in Situ Concrete (Sulphate Resistant Cement) including formwork in accordance with drawings and specifications</u>					
5-1-1	Blinding; 100mm thick	107	m2		Only..... ..... USD	
5-2	<u>Reinforced in Situ Concrete (OPC+GGBS) including reinforcing steel and formwork in accordance with drawings and specifications</u>					
5-2-1	Footing	18	m3		Only..... ..... USD	
5-2-2	Footing tie beam	32	m3		Only..... ..... USD	
5-2-3	Pedestal	7	m3		Only..... ..... USD	
5-2-4	Slab on Grade	68	m3		Only..... ..... USD	
<b>6</b>	<b><u>Superstructure</u></b>					
6-1	<u>Supply and Installation of Composite Metal Floor Deck, complete as per the drawings and specification and approved by the Engineer.</u>					
6-1-1	Suspended Slab deck at mezzanine	235	m2		Only..... ..... USD	
6-2	<u>Allow for concrete joint including sealant topping, adhesive and etc... as shown on drawings, all complete to the Engineer's approval.</u>					
6-2-1	Expansion joint	1	LS		Only..... ..... USD	
<b>IV</b>	<b><u>SERVICE BLOCK &amp; WATER TANK</u></b>					
<b>7</b>	<b><u>Substructure</u></b>					
7-1	<u>Plain in Situ Concrete (Sulphate Resistant Cement) including formwork in accordance with drawings and specifications</u>					
7-1-1	Screed; 50mm thick	139	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM C - CONCRETE**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
7-1-2	Blinding; 50mm thick	139	m2		Only..... ..... USD	
7-2	<u>Reinforced in Situ Concrete (OPC+GGBS) including reinforcing steel and formwork in accordance with drawings and specifications</u>					
7-2-1	Base slab Foundation	55	m3		Only..... ..... USD	
7-2-2	Walls	76	m3		Only..... ..... USD	
7-2-3	Ground Slab	34	m3		Only..... ..... USD	
<b>8</b>	<b><u>Superstructure</u></b>					
8-1	<u>Reinforced in situ Concrete (Ordinary Portland Cement) including reinforcing steel and formwork in accordance with drawings and specifications.</u>					
8-1-1	Columns	4	m3		Only..... ..... USD	
8-1-2	Beams	7	m3		Only..... ..... USD	
8-1-3	Suspended Slab	29	m3		Only..... ..... USD	
8-2	<u>Allow for concrete joint including sealant topping, adhesive and etc... as shown on drawings, all complete to the Engineer's approval.</u>					
8-2-1	Expansion joint	1	LS		Only..... ..... USD	
8-2-2	Construction joint	1	LS		Only..... ..... USD	
<b>V</b>	<b><u>WASTE WATER TREATMENT ROOM &amp; IRRIGATION WATER TANK</u></b>					
<b>9</b>	<b><u>Substructure</u></b>					
9-1	<u>Plain in Situ Concrete (Sulphate Resistant Cement) including formwork in accordance with drawings and specifications</u>					
9-1-1	Screed; 50mm thick	52	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM C - CONCRETE**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
9-1-2	Blinding; 50mm thick	52	m2		Only..... ..... USD	
9-2	<u>Reinforced in Situ Concrete (OPC+GGBS) including reinforcing steel and formwork in accordance with drawings and specifications</u>					
9-2-1	Base slab foundation	18	m3		Only..... ..... USD	
9-2-2	Walls	38	m3		Only..... ..... USD	
9-2-3	Ground Slab	15	m3		Only..... ..... USD	
VI	<b><u>TESTING STRIPS (POTABLE WATER)</u></b>					
10	<u>Reinforced in Situ Concrete including reinforcing steel and formwork in accordance with drawings and specifications</u>					
10-1	Concrete Retaining Wall for platform	37	m3		Only..... ..... USD	
VII	<b><u>TESTING STRIPS (WASTE WATER DRAINAGE)</u></b>					
11	<u>Reinforced in Situ Concrete including reinforcing steel and formwork in accordance with drawings and specifications</u>					
11-1	Concrete Retaining Wall for platform	41	m3		Only..... ..... USD	
<b>TOTAL ITEM C (USD)</b>						

Only

USD



**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM D - MASONRY**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>D</b>	<b><u>MASONRY</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Block Works</u></b>					
1-1	Hollow block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m <sup>2</sup> and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm <sup>2</sup> .					
1-1-1	To internal walls; 200mm thick;	2,027	m <sup>2</sup>		Only..... ..... USD	
1-1-2	To internal walls; 150mm thick;	15	m <sup>2</sup>		Only..... ..... USD	
1-1-3	To internal walls; 100mm thick;	815	m <sup>2</sup>		Only..... ..... USD	
1-2	Thermal block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m <sup>2</sup> and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm <sup>2</sup> .					
1-2-1	To external walls; 300mm thick;	793	m <sup>2</sup>		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM D - MASONRY**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
2	<b><u>Block Works</u></b>					
2-1	<u>Hollow block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m2 and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm2.</u>					
2-1-1	To internal walls; 200mm thick;	382	m2		Only..... ..... USD	
2-1-3	To internal walls; 100mm thick;	447	m2		Only..... ..... USD	
2-2	<u>Thermal block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m2 and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm2.</u>					
2-2-1	To external walls; 200mm thick;	575	m2		Only..... ..... USD	
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
3	<b><u>Block Works</u></b>					
3-1	<u>Hollow block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m2 and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm2.</u>					
3-1-1	To internal walls; 200mm thick;	106	m2		Only..... ..... USD	
3-2	<u>Thermal block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m2 and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm2.</u>					
3-2-1	To external walls; 200mm thick;	435	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM D - MASONRY**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
IV	<b><u>SERVICE BLOCK &amp; WATER TANK</u></b>					
4	<b><u>Block Works</u></b>					
4-1	<u>Hollow block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m2 and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm2.</u>					
4-1-1	To internal walls; 200mm thick;	26	m2		Only..... ..... USD	
4-2	<u>Thermal block masonry work including bedding, stiffeners, jointing and pointing in cement and sand mortar (1: 4) and galvanized expanded metal lath reinforcement not less than 1kg/m2 and angle ties and fire rating compliance. Hollow blocks shall have minimum strength of 7N/mm2.</u>					
4-2-1	To external walls; 200mm thick;	202	m2		Only..... ..... USD	
TOTAL ITEM D (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM E - METALS WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>E</b>	<b><u>METALS WORKS</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Structural Steel Framing Works</u></b>					
	<b><u>Structural Stainless Steel Framing Works</u></b>					
1-1	Allow for stainless steel structure to main entrance canopy (glass measured separately), complete, as per drawings and specification	1	LS		Only..... ..... USD	
<b>2</b>	<b><u>Non-structural Metal Works</u></b>					
2-1	<b><u>Metal Hand Railings &amp; Guard Railings</u></b>					
2-1-1	To Stair as per specification	172	m		Only..... ..... USD	
2-2	<b><u>Steel Mesh Screen</u></b>					
2-2-1	Allow for steel mesh screen to main facade, complete, as per drawings and specification	1	LS		Only..... ..... USD	
2-3	<b><u>Floor Grating</u></b>					
2-3-1	To basement, 30cm wide heavy duty floor grating	12	m		Only..... ..... USD	
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>3</b>	<b><u>Non-structural Metal Works</u></b>					
3-1	<b><u>Metal Hand Railings &amp; Guard Railings</u></b>					
3-1-1	To Stair as per drawings and specification	44	m		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM E - METALS WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>4</b>	<b><u>Structural Steel Framing Works</u></b>					
	Supply and Installation of Structural Steel Framing structure including sundry items all complete as per drawings, specification and to the Engineer's approval.					
4-1	To the Superstructure of the building (column, beam and roof framing), complete, as per drawings and specification	1	LS		Only..... ..... USD	
4-2	Metal steel stair including steel handrail, complete, as per drawing and specification	2	no.		Only..... ..... USD	
<b>5</b>	<b><u>Non-structural Metal Works</u></b>					
5-1	<b><u>Metal Hand Railings &amp; Guard Railings</u></b>					
5-1-1	To Stair as per drawing and specification	11	m		Only..... ..... USD	
5-2	<b><u>Metal Gratings</u></b>					
5-2-1	Gratings as per drawing and specification	1	LS		Only..... ..... USD	
<b>6</b>	<b><u>Roofing system</u></b>					
6-1	Allow for supply and fixing of aluminum sandwich panels roof, complete as per drawings and specification	418	m2		Only..... ..... USD	
<b>IV</b>	<b><u>SERVICE BLOCK &amp; WATER TANK</u></b>					
<b>7</b>	<b><u>Non-structural Metal Works</u></b>					
7-1	<b><u>Metal Ladders</u></b>					
7-1-1	Metal ladder as detailed on drawings and as per specification	1	no.		Only..... ..... USD	
7-1-2	To pump room and any other rooms as per drawings and specification	1	no.		Only..... ..... USD	
7-1-3	GRP ladder to water tank as per drawings and specification	2	no.		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM E - METALS WORKS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
7-2	<u>Metal Gratings</u>					
7-2-1	Gratings as per drawings and specification	1	LS		Only..... ..... USD	
<b>8</b>	<b><u>Access Platforms</u></b>					
8-1	<u>Galvanized steel access platforms consisting of galvanized steel expanded mesh and approved supported on angle or tee sections clipped to plate and supported on I-beams built into the structure, painted, complete</u>					
8-1-1	To Pump room as per drawings and specification	1	no.		Only..... ..... USD	
<b>V</b>	<b><u>WASTE WATER TREATMENT ROOM &amp; IRRIGATION WATER TANK</u></b>					
<b>9</b>	<b><u>Non-structural Metal Works</u></b>					
9-1	<u>Metal Ladders</u>					
9-1-1	To pump room and any other rooms as per drawings and specification	2	no.		Only..... ..... USD	
9-1-2	GRP ladder to water tank as per drawings and specification	1	no.		Only..... ..... USD	
9-2	<u>Metal Gratings</u>					
9-2-1	Gratings as per drawings and specification	1	LS		Only..... ..... USD	
<b>10</b>	<b><u>Access Platforms</u></b>					
10-1	<u>Galvanized steel access platforms consisting of galvanized steel expanded mesh and approved supported on angle or tee sections clipped to plate and supported on I-beams built into the structure, painted, complete</u>					
10-1-1	To Pump room as per drawings and specification	1	no.		Only..... ..... USD	
<b>TOTAL ITEM E (USD)</b>						

Only

USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM F - WOOD, PLASTICS AND COMPOSITES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>F</b>	<b><u>WOOD, PLASTICS AND COMPOSITES</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Wood Works</u></b>					
1-1	Allow for kitchen / pantry cabinets including shelves, backs, drawers with sliders, hinges, knobs/handles, assembling and placing in position and sealing all joints to backgrounds with silicone sealants including hood, light, sink with fittings, worktop with backsplash as shown on drawings and as per drawings and specifications					
1-1-1	Base cabinet	22.10	m.		Only..... ..... USD	
1-1-2	Wall cabinet	7.20	m.		Only..... ..... USD	
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>2.0</b>	<b><u>Wood Works</u></b>					
2-1	Allow for kitchen / pantry cabinets including shelves, backs, drawers with sliders, hinges, knobs/handles, assembling and placing in position and sealing all joints to backgrounds with silicone sealants including hood, light, sink with fittings, worktop with backsplash as shown on drawings and as per drawings and specifications					
2-1-1	Base cabinet	3.75	m.		Only..... ..... USD	
2-1-2	Wall cabinet	3.75	m.		Only..... ..... USD	
<b>TOTAL ITEM F (USD)</b>						

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM G - THERMAL AND MOISTURE PROTECTION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>G</b>	<b><u>THERMAL AND MOISTURE PROTECTION</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Substructure Waterproofing</u></b>					
1-1	<u>Waterproofing to foundations, complete, as per drawings and specification</u>					
1-1-1	To concrete surfaces; horizontal	1,173	m2		Only..... ..... USD	
1-1-2	To concrete surfaces; vertical	714	m2		Only..... ..... USD	
1-1-3	Ditto, 6mm thick protection board	714	m2		Only..... ..... USD	
1-2	<u>Waterproofing under ground slab, complete, as per drawings and specification</u>					
1-2-1	To below ground slab; horizontal	996	m2		Only..... ..... USD	
<b>2</b>	<b><u>Roof Waterproofing</u></b>					
2-1	Combo roof waterproofing system including screed, termination, aluminum flashing, roof tiles, etc., complete, as per drawing and specification	777	m2		Only..... ..... USD	
<b>3</b>	<b><u>Wet Areas Waterproofing</u></b>					
3-1	<u>Wet areas waterproofing on concrete slab including sides prior to receiving finishes, complete, as per drawings and specification</u>					
3-1-1	Toilet / Pantry / Kitchen	321	m2		Only..... ..... USD	
3-1-2	Plant boxes	1	m2		Only..... ..... USD	



**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM G - THERMAL AND MOISTURE PROTECTION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>4</b>	<b><u>Substructure Waterproofing</u></b>					
4-1	<u>Waterproofing foundations, complete, as per drawings and specification</u>					
4-1-1	To concrete surfaces; horizontal	241	m2		Only..... ..... USD	
4-1-2	To concrete surfaces; vertical	48	m2		Only..... ..... USD	
4-1-3	Ditto, 6mm thick protection board	48	m2		Only..... ..... USD	
<b>5</b>	<b><u>Roof Waterproofing</u></b>					
5-1	Combo roof waterproofing system including screed, termination, aluminum flashing, roof tiles, etc., complete, as per drawings and specification	246	m2		Only..... ..... USD	
<b>6.0</b>	<b><u>Wet Areas Waterproofing</u></b>					
6-1	<u>Wet areas waterproofing on concrete slab including sides prior to receiving finishes, complete, as per drawings and specification</u>					
6-1-1	Toilet / Pantry	95	m2		Only..... ..... USD	
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>7</b>	<b><u>Wet Areas Waterproofing</u></b>					
7-1	<u>Wet areas waterproofing on concrete slab including sides prior to receiving finishes, complete, as per drawings and specification</u>					
7-1-1	Toilet / Shower	60	m2		Only..... ..... USD	
7-2	<u>Waterproofing under foundation base slab, complete, as per drawings and specification</u>					
7-2-1	To below slab on grade; horizontal	340	m2		Only..... ..... USD	
<b>IV</b>	<b><u>SERVICE BLOCK &amp; WATER TANK</u></b>					
<b>8</b>	<b><u>Water Tank Waterproofing</u></b>					
8-1	<u>4mm thick GRP lining applied, complete, as per drawings and specification</u>					
8-1-1	To water tank floor	77	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM G - THERMAL AND MOISTURE PROTECTION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
8-1-2	To water tank wall	224	m2		Only..... ..... USD	
8-1-3	To water tank soffit	77	m2		Only..... ..... USD	
8-2	<u>Waterproofing under ground slab, complete, as per drawings and specification</u>					
8-2-1	To below slab on grade; horizontal	136	m2		Only..... ..... USD	
8-2-2	Ditto, 6mm thick protection board	218	m2		Only..... ..... USD	
8-3	<u>Waterproofing under foundation base slab, complete, as per drawings and specification</u>					
8-3-1	To below base slab; horizontal	138	m2		Only..... ..... USD	
8-4	<u>PVC waterstops complete as detailed on drawings and specification</u>					
8-4-1	To water tank	1	LS		Only..... ..... USD	
<b>9</b>	<b><u>Roof Waterproofing</u></b>					
9-1	Combo roof waterproofing system including screed, termination, aluminum flashing, roof tiles, etc., complete, as per drawings and specification	102	m2		Only..... ..... USD	
<b>V</b>	<b><u>WASTE WATER TREATMENT ROOM &amp; IRRIGATION WATER TANK</u></b>					
<b>10</b>	<b><u>Water Tank Waterproofing</u></b>					
10-1	<u>4mm thick GRP lining applied, complete, as per drawings and specification</u>					
10-1-1	To water tank floor	25	m2		Only..... ..... USD	
10-1-2	To water tank wall	76	m2		Only..... ..... USD	
10-1-3	To water tank soffit	25	m2		Only..... ..... USD	
10-2	<u>Waterproofing under ground slab, complete, as per drawings and specification</u>					
10-2-1	To below slab on grade; horizontal	49	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM G - THERMAL AND MOISTURE PROTECTION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
10-2-2	Ditto, 6mm thick protection board	125	m2		Only..... ..... USD	
10-3	<u>Waterproofing under foundation base slab, complete, as per drawings and specification</u>					
10-3-1	To below slab on grade; horizontal	52	m2		Only..... ..... USD	
10-4	<u>PVC waterstops complete as detailed on drawings and specification</u>					
10-4-1	To water tank	1	LS		Only..... ..... USD	
TOTAL ITEM G (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM H - OPENINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>H</b>	<b><u>OPENINGS</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Wooden Doors</u></b>					
1-1	Supply and fix wooden door, complete with finishing, architrave, supply and fixing of ironmongery, fire rated wherever necessary, complete, as per drawings and specification					
1-1-1	TD.01, 1700mm x 2200 mm size	2	no.		Only..... ..... USD	
1-1-2	TD.02, 1200mm x 2200 mm size	4	no.		Only..... ..... USD	
1-1-3	TD.03, 900mm x 2200 mm size	51	no.		Only..... ..... USD	
1-1-4	TD.04, 800mm x 2200 mm size	21	no.		Only..... ..... USD	
1-1-5	TD.05, 1000mm x 2200 mm size	7	no.		Only..... ..... USD	
1-1-6	TD.06, 900mm x 2200 mm size	9	no.		Only..... ..... USD	
1-1-7	TD.07, 900mm x 2200 mm size	3	no.		Only..... ..... USD	
1-1-8	TD.09, 800mm x 2200 mm size	4	no.		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM H - OPENINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>2</b>	<b><u>Aluminum Works</u></b>					
2-1	Supply and fix complete door/window set comprising of glass, or aluminum louver, powder coated aluminum frame, supply and fixing or ironmongery, fire rated wherever necessary, complete, as per drawings and specification					
2-1-1	W1, 800mm x 600mm size, powder coated aluminium, double glazed	6	no.		Only..... ..... USD	
2-2	Allow for supply and fix complete set of curtain wall (with spider system) comprising of glass, stainless steel support and connections, supply and fixing or ironmongery,complete, as per drawings and specification					
2-2-1	CW 01	1	no.		Only..... ..... USD	
2-2-2	CW 02	1	no.		Only..... ..... USD	
2-2-3	CW 03	1	no.		Only..... ..... USD	
2-2-4	CW 04	1	no.		Only..... ..... USD	
2-2-5	CW 05	1	no.		Only..... ..... USD	
2-2-6	CW 06	2	no.		Only..... ..... USD	
2-2-7	CW 07	2	no.		Only..... ..... USD	
2-2-8	CW 08	1	no.		Only..... ..... USD	
2-2-9	CW 09	1	no.		Only..... ..... USD	
2-2-10	CW 10	4	no.		Only..... ..... USD	
2-2-11	CW 11	1	no.		Only..... ..... USD	
2-2-12	CW 12	1	no.		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM H - OPENINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
2-2-13	CW 13	1	no.		Only..... ..... USD	
2-2-14	CW 14	1	no.		Only..... ..... USD	
2-2-15	CW 15	3	no.		Only..... ..... USD	
2-2-16	CW 16	6	no.		Only..... ..... USD	
2-2-17	CW 17	3	no.		Only..... ..... USD	
2-2-18	CW 18	3	no.		Only..... ..... USD	
2-3	Allow for glass roof to stainless steel structure (stainless steel framework measured separately), complete, as per drawings and specification					
2-3-1	At main entrance canopy	1	LS		Only..... ..... USD	
<b>3</b>	<b><u>Steel Doors</u></b>					
3-1	Supply and fix complete steel door with galvanized steel frame, including supply and fixing of ironmongery, hinges, painting, fire rated, complete, as per drawings and specification					
3-1-1	SD.01, 9400mm x 3600 mm size	1	no.		Only..... ..... USD	
3-1-2	SD.02, 900mm x 2200 mm size	4	no.		Only..... ..... USD	
3-1-3	SD.03, 1100mm x 2200 mm size	2	no.		Only..... ..... USD	
3-1-4	SD.04, 600mm x 600 mm size	2	no.		Only..... ..... USD	
3-1-5	SD.05, 800mm x 2200 mm size	1	no.		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**

**ITEM H - OPENINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>4</b>	<b><u>Wooden Doors</u></b>					
4-1	Supply and fix wooden door, complete with finishing, architrave, supply and fixing of ironmongery, fire rated wherever necessary, complete, as per drawings and specification					
4-1-1	TD.03, 900mm x 2200 mm size	20	no.		Only..... ..... USD	
4-1-2	TD.04, 800mm x 2200 mm size	1	no.		Only..... ..... USD	
4-1-3	TD.05, 1000mm x 2200 mm size	1	no.		Only..... ..... USD	
4-1-4	TD.06, 900mm x 2200 mm size	12	no.		Only..... ..... USD	
4-1-5	TD.07, 900mm x 2200 mm size	1	no.		Only..... ..... USD	
<b>5</b>	<b><u>Aluminum Works</u></b>					
5-1	Supply and fix complete door/window set comprising of glass, or aluminum louver, powder coated aluminum frame, supply and fixing or ironmongery, fire rated wherever necessary, complete, as per drawings and specification					
5-1-1	W1, 4000mm x 1200mm size, powder coated aluminium, double glazed	3	no.		Only..... ..... USD	
5-1-2	W2, 800mm x 600mm size, powder coated aluminium, double glazed	20	no.		Only..... ..... USD	
5-2	Allow for supply and fix complete set of glazed curtain wall (frameless system) complete, as per drawings and specification					
5-2-1	CW 01	1	no.		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM H - OPENINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>6</b>	<b><u>Wooden Doors</u></b>					
6-1	Supply and fix wooden door, complete with finishing, architrave, supply and fixing of ironmongery, fire rated wherever necessary, complete, as per drawings and specification					
6-1-1	TD.06, 900mm x 2200 mm size	2	no.		Only..... ..... USD	
<b>7</b>	<b><u>Steel Doors</u></b>					
7-1	Supply and fix complete steel door with galvanized steel frame, including supply and fixing of ironmongery, hinges, painting, fire rated, complete, as per drawings and specification					
7-1-1	SD.06, 2000mm x 2200 mm size	3	no.		Only..... ..... USD	
<b>8</b>	<b><u>Laminated frame</u></b>					
8-1	Supply and fix complete laminated panel partition with single leaf door including supply and fixing of ironmongery, hinges, complete, as per drawings and specification					
8-1-1	LP.08, 750mm x 2000 mm leaf size	8	no.		Only..... ..... USD	
<b>IV</b>	<b><u>SERVICE BLOCK &amp; WATER TANK</u></b>					
<b>9</b>	<b><u>Steel Doors</u></b>					
9-1	Supply and fix complete steel door with galvanized steel frame, including supply and fixing of ironmongery, hinges, painting, fire rated, complete, as per drawings and specification					
9-1-1	SD.02, 900mm x 2200 mm size	1	no.		Only..... ..... USD	
9-1-2	SD.05, 1400mm x 2200 mm size	1	no.		Only..... ..... USD	
9-1-3	SD.07, 600mm x 600 mm size	2	no.		Only..... ..... USD	



**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM H - OPENINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
9-2	Supply and fix complete steel louver door/panel with galvanized steel frame, including supply and fixing of ironmongery, hinges, painting, fire rated, complete, as per drawings and specification					
9-2-1	CW 18	1	no.		Only..... ..... USD	
9-2-2	CW 19	1	no.		Only..... ..... USD	
TOTAL ITEM H (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM I - FINISHES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>I</b>	<b><u>FINISHES</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b>Floor Finish</b>					
1-1	Marble 20mm thk, including screed/mortar, grout, etc. complete, as per drawings and specification	737	m2		Only..... ..... USD	
1-2	60 x 60 ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	1,246	m2		Only..... ..... USD	
1-3	30 x 30 anti slip ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	138	m2		Only..... ..... USD	
1-4	30 x 30 ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	58	m2		Only..... ..... USD	
1-5	Carpet, including screed, etc. complete, as per drawings and specification	160	m2			
1-6	Epoxy floor paint, including screed, etc. complete, as per drawings and specification	46	m2		Only..... ..... USD	
1-7	Skid resistant epoxy paint, including screed, etc. complete, as per drawings and specification	900	m2		Only..... ..... USD	
1-8	40 x 40 x 25mm mosaic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	656	m2		Only..... ..... USD	
<b>2</b>	<b>Skirting</b>					
2-1	Marble to match flooring, 150mm high, including screed/mortar, grout, etc. complete, as per drawings and specification	574	m2		Only..... ..... USD	
2-2	Ceramic tile to match flooring, 100mm high, including screed/mortar, grout, etc. complete, as per drawings and specification	971	m2		Only..... ..... USD	
2-3	300mm high 20mm thk mosaic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	221	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM I - FINISHES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>3</b>	<b>Wall Finish</b>					
3-1	Emulsion paint, complete, as per drawings and specification	4,387	m2		Only..... ..... USD	
3-2	30 x 30 anti-slip ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	231	m2		Only..... ..... USD	
3-3	20 x 30 anti-slip ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	559	m2		Only..... ..... USD	
3-4	Epoxy paint, complete, as per drawings and specification	945	m2		Only..... ..... USD	
3-5	Plaster to receive paint, complete as per drawings and specification	945	m2		Only..... ..... USD	
<b>4</b>	<b>Ceiling Finish</b>					
4-1	Gypsum board with paint, complete, as per drawings and specification	641	m2		Only..... ..... USD	
4-2	Acoustic decorative gypsum, complete, as per drawings and specification	160	m2			
4-3	60 x 60 Plain Aluminum Tile, complete, as per drawings and specification	1,441	m2		Only..... ..... USD	
4-4	Emulsion paint, complete, as per drawings and specification	231	m2		Only..... ..... USD	
4-5	Epoxy Paint, complete, as per drawings and specification	978	m2		Only..... ..... USD	
4-6	Plaster to receive paint, complete as per drawings and specification	1,209	m2		Only..... ..... USD	
<b>5</b>	<b>External Finish</b>					
5-1	Emulsion Water Resistant Paint Coat, complete, as per drawings and specification	88	m2		Only..... ..... USD	
5-2	Plaster to receive paint, complete as per drawings and specification	88	m2		Only..... ..... USD	
5-3	External granite tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	211	m2		Only..... ..... USD	
5-4	Aluminum composite panel (ACP) cladding works at Façade, including rockwool insulation, complete, as per drawings and specification	1,410	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM I - FINISHES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
5-5	Aluminum louver at façade, complete, as per drawings and specification (Lm.=18.00 meters)	8	no.		Only..... ..... USD	
<b>6</b>	<b>Marble finish</b>					
6-1	Treshold , complete, as per drawings & specification (cut-to-size)	1	LS		Only..... ..... USD	
<b>II</b>	<b>OFFICE BUILDING</b>					
<b>7</b>	<b>Floor Finish</b>					
7-1	Marble 20mm thk, including screed/mortar, grout, etc. complete, as per drawings and specification	360	m2		Only..... ..... USD	
7-2	60 x 60 ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	163	m2		Only..... ..... USD	
7-3	30 x 30 anti slip ceramic tiles, including screed/mortar, grout, etc. complete, as per drawing and specification	29	m2		Only..... ..... USD	
7-4	30 x 30 ceramic tiles, including screed/mortar, grout, etc. complete, as per drawing and specification	61	m2		Only..... ..... USD	
7-5	Epoxy floor paint, including screed, etc. complete, as per drawings and specification	23	m2		Only..... ..... USD	
7-6	40 x 40 x 25mm mosaic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	220	m2		Only..... ..... USD	
<b>8</b>	<b>Skirting</b>					
8-1	Marble to match flooring, 150mm high, including screed/mortar, grout, etc. complete, as per drawings and specification	314	m2		Only..... ..... USD	
8-2	Ceramic tile to match flooring, 100mm high, including screed/mortar, grout, etc. complete, as per drawings and specification	174	m2		Only..... ..... USD	
8-3	300mm high 20mm thk mosaic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	112	m2		Only..... ..... USD	
<b>9</b>	<b>Wall Finish</b>					
9-1	Emulsion paint, complete, as per drawings and specification	1,188	m2		Only..... ..... USD	
9-2	30 x 30 ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	42	m2		Only..... ..... USD	
9-3	20 x 30 ceramic tiles, including screed/mortar, grout, etc. complete, as per drawings and specification	103	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM I - FINISHES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
9-4	Epoxy paint, complete, as per drawings and specification	195	m2		Only..... USD	
9-5	Plaster to receive paint, complete, as per drawings and specification	195	m2		Only..... USD	
<b>10</b>	<b>Ceiling Finish</b>					
10-1	Gypsum board with paint, complete, as per drawings and specification	271	m2		Only..... USD	
10-2	60 x 60 Plain Aluminum Tile, complete, as per drawings and specification	270	m2		Only..... USD	
10-3	Emulsion paint, complete, as per drawings and specification	115	m2		Only..... USD	
10-4	Plaster to receive paint, complete, as per drawings and specification	115	m2		Only..... USD	
<b>11</b>	<b>External Finish</b>					
11-1	Emulsion Water Resistant Paint Coat, complete, as per drawings and specification	996	m2		Only..... USD	
11-2	Plaster to receive paint, complete, as per drawings and specification	996	m2		Only..... USD	
<b>12</b>	<b>Marble finish</b>					
12-1	Treshold , complete, as per drawings & specification (cut-to-size)	1	LS		Only..... USD	
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>13</b>	<b>Floor Finish</b>					
13-1	Epoxy floor paint, including screed, etc. complete, as per drawings and specification	529	m2		Only..... USD	
<b>14</b>	<b>Wall Finish</b>					
14-1	Epoxy paint, complete, as per drawings and specification	579	m2		Only..... USD	
14-2	Plaster to receive paint, complete, as per drawings and specification	579	m2		Only..... USD	
<b>15</b>	<b>Ceiling Finish</b>					
15-1	Epoxy Paint, complete, as per drawings and specification	529	m2		Only..... USD	
15-2	Emulsion paint, complete, as per drawings and specification	30	m2		Only..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM I - FINISHES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
15-3	Plaster to receive paint, complete, as per drawings and specification	559	m2		Only..... ..... USD	
<b>16</b>	<b>External Finish</b>					
16-1	Emulsion water resistant paint, complete, as per drawings and specification	468	m2		Only..... ..... USD	
16-2	Plaster, complete, as per drawings and specification	468	m2		Only..... ..... USD	
<b>IV</b>	<b><u>SERVICE BLOCK &amp; WATER TANK</u></b>					
<b>17</b>	<b>Floor Finish</b>					
17-1	Epoxy floor paint, including screed, etc. complete, as per drawings and specification	227	m2		Only..... ..... USD	
<b>18</b>	<b>Wall Finish</b>					
18-1	Epoxy paint, complete, as per drawings and specification	289	m2		Only..... ..... USD	
18-2	Plaster to receive paint, complete, as per drawings and specification	289	m2		Only..... ..... USD	
<b>19</b>	<b>Ceiling Finish</b>					
19-1	Epoxy Paint, complete, as per drawings and specification	133	m2		Only..... ..... USD	
19-2	Plaster to receive paint, complete, as per drawings and specification	133	m2		Only..... ..... USD	
<b>20</b>	<b>External Finish</b>					
20-1	Emulsion water resistant paint, complete, as per drawings and specification	133	m2		Only..... ..... USD	
20-2	Plaster to receive paint, complete, as per drawings and specification	133	m2		Only..... ..... USD	
<b>V</b>	<b><u>WASTE WATER TREATMENT ROOM &amp; IRRIGATION WATER TANK</u></b>					
<b>21</b>	<b>Floor Finish</b>					
21-1	Epoxy floor paint, including screed, etc. complete, as per drawing and specification	16	m2		Only..... ..... USD	
<b>22</b>	<b>Wall Finish</b>					
22-1	Epoxy paint, complete, as per drawings and specification	61	m2		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM I - FINISHES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
22-2	Plaster to receive paint, complete, as per drawings and specification	61	m2		Only..... ..... USD	
23	Ceiling Finish					
23-1	Epoxy Paint, complete, as per drawings and specification	16	m2		Only..... ..... USD	
23-2	Plaster to receive paint, complete, as per drawings and specification	16	m2		Only..... ..... USD	
TOTAL ITEM I (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM J - SPECIALTIES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>J</b>	<b><u>SPECIALTIES</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b>Allow for warning and regulatory signs including posts embedded in ground/pavement with concrete surround, or surface mounted, complete, as per drawings and specification</b>					
1-1	Traffic signage	1	LS		Only..... ..... USD	
1-2	Parking guidance	1	LS		Only..... ..... USD	
<b>2</b>	<b>Allow for auditorium folding partition, complete, as per drawings and specification</b>					
2-1	Folding partition	1	LS		Only..... ..... USD	
<b>3</b>	<b>Allow for basement parking protection, complete, as per drawings and specification</b>					
3-1	Column & wall protection at basement	1	LS		Only..... ..... USD	
3-2	Wheel Stopper	25	no.		Only..... ..... USD	
<b>4</b>	<b>Allow for staff locker wherever necessary, complete, as per drawings and specification</b>					
4-1	Staff locker	1	LS		Only..... ..... USD	



**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM J - SPECIALTIES**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>5</b>	<b>Allow for ceramic finish vanity countertops as per drawings and specification</b>					
5-1	To Female WC, Ground flr.	1	no.		Only..... ..... USD	
5-2	To Male WC, Ground flr.	1	no.		Only..... ..... USD	
5-3	To Wash room, Auditorium Office, Ground flr.	1	no.		Only..... ..... USD	
5-4	To Female WC, 1st to 3rd flr.	3	no.		Only..... ..... USD	
5-5	To Male WC, 1st to 3rd flr.	3	no.		Only..... ..... USD	
5-6	To Director Office wash room, 1st to 3rd flr.	3	no.		Only..... ..... USD	
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>6</b>	<b>Allow for ceramic finish vanity countertops as per drawings and specification</b>					
6-1	To wash room at Lobby, Ground flr.	1	no.		Only..... ..... USD	
6-2	To wash room at Lobby, 1st to 2nd flr.	2	no.		Only..... ..... USD	
<b>III</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>7</b>	<b>Allow for ceramic finish vanity countertops as per drawings and specification</b>					
7-1	To toilet at Atelier, Ground flr.	2	no.		Only..... ..... USD	
<b>TOTAL ITEM J (USD)</b>						

Only

USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK****ITEM K - EQUIPMENT**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>K</b>	<b><u>EQUIPMENT</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b>Traffic Barrier</b>					
1-1	Supply and install automatic traffic barriers, including any necessary additional traffic sign board, finish, necessary controls and safety systems, all related electrical, mechanical and civil works, complete, as per specification					
1-1-1	Traffic barrier (Entrance/Exit barrier in complete set) wherever required	1	LS		Only..... ..... USD	
<b>2</b>	<b>Photo Voltaic (PV) Solar Panels and Collector, complete, as per specification</b>					
2-1	Allow for supply, install and commission of polycrystalline PV Solar Panels modules on roof, with structural support, including all fixing accessories, by a Specialist, including warranty, PV collector, complete	1	LS		Only..... ..... USD	
2-2	<u>Allow for auditorium and stage curtain system , complete, as per specification</u>					
2-2-1	Auditorium and Stage curtain system	1	LS		Only..... ..... USD	
<b>TOTAL ITEM K (USD)</b>						

Only

USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM L - SPECIAL CONSTRUCTION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
L	<b><u>SPECIAL CONSTRUCTION</u></b>					
I	<b><u>ADMINISTRATION BUILDING</u></b>					
1	Allow for special construction including structural, architectural and MEP works, including mobilization/demobilization, all required and necessary tests, complete, as per drawings and specification					
1-1	Water Features	1	LS		Only..... ..... USD	
1-2	Artwork to the water features	1	LS		Only..... ..... USD	
TOTAL ITEM L (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM M - CONVEYING EQUIPMENT**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>M</b>	<b><u>CONVEYING EQUIPMENT</u></b>					
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Elevator</u></b>					
1-1	Allow for supply and installation of elevator, testing and commissioning, in accordance with relevant Authority requirements and Client's requirements, complete, as per drawings and specification					
1-1-1	Passenger elevator	2	no.		Only..... ..... USD	
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>2</b>	<b><u>Elevator</u></b>					
2-1	Allow for supply and installation of elevator, testing and commissioning, in accordance with relevant Authority requirements and Client's requirements, complete, as per drawings and specification					
2-1-1	Passenger elevator	1	no.		Only..... ..... USD	
<b>TOTAL ITEM M (USD)</b>						

Only

USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM N - EXTERNAL WORKS AND LANDSCAPING**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for the design bid build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>N</b>	<b><u>EXTERNAL WORKS AND LANDSCAPING</u></b>					
<b>1</b>	<b><u>Soft Landscaping</u></b>					
1-1	Allow for supply and installation for Soft Landscaping including but not limited to trees, ground cover, shrubs, sweet soil, planting, soil additives, waterproofing, automatic irrigation, testing and commissioning., including extra soil to reach formation and levels, maintenance, complete as per drawings and specification					
1-1-1	Phoenix Dactylifera	62	no.		Only..... ..... USD	
1-1-2	Tabebuia Rosea	15	no.		Only..... ..... USD	
1-1-3	Paspalum Vaginatatum grass	279	m2		Only..... ..... USD	
<b>2</b>	<b><u>Pavement (Hard Landscaping)</u></b>					
2-1	<u>Pavement to walkways, complete, as per drawings and specification</u>					
2-1-1	Precast concrete interlock paving; thickness 60mm on and including 50mm thick sand bed, aggregate road base and sub-base	1,011	m2		Only..... ..... USD	
2-2	<u>Pavement to roadways, complete, as per drawings and specification</u>					
2-2-1	Supply and application of Bituminous Asphaltic concrete wearing course, binding course, including tack coat, prime coat, aggregate road base, sub-base and geotextile fabric	2,236	m2		Only..... ..... USD	
2-2-2	Painted precast concrete curbstones (100mm wide), complete including earthworks, concrete bed and backing, backfilling and transitions	135	m		Only..... ..... USD	
2-2-3	Painted precast concrete curbstones (150mm wide), complete including earthworks, concrete bed and backing, backfilling and transitions	594	m		Only..... ..... USD	
2-2-4	Painted precast concrete wheelstop, complete as per drawings & specification	15	no.		Only..... ..... USD	

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**ITEM N - EXTERNAL WORKS AND LANDSCAPING**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
2-3	<u>Surface Markings, complete, as per drawings and specification</u>					
2-3-1	Surface markings of road and parking including but not limited to continuous lines, intermittent lines, arrows, hatch markings, handicapped parking markings, parking bay numbering (all types)	1	LS		Only..... ..... USD	
TOTAL ITEM N (USD)						

Only.....  
..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**COLLECTION SHEET**

Item	SECTION	AMOUNT IN FIGURES USD	AMOUNT IN LETTERS USD
A	GENERAL REQUIREMENTS		Only..... ..... USD
B	SITE WORKS		Only..... ..... USD
C	CONCRETE		Only..... ..... USD
D	MASONRY		Only..... ..... USD
E	METALS WORKS		Only..... ..... USD
F	WOOD, PLASTICS AND COMPOSITES		Only..... ..... USD
G	THERMAL AND MOISTURE PROTECTION		Only..... ..... USD
H	OPENINGS		Only..... ..... USD
I	FINISHES		Only..... ..... USD
J	SPECIALTIES		Only..... ..... USD
K	EQUIPMENT		Only..... ..... USD
L	SPECIAL CONSTRUCTION		Only..... ..... USD
M	CONVEYING EQUIPMENT		Only..... ..... USD

**BILL I: ARCHITECTURAL WORK AND BILL II: CIVIL WORK**  
**COLLECTION SHEET**

Item	SECTION	AMOUNT IN FIGURES USD	AMOUNT IN LETTERS USD
N	EXTERNAL WORKS AND LANDSCAPING		Only..... ..... USD
	<u>TOTAL BILLS I &amp; II</u>		Only..... ..... USD
	<u>VAT</u>		Only..... ..... USD
	<u>GRAND TOTAL BILLS I &amp; II</u>		Only..... ..... USD

Only.....  
..... UNITED STATES DOLLARS



## **Bill of Quantities**

- **Bill III: Mechanical Works**

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
<u>The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for design and build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.</u>						
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>Detailed Design</u></b>					
1-1	Construction Drawings of detailed mechanical installation design for administration building					
1-1-1	Shop drawings	1	LS		Only..... ..... USD	
1-1-2	As built drawings	1	LS		Only..... ..... USD	
1-1-3	Site surveys reports	1	LS		Only..... ..... USD	
1-1-4	Coordination with relevant authorities for subscription and site setup for the connection to mechanical grid	1	LS		Only..... ..... USD	
1-1-5	Calculation Notes and simulation reports for equipment sizing	1	LS		Only..... ..... USD	
<b>2</b>	<b><u>Domestic Water</u></b>					
2-1	Cold water seamless galvanized steel to BS 1387 medium duty including pipe fittings,supports ,expansion joints,elbows, tees and accessories complete with trench excavation,sand material for pipe bedding and cover ,reinforced concrete encasement					
2-1-1	15 mm dn	35	m		Only..... ..... USD	
2-2	Pipes (Polypropylene PPR pipes for cold and hot water with aluminium rings including elbows ,tees and accessories.)					
2-2-1	20mm dn	180	m		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
2-2-2	25mm dn	350	m		Only..... ..... USD	
2-2-3	32mm dn	120	m		Only..... ..... USD	
2-2-4	40mm dn	150	m		Only..... ..... USD	
2-2-5	50mm dn	35	m		Only..... ..... USD	
2-2-6	63mm dn	30	m		Only..... ..... USD	
2-3	Valves(Bronze Gate Valves PN20 serving Polypropylene Pipes.)					
2-3-1	20mm dn	18	Nr		Only..... ..... USD	
2-3-2	25mm dn	55	Nr		Only..... ..... USD	
2-3-3	32mm dn	10	Nr		Only..... ..... USD	
2-3-4	40mm dn	10	Nr		Only..... ..... USD	
2-4	Insulation (Hot water pipes insulation; Fiber glass insulation 96 kg/m3 as per specification)					
2-4-1	20mm dn	100	m		Only..... ..... USD	
2-4-2	25mm dn	160	m		Only..... ..... USD	
2-5	Electric hot water					
2-5-1	Electric hot water heater type EWH-1, 100 liters storage	18	Nr		Only..... ..... USD	
2-5-2	Electric hot water heater type EWH-2, 300 liters storage	1	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
<b>3</b>	<b><u>Drainage</u></b>					
3-1	Supply and install plumbing fixtures including the necessary mixers, traps ,taps, covers, cisterns, flexible connections, control and isolation valves, assembly, connections to supply and waste pipework, sealant and all necessary fixing accessories; as specified and as shown on drawing					
3-1-1	Lavatory type Lav- 1	16	Nr		Only..... ..... USD	
3-1-2	Lavatory type Lav- 2 ,handicap	8	Nr		Only..... ..... USD	
3-1-3	European water closet floor mounted type EWC-1	13	Nr		Only..... ..... USD	
3-1-4	European water closet floor mounted type EWC-2 ,handicap	8	Nr		Only..... ..... USD	
3-1-5	Kitchen Sink	5	Nr		Only..... ..... USD	
3-1-6	Water Tap WT-15	4	Nr		Only..... ..... USD	
3-2	UPVC Pipes serving sewage, manholes, rain water and vent					
3-2-1	50 mm dn	90	m		Only..... ..... USD	
3-2-2	75 mm dn	220	m		Only..... ..... USD	
3-2-3	110 mm dn	100	m		Only..... ..... USD	
3-3	Pressure PVC Pipes, Serving Pit Pumps					
3-3-1	80 mm dn	90	m		Only..... ..... USD	
3-4	<b>SUNDRIES</b>					
3-4-1	Clean out - Type CO;25mm dn	25	Nr		Only..... ..... USD	
3-4-2	Clean out - Type CO;32mm dn	5	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
3-4-3	Clean out - Type CO;40mm dn	5	Nr		Only..... ..... USD	
3-4-4	Clean out - Type CO;50mm dn	5	Nr		Only..... ..... USD	
3-4-5	Clean out - Type CO;110mm dn	10	Nr		Only..... ..... USD	
3-4-6	Floor Clean out - Type FCO;110mm dn	25	Nr		Only..... ..... USD	
3-4-7	Floor drains - Type FD-1; 75mm	30	Nr		Only..... ..... USD	
3-4-8	Floor drains - Type AD-1; 100mm(Cast iron with bucket in parking area)	10	Nr		Only..... ..... USD	
3-4-9	Gutter drain, Type GD-1, 100 mm (cast iron gutter drain)	2	Nr		Only..... ..... USD	
3-4-10	Roof drain, Type RD-2, 110 mm (cast iron roof drain type side outlet)	10	Nr		Only..... ..... USD	
3-4-11	Roof vent cap - Type RVC; 110mm dn	5	Nr		Only..... ..... USD	
3-4-12	Concrete sum pits 1000*1000*1800 and cast iron cover	1	Nr		Only..... ..... USD	
3-4-13	Trench 300x200 with cast iron grating	13	m		Only..... ..... USD	
3-5	Submersible Sump Pump(Sets including automatic alternating, guides, supports, chains, valves, control panel assembly, wires and wiring, regulators, level signals, accessories, joints, connections, accessories, connection to pipe work and electrical power and control panel incuding driver;electrical connections to local outlet complete, as specified and as shown on drawing.)					
3-5-1	Submersible pumps type P1-AB-B1 (2.5LPS,8m WG),soft start,soft stop	2	Nr		Only..... ..... USD	
3-6	Pressure Pvc Pipes Serving Condensate Drain					
3-6-1	25 mm	350	m		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
3-6-2	32 mm	180	m		Only..... ..... USD	
3-6-3	40 mm	140	m		Only..... ..... USD	
3-6-4	50 mm	70	m		Only..... ..... USD	
3-7	Condensate Drain pipe insulation nitrile rubber foam 13 mm Thick					
3-7-1	25 mm	350	m		Only..... ..... USD	
3-7-2	32 mm	180	m		Only..... ..... USD	
3-7-3	40 mm	140	m		Only..... ..... USD	
3-7-4	50 mm	70	m		Only..... ..... USD	
<b>4</b>	<b><u>Fire Fighting</u></b>					
4-1	<b>FIRE EXTINGUISHERS</b>					
4-1-1	Fire Extinguishers Type FE-1; 5 Kg ABC nitrogen operated dry chemical type complete including, mounting hardware, etc; complete as specified	10	Nr		Only..... ..... USD	
4-1-2	Fire Extinguishers Type FE-2; 2.5 Kg Carbon dioxide fire extinguisher complete including, mounting hardware, etc; complete as specified	10	Nr		Only..... ..... USD	
4-2	Fire Hose Cabinet Fire Hose Cabinet including painting, connection to pipe work, signage, ironmongery, mounting hardware, complete; as specified, as shown on drawings.					
4-2-1	Fire Hose Cabinet type FHC-1 Exposed Type.	10	Nr		Only..... ..... USD	
4-3	Pipes(seamless black steel pipes schedule 40 pipe work distribution network including all fittings, spouts, joints, connections, hangers, supports, clips, anchors and like complete as specified.)					
4-3-1	40mm dn	160	m		Only..... ..... USD	
4-3-2	65mm dn	45	m		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
4-3-3	100mm dn	45	m		Only..... ..... USD	
4-4	Automatic air vent 20 mm and pressure gauge	2	Nr		Only..... ..... USD	
<b>5</b>	<b><u>HVAC</u></b>					
5-1	Power Ventilators(Belt or direct driven,fire rated 400 degree celsius at 2 hours for all fans located in parking serving smoke exhaust, statically and dynamically balance,in-line fan units in heavy gauge steel housing,complete with back draft dampers for exhaust fan,inlet/outlet screens,associated controls and accessories,electrical connections to local outlets and all necessary accessories;as specified and as shown on drawings)					
5-1-1	EF1-AB-B1 (3280 LPS, 180Pa)	1	Nr		Only..... ..... USD	
5-1-2	EF2-AB-B1 (3280 LPS, 180Pa)	1	Nr		Only..... ..... USD	
5-2	Power Ventilators(Belt or direct driven, serving WC exhaust and fresh air for FCU, statically and dynamically balance,in-line fan units in heavy gauge steel housing,complete with back draft dampers for exhaust fan,and with 50 mm aluminium filter (EU-2) for supply fan,inlet/outlet screens,associated controls and accessories,electrical connections to local outlets and all necessary accessories;as specified and as shown on drawings)					
5-2-1	EF3-AB-GF (50 LPS, 130Pa)	1	Nr		Only..... ..... USD	
5-2-2	EF4-AB-R (400 LPS, 130Pa)	1	Nr		Only..... ..... USD	
5-2-3	EF5-AB-R (300 LPS, 130Pa)	1	Nr		Only..... ..... USD	
5-2-4	EF6-AB-R (450 LPS, 130Pa)	1	Nr		Only..... ..... USD	
5-2-5	EF7-AB-R (220 LPS, 130Pa)	1	Nr		Only..... ..... USD	
5-2-6	F1-AB-GF (330 LPS, 150Pa)	1	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-2-7	F2-AB-GF (520 LPS, 150Pa)	1	Nr		Only..... ..... USD	
5-2-8	F3-AB-F1 (250 LPS, 150Pa)	1	Nr		Only..... ..... USD	
5-2-9	F4-AB-F1 (320 LPS, 150Pa)	1	Nr		Only..... ..... USD	
5-2-10	F5-AB-F2 (250 LPS, 150Pa)	1	Nr		Only..... ..... USD	
5-2-11	F6-AB-F2 (280 LPS, 150Pa)	1	Nr		Only..... ..... USD	
5-2-12	F7-AB-F3 (260 LPS,150Pa)	1	Nr		Only..... ..... USD	
5-2-13	F8-AB-F3 (350 LPS, 150Pa)	1	Nr		Only..... ..... USD	
5-3	Outdoor VRF Units HEAT Pumps (3 PIPES) Shall be installed complete as per specifications including,insulation and refrigerant charging of Copper pipes as shown in drawings, pad, electrical wirings, thermostats and controls.					
5-3-1	VRF 1-AB-R (net cooling capacity 32 kw,net heating capacity 15 kw)	1	Nr		Only..... ..... USD	
5-3-2	VRF 2-AB-R (net cooling capacity 34 kw,net heating capacity 16 kw)	1	Nr		Only..... ..... USD	
5-3-3	VRF 3-AB-R (net cooling capacity 42 kw,net heating capacity 19kw)	1	Nr		Only..... ..... USD	
5-3-4	VRF 4-AB-R (net cooling capacity 84 kw,net heating capacity 40 kw)	1	Nr		Only..... ..... USD	
5-3-5	VRF 5-AB-R (net cooling capacity 82 kw,net heating capacity 39 kw)	1	Nr		Only..... ..... USD	
5-3-6	VRF 6-AB-R (net cooling capacity 90 kw,net heating capacity 41 kw)	1	Nr		Only..... ..... USD	



<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-4	Fan Coil Units (3 pipes) (Indoor Ducted Unit: Ceiling Concealed Type) Shall be installed complete as per specifications including, insulation and refrigerant charging of Copper pipes as shown in drawings, pad, electrical wirings, modulating valves, valves, strainers, automatic air vents, electric heater, thermostats and controls.					
5-4-1	FCU 1-AB-GF(9.7 KW Total cooling capacity, 2.7 KW Total heating capacity)	3	Nr		Only..... ..... USD	
5-4-2	FCU 2-AB-GF(2.8 KW Total cooling capacity, 1.3 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-3	FCU 3-AB-GF(2.6 KW Total cooling capacity, 1.3 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-4	FCU 4-AB-GF(0.8 KW Total cooling capacity, 0.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-5	FCU 5-AB-GF(1.5 KW Total cooling capacity, 1.1 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-6	FCU 6-AB-GF(4 KW Total cooling capacity, 2.4 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-7	FCU 7-AB-GF(5.9 KW Total cooling capacity, 1.7 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-8	FCU 8-AB-GF(5.9 KW Total cooling capacity, 2.1 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-9	FCU 9-AB-GF(6.9 KW Total cooling capacity, 2.4 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-10	FCU 10-AB-GF(4.8 KW Total cooling capacity, 1.8 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-11	FCU 11-AB-GF(6.5 KW Total cooling capacity, 2.7 KW Total heating capacity)	5	Nr		Only..... ..... USD	
5-4-12	FCU 12-AB-GF(1.3 KW Total cooling capacity, 0.8 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-13	FCU 13-AB-GF(2.8 KW Total cooling capacity, 1.3 KW Total heating capacity)	1	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-4-14	FCU 14-AB-F1(5 KW Total cooling capacity, 1.7 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-15	FCU 15-AB-F1(2.2 KW Total cooling capacity, 1.1 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-16	FCU 16-AB-F1(2.2 KW Total cooling capacity, 0.9 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-17	FCU 17-AB-F1(2.5 KW Total cooling capacity, 1.3 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-18	FCU 18-AB-F1(5.6 KW Total cooling capacity, 2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-19	FCU 19-AB-F1(1.3 KW Total cooling capacity, 0.7 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-20	FCU 20-AB-F1(3 KW Total cooling capacity, 1.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-21	FCU 21-AB-F1(4.6 KW Total cooling capacity, 1.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-22	FCU 22-AB-F1(3.6 KW Total cooling capacity, 1.3 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-23	FCU 23-AB-F1(4.5 KW Total cooling capacity, 2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-24	FCU 24-AB-F1(5 KW Total cooling capacity, 1.7 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-25	FCU 25-AB-F1(3.3 KW Total cooling capacity, 1.2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-26	FCU 26-AB-F1(3.6 KW Total cooling capacity, 1.2 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-27	FCU 27-AB-F1(5.1 KW Total cooling capacity, 2 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-28	FCU 28-AB-F1(2.6 KW Total cooling capacity, 1.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-29	FCU 29-AB-F1(2.8 KW Total cooling capacity, 1.2 KW Total heating capacity)	2	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-4-30	FCU 30-AB-F1(4.9 KW Total cooling capacity, 1.2 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-31	FCU 31-AB-F2(5 KW Total cooling capacity, 1.8 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-32	FCU 32-AB-F2(2.3 KW Total cooling capacity, 1.2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-33	FCU 33-AB-F2(2.2 KW Total cooling capacity, 1.1 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-34	FCU 34-AB-F2(2.5 KW Total cooling capacity, 1.3 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-35	FCU 35-AB-F2(5.6 KW Total cooling capacity, 2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-36	FCU 36-AB-F2(1.3 KW Total cooling capacity, 0.8 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-37	FCU 37-AB-F2(3 KW Total cooling capacity, 1.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-38	FCU 38-AB-F2(4.6 KW Total cooling capacity, 1.5 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-39	FCU 39-AB-F2(3.9 KW Total cooling capacity, 1.9 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-40	FCU 40-AB-F2(4.5 KW Total cooling capacity, 2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-41	FCU 41-AB-F2(5 KW Total cooling capacity, 1.7 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-42	FCU 42-AB-F2(3.6 KW Total cooling capacity, 1.2 KW Total heating capacity)	3	Nr		Only..... ..... USD	
5-4-43	FCU 43-AB-F2(2.6 KW Total cooling capacity, 1.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-44	FCU 44-AB-F2(3.5 KW Total cooling capacity, 1.5 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-45	FCU 45-AB-F2(2.9 KW Total cooling capacity, 1.3 KW Total heating capacity)	2	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-4-46	FCU 46-AB-F2(5 KW Total cooling capacity, 1.9 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-47	FCU 47-AB-F3(5.5 KW Total cooling capacity, 2.2 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-48	FCU 48-AB-F3(2.4 KW Total cooling capacity, 1.2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-49	FCU 49-AB-F3(2.2 KW Total cooling capacity, 1.2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-50	FCU 50-AB-F3(2.8 KW Total cooling capacity, 1.5 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-51	FCU 51-AB-F3(1.5 KW Total cooling capacity, 1 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-52	FCU 52-AB-F3(5.5 KW Total cooling capacity, 2.2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-53	FCU 53-AB-F3(2.2 KW Total cooling capacity, 0.9 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-54	FCU 54-AB-F3(4.7 KW Total cooling capacity, 1.9 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-55	FCU 55-AB-F3(3.6 KW Total cooling capacity, 1.4 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-56	FCU 56-AB-F3(4 KW Total cooling capacity, 2.4 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-57	FCU 57-AB-F3(5.2 KW Total cooling capacity, 1.8 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-58	FCU 58-AB-F3(3.6 KW Total cooling capacity, 1.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-59	FCU 59-AB-F3(3.8 KW Total cooling capacity, 1.6 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-60	FCU 60-AB-F3(2.8 KW Total cooling capacity, 1.8 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-4-61	FCU 61-AB-F3(3.3 KW Total cooling capacity, 2 KW Total heating capacity)	1	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-4-62	FCU 62-AB-F3(5.1 KW Total cooling capacity, 2.3 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-63	FCU 63-AB-F3(3.2 KW Total cooling capacity, 1.6 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4-64	FCU 64-AB-F3(5.2 KW Total cooling capacity, 2 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-5	Copper pipes between all VRF (outdoor units) and FCU(indoor units)	2,300	m		Only..... ..... USD	
5-6	Duct Work and Duct work Accessories(Galvanized steel sheet metal ductwork including all splitters, air deflectors, hangers, supports, joints, access doors, sealants, duct connections, sleeves, frames,c ollars, fittings, controls and accessories; all gauges;square or rectangular section; fixing to concrete soffits and the like, complete; as specified and as shown on drawings. )					
5-6-1	Galvanized steel ducts G90 incl. support and accessories.	7,000	kg		Only..... ..... USD	
5-6-2	Thermal duct insulation 24 kg/m3 flexible fiber glass, area measured by multiplying ducts perimeter by centerline length.	600	m2		Only..... ..... USD	
5-7	Volume Dampers Type VD	130	Nr		Only..... ..... USD	
5-8	Fire Dampers Type FD	35	Nr		Only..... ..... USD	
5-9	Air Outlets and Inlets Shall be installed complete as per specifications and drawings .					
5-9-1	Exhaust Register Type ER 400X300 in mm (DOUBLE DEFLECTION)	34	Nr		Only..... ..... USD	
5-9-2	Exhaust Register Type ER 200X200 in mm (DOUBLE DEFLECTION)	26	Nr		Only..... ..... USD	
5-9-3	Supply Ceiling Diffuser Type SCD 300X300 in mm	140	Nr		Only..... ..... USD	
5-9-4	Return Ceiling Diffuser Type RCD 300X300 in mm	140	Nr		Only..... ..... USD	

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<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-9-5	Return Registers TYPE RR	90	Nr		Only..... ..... USD	
5-9-6	Fresh air louver F A L 1000X300 in mm	8	Nr		Only..... ..... USD	
5-9-7	Exhaust air louver E A L 200X150 in mm	1	Nr		Only..... ..... USD	
5-9-8	Door Grill DG 500X250 in mm	21	Nr		Only..... ..... USD	
		<b>SUB-TOTAL ITEM I (USD)</b>				

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>1</b>	<b><u>Detailed Design</u></b>					
1-1	Construction Drawings of detailed mechanical installation design for office building					
1-1-1	Shop drawings	1	LS		Only..... USD	
1-1-2	As built drawings	1	LS		Only..... USD	
1-1-3	Site surveys reports	1	LS		Only..... USD	
1-1-4	Coordination with relevant authorities for subscription and site setup for the connection to mechanical grid	1	LS		Only..... USD	
1-1-5	Calculation Notes and simulation reports for equipment sizing	1	LS		Only..... USD	
<b>2</b>	<b><u>Domestic Water</u></b>					
2-1	Pipes (Polypropylene PPR pipes for cold and hot water with aluminium rings including elbows ,tees and accessories.)					
2-1-1	20mm dn	80	m		Only..... USD	
2-1-2	25mm dn	120	m		Only..... USD	
2-1-3	32mm dn	40	m		Only..... USD	
2-1-4	40mm dn	50	m		Only..... USD	
2-2	Valves(Bronze Gate Valves PN20 serving Polypropylene Pipes.)					
2-2-1	20mm dn	6	Nr		Only..... USD	
2-2-2	25mm dn	18	Nr		Only..... USD	
2-2-3	32mm dn	6	Nr		Only..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
2-2-4	40mm dn	3	Nr		Only..... ..... USD	
2-3	Insulation (Hot water pipes insulation; Fiber glass insulation 96 kg/m3 as per specification)					
2-3-1	20mm dn	35	m		Only..... ..... USD	
2-3-2	25mm dn	40	m		Only..... ..... USD	
2-4	Electric hot water heater type EWH-1, 100 liters storage	3	Nr		Only..... ..... USD	
<b>3</b>	<b>Drainage</b>					
3-1	Supply and install plumbing fixtures including the necessary mixers, traps, taps, covers, cisterns, flexible connections, control and isolation valves, assembly, connections to supply and waste pipework, sealant and all necessary fixing accessories; as specified and as shown on drawing					
3-1-1	Lavatory type Lav- 1	7	Nr		Only..... ..... USD	
3-1-2	European water closet floor mounted type EWC-1	7	Nr		Only..... ..... USD	
3-1-3	Kitchen Sink	1	Nr		Only..... ..... USD	
3-1-4	Water Tap WT-20	1	Nr		Only..... ..... USD	
3-2	UPVC Pipes serving sewage, manholes, rain water and vent					
3-2-1	50 mm dn	40	m		Only..... ..... USD	
3-2-2	75 mm dn	100	m		Only..... ..... USD	



<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
3-2-3	110 mm dn	120	m		Only..... ..... USD	
3-3	SUNDRIES					
3-3-1	Clean out - Type CO;25mm dn	6	Nr		Only..... ..... USD	
3-3-2	Clean out - Type CO;40mm dn	4	Nr		Only..... ..... USD	
3-3-3	Clean out - Type CO;50mm dn	4	Nr		Only..... ..... USD	
3-3-4	Floor Clean out - Type FCO;110mm dn	10	Nr		Only..... ..... USD	
3-3-5	Floor drains - Type FD-1; 75mm	10	Nr		Only..... ..... USD	
3-3-6	Roof drain, Type RD-2, 110 mm (cast iron roof drain type side outlet)	5	Nr		Only..... ..... USD	
3-3-7	Roof vent cap - Type RVC; 110mm dn	1	Nr		Only..... ..... USD	
3-4	Pressure Pvc Pipes Serving Condensate Drain					
3-4-1	25 mm	110	m		Only..... ..... USD	
3-4-2	32 mm	70	m		Only..... ..... USD	
3-4-3	40 mm	70	m		Only..... ..... USD	
3-4-4	50 mm	65	m		Only..... ..... USD	
3-5	Condensate Drain pipe insulation nitrile rubber foam 13 mm Thick					
3-5-1	25 mm	110	m		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
3-5-2	32 mm	70	m		Only..... ..... USD	
3-5-3	40 mm	70	m		Only..... ..... USD	
3-5-4	50 mm	65	m		Only..... ..... USD	
<b>4</b>	<b><u>Fire Fighting</u></b>					
4-1	<b>FIRE EXTINGUISHERS</b>					
4-1-1	Fire Extinguishers Type FE-1; 5 Kg ABC nitrogen operated dry chemical type complete including, mounting hardware, etc; complete as specified	7	Nr		Only..... ..... USD	
4-1-2	Fire Extinguishers Type FE-2; 2.5 Kg Carbon dioxide fire extinguisher complete including, mounting hardware, etc; complete as specified	4	Nr		Only..... ..... USD	
4-2	Fire Hose Cabinet Fire Hose Cabinet including painting, connection to pipe work, signage, ironmongery, mounting hardware, complete; as specified, as shown on drawings.					
4-2-1	Fire Hose Cabinet type FHC-1 Exposed Type.	3	Nr		Only..... ..... USD	
4-3	Pipes(seamless black steel pipes schedule 40 pipe work distribution network including all fittings, spouts, joints, connections, hangers, supports, clips, anchors and like complete as specified.)					
4-3-1	40mm dn	70	m		Only..... ..... USD	
4-3-2	65mm dn	35	m		Only..... ..... USD	
4-4	Automatic air vent 20 mm and pressure gauge	1	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
<b>5</b>	<b>HVAC</b>					
5-1	Power Ventilators(Belt or direct driven, serving WC exhaust and fresh air for FCU, statically and dynamically balance,in-line fan units in heavy gauge steel housing,complete with back draft dampers for exhaust fan,and with 50 mm aluminium filter (EU-2) for supply fan,inlet/outlet screens,associated controls and accessories,electrical connections to local outlets and all necessary accessories;as specified and as shown on drawings)					
5-1-1	EF7-OB-R (450 LPS, 130 Pa)	1	Nr		Only..... ..... USD	
5-1-2	F9-OB-GF (200 LPS, 150 Pa)	1	Nr		Only..... ..... USD	
5-1-3	F10-OB-F1 (203 LPS, 150 Pa)	1	Nr		Only..... ..... USD	
5-1-4	F11-OB-F2 (203 LPS, 150 Pa)	1	Nr		Only..... ..... USD	
5-2	Outdoor VRF Units HEAT Pumps (3 PIPES) Shall be installed complete as per specifications including,insulation and refrigerant charging of Copper pipes as shown in drawings, pad, electrical wirings, thermostats and controls.					
5-2-1	VRF 1-OB-R (net cooling capacity 32 kw,net heating capacity 15 kw)	1	Nr		Only..... ..... USD	
5-2-2	VRF 2-OB-R (net cooling capacity 30 kw,net heating capacity 14 kw)	1	Nr		Only..... ..... USD	
5-2-3	VRF 3-OB-R (net cooling capacity 30 kw,net heating capacity 14 kw)	1	Nr		Only..... ..... USD	

<b>BILL III: MECHANICAL WORK</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-3	Fan Coil Units (3 pipes) (Indoor Ducted Unit: Ceiling Concealed Type) Shall be installed complete as per specifications including, insulation and refrigerant charging of Copper pipes as shown in drawings, pad, electrical wirings, modulating valves, valves, strainers, automatic air vents, electric heater, thermostats and controls.					
5-3-1	FCU 1-OB-GF(4.9 KW Total cooling capacity, 1.6 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-3-2	FCU 2-OB-GF(3.9 KW Total cooling capacity, 1.2 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-3-3	FCU 3-OB-GF(3.1KW Total cooling capacity, 1.1 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-3-4	FCU 4-OB-GF(1 KW Total cooling capacity, 0.6 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-3-5	FCU 5-OB-GF(3.3 KW Total cooling capacity, 1.4 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-3-6	FCU 6-OB-GF(0.8 KW Total cooling capacity, 0.5 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-3-7	FCU 7-OB-GF(1.6 KW Total cooling capacity, 0.8 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-3-8	FCU 8-OB-GF(1.3 KW Total cooling capacity, 0.7 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-3-9	FCU 9-OB-GF(3 KW Total cooling capacity, 1.4 KW Total heating capacity)	1	Nr		Only..... ..... USD	
5-3-10	FCU 10-OB-F1(1.5 KW Total cooling capacity, 0.7 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-3-11	FCU 11-OB-F1(2 KW Total cooling capacity, 0.7 KW Total heating capacity)	4	Nr		Only..... ..... USD	
5-3-12	FCU 12-OB-F1(3.9 KW Total cooling capacity, 1.3 KW Total heating capacity)	4	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-3-13	FCU 13-OB-F1(2.5 KW Total cooling capacity, 0.8 KW Total heating capacity)	4	Nr		Only..... ..... USD	
5-3-14	FCU 14-OB-F1(3.4 KW Total cooling capacity, 1.4 KW Total heating capacity)	4	Nr		Only..... ..... USD	
5-3-15	FCU 15-OB-F1(0.8 KW Total cooling capacity, 0.5 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-3-16	FCU 16-OB-F1(0.7 KW Total cooling capacity, 0.5 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-3-17	FCU 17-OB-F1(3.1 KW Total cooling capacity, 1.5 KW Total heating capacity)	2	Nr		Only..... ..... USD	
5-4	Copper pipes between all VRF (outdoor units) and FCU(indoor units)	750	m		Only..... ..... USD	
5-5	Duct Work and Duct work Accessories(Galvanized steel sheet metal ductwork including all splitters, air deflectors, hangers, supports, joints, access doors, sealants, duct connections, sleeves, frames,c ollars, fittings, controls and accessories; all gauges;square or rectangular section; fixing to concrete soffits and the like, complete; as specified and as shown on drawings. )					
5-5-1	Galvanized steel ducts G90 incl. support and accessories.	2,000	kg		Only..... ..... USD	
5-5-2	Thermal duct insulation 24 kg/m3 flexible fiber glass, area measured by multiplying ducts perimeter by centerline length.	250	m2		Only..... ..... USD	
5-6	Volume Dampers Type VD	45	Nr		Only..... ..... USD	
5-7	Fire Dampers Type FD	3	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-8	Air Outlets and Inlets Shall be installed complete as per specifications and drawings .					
5-8-1	Exhaust Register Type ER 200X200 in mm (DOUBLE DEFLECTION)	9	Nr		Only..... ..... USD	
5-8-2	Supply Ceiling Diffuser Type SCD 300X300 in mm	52	Nr		Only..... ..... USD	
5-8-3	Return Ceiling Diffuser Type RCD 300X300 in mm	52	Nr		Only..... ..... USD	
5-8-4	Return Registers TYPE RR	40	Nr		Only..... ..... USD	
5-8-5	Fresh air louver F A L 500X300 in mm	3	Nr		Only..... ..... USD	
5-8-6	Door Grill DG 500X250 in mm	7	Nr		Only..... ..... USD	
		<b>SUB-TOTAL ITEM II (USD)</b>				

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
<b>III</b>	<b><u>SERVICE BLOCK</u></b>					
<b>1</b>	<b><u>Detailed Design</u></b>					
1-1	Construction Drawings of detailed mechanical installation design for service block					
1-1-1	Shop drawings	1	LS		Only..... ..... USD	
1-1-2	As built drawings	1	LS		Only..... ..... USD	
1-1-3	Site surveys reports	1	LS		Only..... ..... USD	
1-1-4	Coordination with relevant authorities for subscription and site setup for the connection to mechanical grid	1	LS		Only..... ..... USD	
1-1-5	Calculation Notes and simulation reports for equipment sizing	1	LS		Only..... ..... USD	
<b>2</b>	<b><u>Domestic Water</u></b>					
2-1	Cold water seamless galvanized steel to BS 1387 medium duty including pipe fittings,supports ,expansion joints,elbows, tees and accessories.					
2-1-1	25mm dn	30	m		Only..... ..... USD	
2-1-2	32mm dn	20	m		Only..... ..... USD	
2-1-3	40mm dn	20	m		Only..... ..... USD	
2-1-4	63mm dn	40	m		Only..... ..... USD	
<b>2-2</b>	<b><u>Valves</u></b>					
2-2-1	Float Valve 32 mm dn	3	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
2-2-2	Cast iron gate Valve PN 16 32 mm dn	3	Nr		Only..... ..... USD	
2-2-3	Cast iron gate Valve PN 16 50 mm dn	2	Nr		Only..... ..... USD	
2-3	TANK:Allow for connections to concrete domestic water tank including fittings, accessories, isolating valves, float valves, over flow, drain, vent, puddle flange, sleeves, level switches, louvers, gates, cover; complete as specified and as shown on drawings.	1	LS		Only..... ..... USD	
2-4	Water pumps(Packaged booster set factory assembled complete with all necessary supports, controls, gauges, flexible connections, casings, valves, accessories, pressure vessels, joints, connections to cold water supply / discharge pipework and electrical power and control panel including driver, wires and wiring, anti vibration control, electrical connections to local outletsetc complete; as per miscellaneous details and specification, Including floater control of water level in tanks)					
2-4-1	Booster pump Type P3-SB-B1,variable speed drive (3 LPS flow, 50 mWG head)	3	Nr		Only..... ..... USD	
<b>3</b>	<b><u>Drainage</u></b>					
3-1	UPVC Pipes serving sewage, manholes, rain water					
3-1-1	110 mm dn	50	m		Only..... ..... USD	
3-2	Pressure PVC Pipes, Serving Pit Pumps					
3-2-1	80 mm dn	25	m		Only..... ..... USD	
3-3	Sundries					
3-3-1	Gutter drain, Type GD-1, 100 mm (cast iron gutter drain)	1	Nr		Only..... ..... USD	
3-3-2	Roof drain, Type RD-2, 110 mm (cast iron roof drain type side outlet)	5	Nr		Only..... ..... USD	
3-3-3	Concrete sum pits 1000*1000*1000 and cast iron cover	1	Nr		Only..... ..... USD	



<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
3-3-4	Trench 300x200 with cast iron grating	10	m		Only..... ..... USD	
3-4	Submersible Sump Pump(Sets including automatic alternating, guides, supports, chains, valves, control panel assembly, wires and wiring, regulators, level signals, accessories, joints, connections, accessories, connection to pipe work and electrical power and control panel incuding driver;electrical connections to local outlet complete, as specified and as shown on drawing.)					
3-4-1	Submersible pumps type P2-SB-B1 (1LPS,5m WG),soft start,soft stop	2	Nr		Only..... ..... USD	
<b>4</b>	<b>Fire Fighting</b>					
4-1	Fire Extinguishers					
4-1-1	Fire Extinguishers Type FE-1; 5 Kg ABC nitrogen operated dry chemical type complete including, mounting hardware, etc; complete as specified	4	Nr		Only..... ..... USD	
4-1-2	Fire Extinguishers Type FE-2; 2.5 Kg Carbon dioxide fire extinguisher complete including, mounting hardware, etc; complete as specified	4	Nr		Only..... ..... USD	
4-2	Pipes(seamless black steel pipes schedule 40 pipe work distribution network including all fittings, spouts, joints, connections, hangers, supports, clips, anchors and like complete as specified.)					
4-2-1	100mm dn	35	m		Only..... ..... USD	
4-3	FIRE GATE VALVES O & S U.L. LISTED					
4-3-1	100mm dn	1	Nr		Only..... ..... USD	
4-4	CHECK VALVE					
4-4-1	100mm dn	1	Nr		Only..... ..... USD	
4-5	VALVE ASSEMBLY					
4-5-1	100mm dn	1	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
4-6	CHECK VALVE					
4-6-1	100mm dn	1	Nr		Only..... ..... USD	
4-7	VALVE ASSEMBLY					
4-7-1	100mm dn	1	Nr		Only..... ..... USD	
4-8	Pressure Reducing valve 100 mm from 12 bars to 7 bars with stainer,3 gate valves,by bass lines and 2 pressure gauges	1	Nr		Only..... ..... USD	
4-9	Test and Drain Valve	1	Nr		Only..... ..... USD	
4-10	Pressure Reducing valve 100 mm from 12 bars to 7 bars with stainer,3 gate valves,by bass lines and 2 pressure gauges	1	Nr		Only..... ..... USD	
4-11	Test and Drain Valve	1	Nr		Only..... ..... USD	
4-12	Fire pump sets including supports, valves, controller, anti vibration control, wires and wiring; joints, connections, accessories, electrical power and control panel incuding driver, connections to suction and discharge pipe work and electrical connections to local outlets, etc.. complete; as specified and as shown on drawings.					
4-12-1	Fire pump set Type P4-SB-B1, (set of 2 pumps each one have 6.3 LPS flow, and 60 mWG head)	1	Nr		Only..... ..... USD	
<b>5</b>	<b>HVAC</b>					
5-1	Power Ventilators(Belt or direct driven, serving pump room exhaust, statically and dynamically balance,in-line fan units in heavy gauge steel housing,,associated controls and accessories,electrical connections to local outlets and all necessary accessories;as specified and as shown on drawings)					
5-1-1	EF10-SB-B1 (225 LPS, 130 Pa)	1	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-2	Duct Work and Duct work Accessories(Galvanized steel sheet metal ductwork including all splitters, air deflectors, hangers, supports, joints, access doors, sealants, duct connections, sleeves, frames,c ollars, fittings, controls and accessories; all gauges;square or rectangular section; fixing to concrete soffits and the like, complete; as specified and as shown on drawings. )					
5-2-1	Galvanized steel ducts G90 incl. support and accessories.	200	kg		Only..... ..... USD	
5-3	Volume Dampers Type VD	1	Nr		Only..... ..... USD	
5-4	Fire Dampers Type FD	1	Nr		Only..... ..... USD	
5-5	Air Outlets and Inlets Shall be installed complete as per specifications and drawings .					
5-5-1	Exhaust Register Type ER 400X300 in mm (DOUBLE DEFLECTION)	1	Nr		Only..... ..... USD	
		<b>SUB-TOTAL ITEM III (USD)</b>				

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
<b>IV</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>1</b>	<b><u>Detailed Design</u></b>					
1-1	Construction Drawings of detailed mechanical installation design for workshop building					
1-1-1	Shop drawings	1	LS		Only..... USD	
1-1-2	As built drawings	1	LS		Only..... USD	
1-1-3	Site surveys reports	1	LS		Only..... USD	
1-1-4	Coordination with relevant authorities for subscription and site setup for the connection to mechanical grid	1	LS		Only..... USD	
1-1-5	Calculation Notes and simulation reports for equipment sizing	1	LS		Only..... USD	
<b>2</b>	<b><u>Domestic Water</u></b>					
2-1	Pipes (Polypropylene PPR pipes for cold and hot water with aluminium rings including elbows ,tees and accessories.)					
2-1-1	20mm dn	80	m		Only..... USD	
2-1-2	25mm dn	70	m		Only..... USD	
2-1-3	32mm dn	40	m		Only..... USD	
2-2	Valves(Bronze Gate Valves PN20 serving Polypropylene Pipes.)					
2-2-1	25mm dn	5	Nr		Only..... USD	
2-2-2	32mm dn	5	Nr		Only..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
2-3	Insulation (Hot water pipes insulation; Fiber glass insulation 96 kg/m3 as per specification)					
2-3-1	20mm dn	40	m		Only..... USD	
2-3-2	25mm dn	35	m		Only..... USD	
2-3-3	32mm dn	10	m		Only..... USD	
2-4	Electric hot water heater type EWH-1, 100 liters storage	2	Nr		Only..... USD	
<b>3</b>	<b><u>Drainage</u></b>					
3-1	Supply and install plumbing fixtures including the necessary mixers, traps, taps, covers, cisterns, flexible connections, control and isolation valves, assembly, connections to supply and waste pipework, sealant and all necessary fixing accessories; as specified and as shown on drawing					
3-1-1	Lavatory type Lav- 1	4	Nr		Only..... USD	
3-1-2	European water closet floor mounted type EWC-1	2	Nr		Only..... USD	
3-1-3	Shower	4	Nr		Only..... USD	
3-1-4	Shower Head	2	Nr		Only..... USD	
3-2	UPVC Pipes serving sewage, manholes, rain water and vent					
3-2-1	50 mm dn	30	m		Only..... USD	
3-2-2	75 mm dn	70	m		Only..... USD	
3-2-3	110 mm dn	110	m		Only..... USD	
3-3	<b>SUNDRIES</b>					
3-3-1	Floor Clean out - Type FCO;110mm dn	3	Nr		Only..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
3-3-2	Floor drains - Type FD-1; 75mm	10	Nr		Only..... USD	
3-3-3	Roof drain, Type RD-2, 110 mm (cast iron roof drain type side outlet)	5	Nr		Only..... USD	
3-3-4	Roof vent cap - Type RVC; 110mm dn	2	Nr		Only..... USD	
3-4	Pressure Pvc Pipes Serving Condensate Drain					
3-4-1	25 mm	150	m		Only..... USD	
3-4-2	32 mm	40	m		Only..... USD	
3-4-3	40 mm	30	m		Only..... USD	
3-5	Condensate Drain pipe insulation nitrile rubber foam 13 mm Thick					
3-5-1	25 mm	150	m		Only..... USD	
3-5-2	32 mm	40	m		Only..... USD	
3-5-3	40 mm	30	m		Only..... USD	
<b>4</b>	<b><u>Fire Fighting</u></b>					
4-1	FIRE EXTINGUISHERS					
4-1-1	Fire Extinguishers Type FE-1; 5 Kg ABC nitrogen operated dry chemical type complete including, mounting hardware, etc; complete as specified	2	Nr		Only..... USD	
4-2	Fire Hose Cabinet Fire Hose Cabinet including painting, connection to pipe work, signage,					
4-2-1	Fire Hose Cabinet type FHC-1 Exposed Type.	4	Nr		Only..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
4-3	Pipes(seamless black steel pipes schedule 40 pipe work distribution network including all fittings, spouts, joints, connections, hangers, supports, clips, anchors and like complete as specified.)					
4-3-1	40mm dn	25	m		Only..... ..... USD	
4-3-2	100mm dn	10	m		Only..... ..... USD	
4-4	Automatic air vent 20 mm and pressure gauge	2	Nr		Only..... ..... USD	
<b>5</b>	<b><u>HVAC</u></b>					
5-1	Power Ventilators(Belt or direct driven, serving WC exhaust , statically and dynamically balance,in-line fan units in heavy gauge steel housing,complete with back draft dampers for exhaust fan,/outlet screens,associated controls and accessories,electrical connections to local outlets and all necessary accessories;as specified and as shown on drawings)					
5-1-1	EF8-WB-GF (50 LPS, 70 Pa)	1	Nr		Only..... ..... USD	
5-1-2	EF9-WB-GF (50 LPS, 70 Pa)	1	Nr		Only..... ..... USD	
5-2	Outdoor VRF Units HEAT PumpsS (3 PIPES) Shall be installed complete as per specifications including,insulation and refrigerant charging of Copper pipes as shown in drawings, pad, electrical wirings, thermostats and controls.					
5-2-1	VRF 1-WB-R (net cooling capacity 50 kw, net heating capacity 23 kw )	1	Nr		Only..... ..... USD	
5-2-2	VRF 2-WB-R (net cooling capacity 50 kw, net heating capacity 23 kw )	1	Nr		Only..... ..... USD	
5-3	Split heat pump air conditioner Unit (3 pipes) (Indoor DX Unit) Shall be installed complete as per specifications including, insulation and refrigerant charging of Copper pipes as shown in drawings,pad, electrical wirings, modulating valves, valves, strainers, automatic air vents, electric heater,thermostats and controls.					
5-3-1	EB-TYP-01(total cooling load 3.6 kw, heating load on coil 1.8 kw )	4	Nr		Only..... ..... USD	

<b>BILL III: MECHA</b>						
<b>ITEM No.</b>	<b>ITEM DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT</b>	<b>UNIT RATE IN FIGURES USD</b>	<b>UNIT RATE IN LETTERS USD</b>	<b>AMOUNT USD</b>
5-3-2	EB-TYP-02(total cooling load 5.2 kw, heating load on coil 2.3 kw )	16	Nr		Only..... ..... USD	
5-4	Copper pipes between all VRF (outdoor units) and DX Units(indoor units)	400	m		Only..... ..... USD	
5-5	Duct Work and Duct work Accessories(Galvanized steel sheet metal ductwork including all splitters, air deflectors, hangers, supports, joints, access doors, sealants, duct connections, sleeves, frames,c ollars, fittings, controls and accessories; all gauges;square or rectangular section; fixing to concrete soffits and the like, complete; as specified and as shown on drawings. )					
5-5-1	Galvanized steel ducts G90 incl. support and accessories.	150	kg		Only..... ..... USD	
5-6	Volume Dampers Type VD	2	Nr		Only..... ..... USD	
5-7	Fire Dampers Type FD	2	Nr		Only..... ..... USD	
5-8	Air Outlets and Inlets Shall be installed complete as per specifications and drawings .					
5-8-1	Exhaust Register Type ER 200X200 in mm (DOUBLE DEFLECTION)	2	Nr		Only..... ..... USD	
5-8-2	Door Grill DG 500X250 in mm	2	Nr		Only..... ..... USD	
		<b>SUB-TOTAL ITEM IV (USD)</b>				
		<b>TOTAL ITEM O (USD)</b>				

Only

USD



**BILL III: MECHANICAL WORK**  
**ITEM P - EXTERNAL WORKS AND IRRIGATION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
	<u>The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for design and build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.</u>					
<b>1</b>	<b><u>Detailed Design</u></b>					
1-1	Construction Drawings of detailed mechanical installation design for external work and irrigation system					
1-1-1	Shop drawings	1	LS		Only..... ..... USD	
1-1-2	As built drawings	1	LS		Only..... ..... USD	
1-1-3	Site surveys reports	1	LS		Only..... ..... USD	
1-1-4	Coordination with relevant authorities for subscription and site setup for the connection to mechanical grid	1	LS		Only..... ..... USD	
1-1-5	Calculation Notes and simulation reports for equipment sizing	1	LS		Only..... ..... USD	
<b>2</b>	<b><u>Domestic Water</u></b>					
2-1	Cold water seamless galvanized steel to BS 1387 medium duty including pipe fittings,supports ,expansion joints,elbows, tees and accessories complete with trench excavation,sand material for pipe bedding and cover ,reinforced concrete encasement					
2-1-1	32 mm dn	15	m		Only..... ..... USD	
2-1-2	40 mm dn	80	m		Only..... ..... USD	
2-1-3	50 mm dn	15	m		Only..... ..... USD	

**BILL III: MECHANICAL WORK**  
**ITEM P - EXTERNAL WORKS AND IRRIGATION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
2-1-4	63 mm dn	110	m		Only..... ..... USD	
2-2	Valve Box 40 mm dn	1	Nr		Only..... ..... USD	
<b>3</b>	<b><u>Drainage</u></b>					
3-1	UPVC Pipes serving sewage, manholes, rain water complete with trench excavation,sand material for pipe bedding and cover ,reinforced concrete encasement					
3-1-1	125 mm dn	65	m		Only..... ..... USD	
3-1-2	160 mm dn	300	m		Only..... ..... USD	
3-2	Manholes, constructed of reinforced concrete with depth as required on site including formwork, steel reinforcement, excavation, backfill, epoxy lining, plain concrete, heavy duty ductile iron cover and frame complete as specified and as shown on drawings.					
3-2-1	Connection manhole (600 mm*600mm), including cast Iron cover, reinforced concrete works, Pipe connections and all accessories.	14	Nr		Only..... ..... USD	
3-2-2	Connection manhole (800 mm*800mm), including cast Iron cover, reinforced concrete works, Pipe connections and all accessories.	8	Nr		Only..... ..... USD	
<b>4</b>	<b><u>Wastewater Treatment Plant</u></b>					
4-1	Supply and install package wastewater treatment plant with design data: (Daily Consumption 20 CU.M Waste Water Treatment Plant (3 Stages) BOD5 mgO2/l <25 & SS mg/l<60 1. Primary settlement 2. Biological/Clarification Tank 3.Desinfection.	1	LS	30,000.00	Only..... ..... USD	
<b>5</b>	<b><u>Fire Fighting</u></b>					
5-1	Pipes(seamless black steel pipes schedule 40 pipe work distribution network including all fittings, spouts, joints, connections, hangers, supports, clips, anchors and like complete as specified.) complete with trench excavation,sand material for pipe bedding and cover ,reinforced concrete encasement					
5-1-1	65mm dn	60	m		Only..... ..... USD	

**BILL III: MECHANICAL WORK**  
**ITEM P - EXTERNAL WORKS AND IRRIGATION**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
5-1-2	100mm dn	180	m		Only..... ..... USD	
6	<u>Irrigation</u>					
6-1	Irrigation system for landscape including pump P5-T-B1(2.5 LPS flow, 50 mWG head)(,HDPE irrigation pipes,solenoid valve,sprincklers,solenoid valve drippers,quick coupling valve,wirring,connections and accessories	1	LS		Only..... ..... USD	
				TOTAL ITEM P (USD)		

Only.....  
..... USD

## BILL III: MECHANICAL WORK

### COLLECTION SHEET

Item	SECTION	AMOUNT IN FIGURES USD	AMOUNT IN LETTERS USD
O	MECHANICAL WORKS		
I	ADMINISTRATION BUILDING		Only..... USD
II	OFFICE BUILDING		Only..... USD
III	SERVICE BLOCK		Only..... USD
IV	WORKSHOP BUILDING		Only..... USD
TOTAL ITEM O			Only..... USD
P	EXTERNAL WORKS AND IRRIGATION		Only..... USD
	<u>TOTAL BILL III</u>		Only..... USD
	<u>VAT</u>		Only..... USD
	<u>GRAND TOTAL BILL III</u>		Only..... USD

**Only**

UNITED STATES DOLLARS

## **Bill of Quantities**

- **Bill IV: Electrical Works**

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for design and build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.						
<b>I</b>	<b><u>ADMINISTRATION BUILDING</u></b>					
<b>1</b>	<b><u>SECONDARY MAIN DISTRIBUTION PANEL BOARD COMPLETE</u></b>					
1-1	Surface mounted Secondary Main Distribution Board of hinged cover cabinet type. Cabinets to be for industrial cubicle system with IP-55, according to IEC -529 & ISO-9001 Internally and externally painted with polyester-epoxy powder paint according to RAL-7032, including all accessories as the steel mounting plate, profile structures with fixing holes, cable gland plate for cables entry, doors with reinforcement frame of 2mm thick, concealed hinges ,flush type combination locks and catches, bus bars of high conductivity hard drawn electrolytic copper and of ample cross section including the several branches mounted on the bus bars, neutral bus bars fully insulated from the cabinet ,earth connectors properly welded to the cabinet as well as properly sized surge arrestors. Metering are digital type consisting of three ammeter, one frequency meter and 7 positions voltmeter. All to be as shown on drawings and specification.					
1-1-1	SMDB1	1	Item		Only..... ..... USD	
<b>2</b>	<b><u>SECONDARY DISTRIBUTION PANEL BOARD COMPLETE</u></b>					
2-1	Recessed or surface mounted panels with plexi, glass or steel front door with necessary accessories of circuit breakers, residual current devices, residual current circuit breakers, neutral and earth bars as shown on Drawings. Breakers capacity shall be selected according to IEC-898. Pins of three and one pole shall be used to joint the breakers in the same range of panel.					
2-1-1	LP-BF	1	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
2-1-2	LP-GF	1	Item		Only..... USD	
2-1-3	LP-KT	1	Item		Only..... USD	
2-1-4	LP-TH	1	Item		Only..... USD	
2-1-5	LP-E1	1	Item		Only..... USD	
2-1-6	LP-F1	1	Item		Only..... USD	
2-1-7	LP-F2	1	Item		Only..... USD	
2-1-8	LP-F3	1	Item		Only..... USD	
2-1-9	LP-RF	1	Item		Only..... USD	
2-1-10	MCC-AC	1	Item		Only..... USD	
<b>3</b>	<b><u>LIGHTING FIXTURES</u></b>					
3-1	The lighting fixtures shall be Complete, including boxes, conduits, cables, wiring and accessories, all to be approved by the Engineer.					
3-1-1	TYPE A	40	Item		Only..... USD	
3-1-2	TYPE AE	16	Item		Only..... USD	
3-1-3	TYPE B	82	Item		Only..... USD	
3-1-4	TYPE BE	47	Item		Only..... USD	
3-1-5	TYPE C	118	Item		Only..... USD	
3-1-6	TYPE CE	90	Item		Only..... USD	
3-1-7	TYPE E	154	Item		Only..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
3-1-8	TYPE EE	56	Item		Only..... ..... USD	
3-1-9	TYPE O	70	Item		Only..... ..... USD	
3-1-10	TYPE OE	37	Item		Only..... ..... USD	
3-1-11	TYPE S	11	Item		Only..... ..... USD	
3-1-12	TYPE SE	11	Item		Only..... ..... USD	
3-1-13	TYPE R	12	Item		Only..... ..... USD	
3-1-14	EXIT	44	Item		Only..... ..... USD	
<b>4</b>	<b><u>ELECTRICAL FITTINGS, INCLUDING OUTLET BOXES, CONDUITS, WIRES, COMPLETE.</u></b>					
4-1	Supply and installation of electrical fittings including 20mm conduits or greater according to given schedule in drawings, from the secondary distribution panel boards to the electrical devices, cables as shown on schedules, outlet boxes, cover plates, fittings and all accessories and fittings. Complete as shown on drawings.					
4-1-1	16A / 250V 1 way 1 gang switch with pilot lamp where indicated.	44	Item		Only..... ..... USD	
4-1-2	16A / 250V 1 way 2 gang switch.	46	Item		Only..... ..... USD	
4-1-3	16A / 250V 2 way 1 gang switch.	24	Item		Only..... ..... USD	
4-1-4	16A / 250V 2 way 2 gang switch.	6	Item		Only..... ..... USD	
4-1-5	16A / 250V 1 way 3 gang switch.	1	Item		Only..... ..... USD	
4-1-6	LSP	2	Item		Only..... ..... USD	
4-1-7	360 degree motion detector	44	Item		Only..... ..... USD	



**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
4-1-8	16A / 250V time lag switch.	11	Item		Only..... ..... USD	
4-1-9	16A / 250V simplex socket outlet.	73	Item		Only..... ..... USD	
4-1-10	16A / 250V duplex socket outlet.	140	Item		Only..... ..... USD	
4-1-11	16A / 250V simplex socket outlet weatherproof.	37	Item		Only..... ..... USD	
4-1-12	16A / 250V duplex socket outlet weatherproof.	8	Item		Only..... ..... USD	
4-1-13	12 modules floor box with 2x16A / 250V simplex socket outlet and 2xRJ45 DATA outlets.	99	Item		Only..... ..... USD	
4-1-14	16A / 250V switched with pilot lamp socket outlet.	19	Item		Only..... ..... USD	
4-1-15	16A / 250V switched with pilot lamp socket outlet for UPS.	18	Item		Only..... ..... USD	
<b>5</b>	<b>DISCONNECTING SWITCHES</b>					
5-1	Disconnecting Switches, including switches, junction boxes, conduits, cables as shown on schedules, wiring, with all needed accessories & fittings. Complete as shown on drawings.					
5-1-1	Grounded, Single Phase Disconnecting Switch 2x10A weatherproof.	100	Item		Only..... ..... USD	
5-1-2	Grounded, Single Phase Disconnecting Switch 2x20A weatherproof.	13	Item		Only..... ..... USD	
5-1-3	Grounded, 3 Phase Disconnecting Switch 3x16A weatherproof.	3	Item		Only..... ..... USD	
5-1-4	Grounded, 3 Phase Disconnecting Switch 4x32A weatherproof.	2	Item		Only..... ..... USD	
5-1-5	Grounded, 3 Phase Disconnecting Switch 4x40A weatherproof.	3	Item		Only..... ..... USD	
5-1-6	Grounded, 3 Phase Disconnecting Switch 4x80A weatherproof.	3	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>6</b>	<b><u>IP TELEPHONE &amp; DATA SYSTEMS</u></b>					
6-1	DATA and IP telephone Systems including conduits, DATA cables all to be 4 pairs CAT6, connectors, wiring, outlets, boxes with all necessary accessories. Complete as shown on drawings.					
6-1-1	MDF including switches and UPS power supply.	1	Item		Only..... ..... USD	
6-1-2	PABX including switches and UPS power supply.	1	Item		Only..... ..... USD	
6-1-3	Patch Panel PP including switches and UPS power supply.	4	Item		Only..... ..... USD	
6-1-4	Telephone Box.	1	Item		Only..... ..... USD	
6-1-5	Dual RJ45 DATA outlet.	152	Item		Only..... ..... USD	
<b>7</b>	<b><u>TV SYSTEM</u></b>					
7-1	TV System including conduits, RG11 and RG6U coaxial cables, connectors, wiring, outlets, boxes with all necessary accessories. Complete as shown on drawings.					
7-1-1	TVDB television distribution box.	1	Item		Only..... ..... USD	
7-1-2	TVB television box.	4	Item		Only..... ..... USD	
7-1-3	TV outlet.	4	Item		Only..... ..... USD	
<b>8</b>	<b><u>IP CCTV SYSTEM</u></b>					
8-1	IP CCTV System, including conduits, 4 pairs CAT6 DATA cables, wiring, outlets, boxes, fittings with all needed accessories. Complete as shown on drawings.					
8-1-1	NVR, Network Video Recorder for 16 cameras, including switches and UPS power supply.	6	Item		Only..... ..... USD	
8-1-2	Dome Cameras 4MP	49	Item		Only..... ..... USD	
8-1-3	Bullet Cameras 4MP	10	Item		Only..... ..... USD	
8-1-4	32 inch LED screen	6	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>9</b>	<b><u>FIRE ALARM SYSTEM</u></b>					
9-1	Supply and install complete conventional fire alarm system with all necessary conduits, 2x1.5mm <sup>2</sup> fire cable, junction and pull boxes, detectors, call station, break glass, horns, in addition to the main panel. Complete as shown on drawings.					
9-1-1	Main Fire Alarm Control Panel FACP.	1	Item		Only..... ..... USD	
9-1-2	Fire Telephone Outlet	12	Item		Only..... ..... USD	
9-1-3	Manual call station	13	Item		Only..... ..... USD	
9-1-4	Fire Alarm Bell	13	Item		Only..... ..... USD	
9-1-5	Smoke detector	109	Item		Only..... ..... USD	
9-1-6	Heat detector	23	Item		Only..... ..... USD	
9-1-7	Gaz detector	1	Item		Only..... ..... USD	
9-1-8	Strobe light	8	Item		Only..... ..... USD	
<b>10</b>	<b><u>UPS SYSTEM</u></b>					
10-1	UPS system 10 KVA 1 hour autonomy, with circuit breaker, including batteries, battery racks, and all needed conduits, cables, boxes, wiring, connections and fittings for the UPS unit to be integrated into the electrical design. Complete as shown on drawings.	1	LS		Only..... ..... USD	
<b>11</b>	<b><u>ACCESS CONTROL SYSTEM</u></b>					
11-1	Access Control System including conduits, 4 pairs CAT6 DATA cables, connectors, wiring, 14 points, boxes with all necessary accessories. Complete as shown on drawings.	1	LS		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>12</b>	<b><u>SOUND SYSTEM</u></b>					
12-1	Sound System including conduits, cables, connectors, wiring, outlets, boxes with all necessary speakers, amplifiers, mixers, and all necessary accessories. Complete as shown on drawings.	1	LS		Only..... ..... USD	
<b>13</b>	<b><u>Electrical Cables</u></b>					
13-1	Supply and installation of electrical Cables including conduits cable trays, as shown on drawings and schedules. Complete, to the Engineer's approval.					
13-1-1	CU/XLPE/PVC 4x6mm <sup>2</sup> +6mm <sup>2</sup> .	120	Lm		Only..... ..... USD	
13-1-2	CU/XLPE/PVC 4x10mm <sup>2</sup> +10mm <sup>2</sup> .	80	Lm		Only..... ..... USD	
13-1-3	CU/XLPE/PVC 4x16mm <sup>2</sup> +16mm <sup>2</sup> .	215	Lm		Only..... ..... USD	
13-1-4	CU/XLPE/PVC 3x70mm <sup>2</sup> +35mm <sup>2</sup> +35mm <sup>2</sup> .	65	Lm		Only..... ..... USD	
13-1-5	CU/XLPE/PVC 3x120mm <sup>2</sup> +70mm <sup>2</sup> +70mm <sup>2</sup> .	120	Lm		Only..... ..... USD	
<b>14</b>	<b><u>CABLE TRAY HOT DIP GALVANIZED, COMPLETE.</u></b>					
14-1	Supply and install hot deep galvanized cable tray, height 5cm, galvanized after perforation with cover. Special angles support and elbows should be used to fix the cable tray on ceiling and walls. Complete as shown on drawings.					
14-1-1	Cable Trays for horizontal distribution and vertical distribution inside shafts for power and telecom installations.	1	LS		Only..... ..... USD	
<b>15</b>	<b><u>EARTHING SYSTEM, EARTH RESISTANCE LESS THAN 5 OHMS, COMPLETE</u></b>					
15-1	Supply and installation of complete earthing system Consisting of a loop conductor connected to the necessary number of copper earth rods to obtain less than 5 ohms earth resistance. The rods are 2.4m long, 20mm in diameter, each loop is formed by joining the rods with 95mm <sup>2</sup> bare copper conductor and then welded to the steel structure of the building and to a test link bus bar. System to be complete with all necessary accessories to obtain the desired earth resistance. Complete as shown on drawings.	1	LS		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>16</b>	<b><u>LIGHTNING PROTECTION SYSTEM</u></b>					
16-1	Supply and install a complete set of lightning protection system including all the necessary fittings and fixing accessories. All to be as specified and shown on the drawing.	1	LS		Only..... ..... USD	
<b>17</b>	<b><u>LIFTS</u></b>					
17-1	Lifts Including submittal of shop drawings and all product data, Car, Entrances, Doors, Controls, Safety Equipment, Hoistway Equipment, Lift Machinery, Electrical Equipment, Fan, LED Lights, Operating Panel and call buttons should be mounted at 0.9m from the floor, buttons shall be embossed, with sound and light signals, Indicator, and Finishing with Marble Flooring, Heavy Duty Stainless Steel for Wall Panels, doors, jambs, lintels and transoms, Stainless Steel Skirting and Handrail mounted on the three internal sides at 0.8m from the floor, with Battery Operated Emergency Landing Devices. Including all required builder's civil work, all electrical connections and wiring from relevant switches, testing, operation and maintenance, to be accroding to Decree No. 7964 "Terms of General requirements in buildings and structures and in lifts equipment and protection from fire and seisms".					
17-1-1	Passenger Elevator, 480Kg Capacity, speed 1.6 mps, VVVF Driver, 2.3m cabinet height, 1m wide door opening, central opening sliding doors, Complete and operational.	2	Item		Only..... ..... USD	
<b>SUB-TOTAL ITEM I (USD)</b>						

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>II</b>	<b><u>OFFICE BUILDING</u></b>					
<b>1</b>	<b><u>MAIN DISTRIBUTION PANEL BOARD, COMPLETE</u></b>					
1-1	Surface mounted Main Distribution Board of hinged cover cabinet type. Cabinets to be for industrial cubicle system with IP-55, according to IEC -529 & ISO-9001 Internally and externally painted with polyester-epoxy powder paint according to RAL-7032, including all accessories as the steel mounting plate, profile structures with fixing holes, cable gland plate for cables entry, doors with reinforcement frame of 2mm thick, concealed hinges ,flush type combination locks and catches, bus bars of high conductivity hard drawn electrolytic copper and of ample cross section including the several branches mounted on the bus bars, neutral bus bars fully insulated from the cabinet ,earth connectors properly welded to the cabinet as well as properly sized surge arrestors. Metering are digital type consisting of three ammeter, one frequency meter and 7 positions voltmeter. All to be as shown on drawings and specification.					
1-1-1	LP-O-G	1	LS		Only..... ..... USD	
<b>2</b>	<b><u>SECONDARY DISTRIBUTION BOARDS , COMPLETE</u></b>					
2-1	Recessed or surface mounted panels with plexi, glass or steel front door with necessary accessories of circuit breakers, residual current devices, residual current circuit breakers, neutral and earth bars as shown on Drawings. Breakers capacity shall be selected according to IEC-898. Pins of three and one pole shall be used to joint the breakers in the same range of panel.					
2-1-1	LP-O-F1, Lighting and Power sub-distribution board.	1	LS		Only..... ..... USD	
2-1-2	LP-O-F2, Lighting and Power sub-distribution board.	1	LS		Only..... ..... USD	
2-1-3	MCC-RF, Main Control Center Panel, complete including softstarters,relays,controls with all related accessories.	1	LS		Only..... ..... USD	
<b>3</b>	<b><u>LIGHTING FIXTURES</u></b>					
3-1	The lighting fixtures shall be Complete, including boxes, conduits, cables, wiring and accessories, all to be approved by the Engineer.					
3-1-1	TYPE O: CEILING RECESSED MOUNTED LED LIGHTING FIXTURE, 60x60 SQUARE SHAPE, 35W LED MODULE, 4000 lm, 4000K, IP40.	25	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
3-1-2	TYPE OE: CEILING RECESSED MOUNTED LED LIGHTING FIXTURE, 60x60 SQUARE SHAPE, 35W LED MODULE, 4000 lm, 4000K, IP40. TO BE SWITCH MAINTAINED TYPE, EQUIPPED WITH 3hrs EMERGENCY	18	Item		Only..... ..... USD	
3-1-3	TYPE E: CEILING RECESSED MOUNTED LED SPOT WITH MOUNTING FITTINGS, Ø150mm, 12W, 1200 lm, 4000K.	42	Item		Only..... ..... USD	
3-1-4	TYPE EE: CEILING RECESSED MOUNTED LED SPOT WITH MOUNTING FITTINGS, Ø150mm, 12W, 1200 lm, 4000K, EQUIPPED WITH 3hrs EMERGENCY BATTERY PACK.	22	Item		Only..... ..... USD	
3-1-5	TYPE B: CEILING RECESSED MOUNTED LED LIGHTING FIXTURE, 20W, 2400 lm, 4000K, IP44.	30	Item		Only..... ..... USD	
3-1-6	TYPE BE: CEILING RECESSED MOUNTED LED LIGHTING FIXTURE, 20W, 2400 lm, 4000K, IP44. TO BE SWITCH MAINTAINED TYPE, EQUIPPED WITH 3hrs EMERGENCY BATTERY PACK.	22	Item		Only..... ..... USD	
3-1-7	TYPE T: CEILING RECESSED MOUNTED LED SPOT WITH MOUNTING FITTINGS, Ø50mm, 5.5W GU10 LED BULB, 350 lm, 2700K.	28	Item		Only..... ..... USD	
3-1-8	TYPE TE: CEILING RECESSED MOUNTED LED SPOT WITH MOUNTING FITTINGS, Ø50mm, 5.5W GU10 LED BULB, 350 lm, 2700K. TO BE SWITCH MAINTAINED TYPE, EQUIPPED WITH 3hrs EMERGENCY BATTERY PACK.	12	Item		Only..... ..... USD	
3-1-9	TYPE S: CEILING SURFACE MOUNTED LED LIGHTING FIXTURE, Ø290mm, 12W E27 LED BULB, 1055 lm, 2700K, IP44.	8	Item		Only..... ..... USD	
3-1-10	TYPE A: CEILING SURFACE MOUNTED OR SUSPENDED LED LIGHTING FIXTURE, 1300mm LONG, 33W LED, 4200 lm, 4000K, IP65, IK08.	10	Item		Only..... ..... USD	
3-1-11	TYPE AE: CEILING SURFACE MOUNTED OR SUSPENDED LED LIGHTING FIXTURE, 1300mm LONG, 33W LED, 4200 lm, 4000K, IP65, IK08. TO BE SWITCH MAINTAINED TYPE, EQUIPPED WITH 3hrs EMERGENCY BATTERY PACK.	6	Item		Only..... ..... USD	
3-1-12	SURFACE MOUNTED OR CEILING SUSPENDED EXIT LIGHT WITH 3 HRS EMERGENCY PACK, PRINTED EXIT SCREEN & ARROW, 1x6W LED LAMP. IP 54.	28	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>4</b>	<b><u>ELECTRICAL FITTINGS, INCLUDING OUTLET BOXES, CONDUITS, WIRES, COMPLETE.</u></b>					
4-1	Supply and installation of electrical fittings including 20mm conduits or greater according to given schedule in drawings, from the secondary distribution panel boards to the electrical devices, cables as shown on schedules, outlet boxes, cover plates, fittings and all accessories and fittings. Complete as shown on drawings.					
4-1-1	16A / 250V one way one gang switch.	40	Item		Only..... ..... USD	
4-1-2	16A / 250V one way two gang switch.	6	Item		Only..... ..... USD	
4-1-3	10A / 250V time-lag push button.	7	Item		Only..... ..... USD	
4-1-4	OCCUPANCY / MOTION DETECTOR SWITCH, CIRCULAR, 360°,20 m range.	4	Item		Only..... ..... USD	
4-1-5	16A / 250V simplex socket outlet.	100	Item		Only..... ..... USD	
4-1-6	16A / 250V duplex socket outlet.	12	Item		Only..... ..... USD	
4-1-7	16A / 250V simplex socket outlet weatherproof.	12	Item		Only..... ..... USD	
4-1-8	12 modules floor box with 2x16A / 250V simplex socket outlet and 2xRJ45 DATA outlets.	65	Item		Only..... ..... USD	
4-1-9	16A / 250V switched with pilot lamp socket outlet.	8	Item		Only..... ..... USD	
4-1-10	16A / 250V switched with pilot lamp socket outlet for UPS.	22	Item		Only..... ..... USD	
<b>5</b>	<b><u>DISCONNECTING SWITCHES</u></b>					
5-1	Disconnecting Switches, including switches, junction boxes, conduits, cables as shown on schedules, wiring, with all needed accessories & fittings. Complete as shown on drawings.					
5-1-1	Grounded, Single Phase Disconnecting Switch 2x10A weatherproof.	45	Item		Only..... ..... USD	
5-1-2	Grounded, Single Phase Disconnecting Switch 4x16A weatherproof.	2	Item		Only..... ..... USD	



**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
5-1-3	Grounded, Single Phase Disconnecting Switch 4x25A weatherproof.	5	Item		Only..... ..... USD	
5-1-4	Grounded, Single Phase Disconnecting Switch 4x32A weatherproof.	2	Item		Only..... ..... USD	
<b>6</b>	<b>IP TELEPHONE &amp; DATA SYSTEMS</b>					
6-1	DATA and IP telephone Systems including conduits, DATA cables all to be 4 pairs CAT6, connectors, wiring, outlets, boxes with all necessary accessories. Complete as shown on drawings.					
6-1-1	PABX including switches and UPS power supply.	1	Item		Only..... ..... USD	
6-1-2	Patch Panel PP including switches and UPS power supply.	1	Item		Only..... ..... USD	
6-1-3	Telephone Box.	3	Item		Only..... ..... USD	
6-1-4	Dual RJ45 DATA outlet.	28	Item		Only..... ..... USD	
<b>7</b>	<b>TV SYSTEM</b>					
7-1	TV System including conduits, RG11 and RG6U coaxial cables, connectors, wiring, outlets, boxes with all necessary accessories. Complete as shown on drawings.					
7-1-1	TVDB television distribution box.	1	Item		Only..... ..... USD	
7-1-2	TVB television box.	3	Item		Only..... ..... USD	
7-1-3	TV outlet.	5	Item		Only..... ..... USD	
<b>8</b>	<b>IP CCTV SYSTEM</b>					
8-1	IP CCTV System, including conduits, 4 pairs CAT6 DATA cables, wiring, outlets, boxes, fittings with all needed accessories. Complete as shown on drawings.					
8-1-1	Connection to NVR in administration building, Network Video Recorder for 16 cameras, including switches and UPS power supply.	1	LS		Only..... ..... USD	
8-1-2	Dome Cameras 4MP	10	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>9</b>	<b><u>FIRE ALARM SYSTEM</u></b>					
9-1	Supply and install complete conventional fire alarm system with all necessary conduits, 2x1.5mm <sup>2</sup> fire cable, junction and pull boxes, detectors, call station, break glass, horns, in addition to the main panel. Complete as shown on drawings.					
9-1-1	Fire Alarm Repeater Panel FARP.	1	Item		Only..... ..... USD	
9-1-2	Fire Telephone Outlet	8	Item		Only..... ..... USD	
9-1-3	Manual call station	8	Item		Only..... ..... USD	
9-1-4	Fire Alarm Bell	8	Item		Only..... ..... USD	
9-1-5	Smoke detector	35	Item		Only..... ..... USD	
9-1-6	Heat detector	4	Item		Only..... ..... USD	
9-1-7	Strobe light				Only..... ..... USD	
<b>10</b>	<b><u>UPS SYSTEM</u></b>					
10-1	UPS system 10 KVA 1 hour autonomy, with circuit breaker, including batteries, battery racks, and all needed conduits, cables, boxes, wiring, connections and fittings for the UPS unit to be integrated into the electrical design. Complete as shown on drawings.	1	LS		Only..... ..... USD	
<b>11</b>	<b><u>ACCESS CONTROL SYSTEM</u></b>					
11-1	Access Control System including conduits, 4 pairs CAT6 DATA cables, connectors, wiring 23 points, boxes with all necessary accessories. Complete as shown on drawings.	1	LS		Only..... ..... USD	
<b>12</b>	<b><u>Electrical Cables</u></b>					
12-1	Supply and installation of electrical Cables including conduits cable trays, as shown on drawings and schedules. Complete, to the Engineer's approval.					
12-1-1	CU/XLPE/PVC 3x70mm <sup>2</sup> +35mm <sup>2</sup> +35mm <sup>2</sup> .	220	Lm		Only..... ..... USD	
12-1-2	CU/XLPE/PVC 3x16mm <sup>2</sup> +16mm <sup>2</sup> +16mm <sup>2</sup> .	35	Lm		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
12-1-3	CU/XLPE/PVC 3x6mm <sup>2</sup> +6mm <sup>2</sup> +6mm <sup>2</sup> .	60	Lm		Only..... ..... USD	
<b>13</b>	<b><u>EARTHING SYSTEM, EARTH RESISTANCE LESS THAN 5 OHMS, COMPLETE</u></b>					
13-1	Supply and installation of complete earthing system Consisting of a loop conductor connected to the necessary number of copper earth rods to obtain less than 5 ohms earth resistance. The rods are 2.4m long, 20mm in diameter, each loop is formed by joining the rods with 95mm <sup>2</sup> bare copper conductor and then welded to the steel structure of the building and to a test link bus bar. System to be complete with all necessary accessories to obtain the desired earth resistance. Complete as shown on drawings.	1	LS		Only..... ..... USD	
<b>14</b>	<b><u>CABLE TRAY HOT DIP GALVANIZED, COMPLETE.</u></b>					
14-1	Supply and install hot deep galvanized cable tray, height 5cm, galvanized after perforation with cover. Special angles support and elbows should be used to fix the cable tray on ceiling and walls. Complete as shown on drawings.					
14-1-1	Cable Trays for horizontal distribution and vertical distribution inside shafts for power and telecom installations.	1	LS		Only..... ..... USD	
<b>15</b>	<b><u>LIGHTNING PROTECTION SYSTEM</u></b>					
15-1	Supply and install a complete set of lightning protection system including all the necessary fittings and fixing accessories. All to be as specified and shown on the drawing.	1	LS		Only..... ..... USD	
		<b>SUB-TOTAL ITEM II (USD)</b>				

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>III</b>	<b><u>SERVICE BLOCK</u></b>					
<b>1</b>	<b><u>SECONDARY DISTRIBUTION PANEL BOARD COMPLETE</u></b>					
1-1	Recessed or surface mounted panels with plexi, glass or steel front door with necessary accessories of circuit breakers, residual current devices, residual current circuit breakers, neutral and earth bars as shown on Drawings. Breakers capacity shall be selected according to IEC-898. Pins of three and one pole shall be used to joint the breakers in the same range of panel.					
1-1-1	LP-AT	1	Item		Only..... ..... USD	
<b>2</b>	<b><u>LIGHTING FIXTURES</u></b>					
2-1	The lighting fixtures shall be Complete, including boxes, conduits, cables, wiring and accessories, all to be approved by the Engineer.					
2-1-1	TYPE A	30	Item		Only..... ..... USD	
2-1-2	TYPE AE	12	Item		Only..... ..... USD	
2-1-3	TYPE S	12	Item		Only..... ..... USD	
2-1-4	TYPE SE	2	Item		Only..... ..... USD	
2-1-5	EXIT	3	Item		Only..... ..... USD	
<b>3</b>	<b><u>ELECTRICAL FITTINGS, INCLUDING OUTLET BOXES, CONDUITS, WIRES, COMPLETE.</u></b>					
3-1	Supply and installation of electrical fittings including 20mm conduits or greater according to given schedule in drawings, from the secondary distribution panel boards to the electrical devices, cables as shown on schedules, outlet boxes, cover plates, fittings and all accessories and fittings. Complete as shown on drawings.					
3-1-1	16A / 250V 1 way 1 gang switch.	13	Item		Only..... ..... USD	
3-1-2	16A / 250V 2 way 1 gang switch.	2	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
3-1-3	16A / 250V simplex socket outlet weatherproof.	2	Item		Only..... ..... USD	
3-1-4	16A / 250V duplex socket outlet weatherproof.	34	Item		Only..... ..... USD	
<b>4</b>	<b><u>DISCONNECTING SWITCHES</u></b>					
<b>4-1</b>	<u>Disconnecting Switches, including switches, junction boxes, conduits, cables as shown on schedules, wiring, with all needed accessories &amp; fittings. Complete as shown on drawings.</u>					
4-1-1	Grounded, Single Phase Disconnecting Switch 2x10A weatherproof.	22	Item		Only..... ..... USD	
4-1-2	Grounded, Single Phase Disconnecting Switch 2x20A weatherproof.	2	Item		Only..... ..... USD	
4-1-3	Grounded, 3 Phase Disconnecting Switch 4x32A weatherproof.	2	Item		Only..... ..... USD	
<b>5</b>	<b><u>IP TELEPHONE &amp; DATA SYSTEMS</u></b>					
5-1	DATA and IP telephone Systems including conduits, DATA cables all to be 4 pairs CAT6, connectors, wiring, outlets, boxes with all necessary accessories. Complete as shown on drawings.					
5-1-1	MDF including switches and UPS power supply.	1	Item		Only..... ..... USD	
5-1-2	Patch Panel PP including switches and UPS power supply.	1	Item		Only..... ..... USD	
5-1-3	Dual RJ45 DATA outlet.	34	Item		Only..... ..... USD	
<b>6</b>	<b><u>IP CCTV SYSTEM</u></b>					
6-1	IP CCTV System, including conduits, 4 pairs CAT6 DATA cables, wiring, outlets, boxes, fittings with all needed accessories. Complete as shown on drawings.					
6-1-1	Connection to NVR in administration building, Network Video Recorder for 16 cameras, including switches and UPS power supply.	1	LS		Only..... ..... USD	
6-1-2	Bullet Cameras 4MP	6	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>7</b>	<b><u>FIRE ALARM SYSTEM</u></b>					
7-1	Supply and install complete conventional fire alarm system with all necessary conduits, 2x1.5mm <sup>2</sup> fire cable, junction and pull boxes, detectors, call station, break glass, horns, in addition to the main panel. Complete as shown on drawings.					
7-1-1	Fire Alarm Repeater Panel FARP.	1	Item		Only..... ..... USD	
7-1-2	Fire Telephone Outlet	4	Item		Only..... ..... USD	
7-1-3	Manual call station	4	Item		Only..... ..... USD	
7-1-4	Fire Alarm Bell	4	Item		Only..... ..... USD	
7-1-5	Smoke detector	16	Item		Only..... ..... USD	
<b>8</b>	<b><u>Electrical Cables</u></b>					
8-1	Supply and installation of electrical Cables including conduits cable trays, as shown on drawings and schedules. Complete, to the Engineer's approval.					
8-1-1	CU/XLPE/PVC 3x35mm <sup>2</sup> +16mm <sup>2</sup> +16mm <sup>2</sup> .	40	Lm		Only..... ..... USD	
<b>SUB-TOTAL ITEM III (USD)</b>						

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>IV</b>	<b><u>WORKSHOP BUILDING</u></b>					
<b>1</b>	<b><u>MAIN DISTRIBUTION PANEL BOARD COMPLETE</u></b>					
1-1	Surface mounted Main Distribution Board of hinged cover cabinet type. Cabinets to be for industrial cubicle system with IP-55, according to IEC -529 & ISO-9001 Internally and externally painted with polyester-epoxy powder paint according to RAL-7032, including all accessories as the steel mounting plate, profile structures with fixing holes, cable gland plate for cables entry, doors with reinforcement frame of 2mm thick, concealed hinges ,flush type combination locks and catches, bus bars of high conductivity hard drawn electrolytic copper and of ample cross section including the several branches mounted on the bus bars, neutral bus bars fully insulated from the cabinet ,earth connectors properly welded to the cabinet as well as properly sized surge arrestors. Metering are digital type consisting of three ammeter, one frequency meter and 7 positions voltmeter. All to be as shown on drawings and specification.					
1-1-1	MDB	1	Item		Only..... ..... USD	
<b>2</b>	<b><u>ATS, COMPLETE</u></b>					
2-1	Supply and installation of ATS for EDL power supply and stand-by generator-sets, with electrical and mechanical interlock mechanism as shown on drawings. Complete with all control cables and connections required for the switching to function properly.					
2-1-1	ATS, COMPLETE	1	Item		Only..... ..... USD	
<b>3</b>	<b><u>SECONDARY DISTRIBUTION PANEL BOARD COMPLETE</u></b>					
3-1	Recessed or surface mounted panels with plexi, glass or steel front door with necessary accessories of circuit breakers, residual current devices, residual current circuit breakers, neutral and earth bars as shown on Drawings. Breakers capacity shall be selected according to IEC-898. Pins of three and one pole shall be used to joint the breakers in the same range of panel.					
3-1-1	LP-TB	1	Item		Only..... ..... USD	
3-1-2	MCC-BF	1	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>4</b>	<b><u>LIGHTING FIXTURES</u></b>					
4-1	The lighting fixtures shall be Complete, including boxes, conduits, cables, wiring and accessories, all to be approved by the Engineer.					
4-1-1	TYPE A	15	Item		Only..... ..... USD	
4-1-2	TYPE AE	5	Item		Only..... ..... USD	
<b>5</b>	<b><u>ELECTRICAL FITTINGS, INCLUDING OUTLET BOXES, CONDUITS, WIRES, COMPLETE.</u></b>					
5-1	Supply and installation of electrical fittings including 20mm conduits or greater according to given schedule in drawings, from the secondary distribution panel boards to the electrical devices, cables as shown on schedules, outlet boxes, cover plates, fittings and all accessories and fittings. Complete as shown on drawings.					
5-1-1	16A / 250V 1 way 1 gang switch with pilot lamp where indicated.	4	Item		Only..... ..... USD	
5-1-2	16A / 250V duplex socket outlet weatherproof.	5	Item		Only..... ..... USD	
<b>6</b>	<b><u>DISCONNECTING SWITCHES</u></b>					
6-1	Disconnecting Switches, including switches, junction boxes, conduits, cables as shown on schedules, wiring, with all needed accessories & fittings. Complete as shown on drawings.					
6-1-1	Grounded, Single Phase Disconnecting Switch 2x10A weatherproof.	1	Item		Only..... ..... USD	
6-1-2	Grounded, 3 Phase Disconnecting Switch 3x16A weatherproof.	4	Item		Only..... ..... USD	
<b>7</b>	<b><u>IP TELEPHONE &amp; DATA SYSTEMS</u></b>					
7-1	DATA and IP telephone Systems including conduits, DATA cables all to be 4 pairs CAT6, connectors, wiring, outlets, boxes with all necessary accessories. Complete as shown on drawings.					
7-1-1	MDF including switches and UPS power supply.	1	Item		Only..... ..... USD	
7-1-2	Dual RJ45 DATA outlet.	1	Item		Only..... ..... USD	



**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>8</b>	<b><u>IP CCTV SYSTEM</u></b>					
8-1	IP CCTV System, including conduits, 4 pairs CAT6 DATA cables, wiring, outlets, boxes, fittings with all needed accessories. Complete as shown on drawings.					
8-1-1	Connection to NVR in administration building, Network Video Recorder for 16 cameras, including switches and UPS power supply.	1	LS		Only..... ..... USD	
8-1-2	Dome Cameras 4MP	2	Item		Only..... ..... USD	
<b>9</b>	<b><u>FIRE ALARM SYSTEM</u></b>					
9-1	Supply and install complete conventional fire alarm system with all necessary conduits, 2x1.5mm <sup>2</sup> fire cable, junction and pull boxes, detectors, call station, break glass, horns, in addition to the main panel. Complete as shown on drawings.					
9-1-1	Fire Alarm Repeater Panel FARP.	1	Item		Only..... ..... USD	
9-1-2	Fire Telephone Outlet	1	Item		Only..... ..... USD	
9-1-3	Manual call station	1	Item		Only..... ..... USD	
9-1-4	Fire Alarm Bell	1	Item		Only..... ..... USD	
9-1-5	Smoke detector	4	Item		Only..... ..... USD	
9-1-6	Heat detector	3	Item		Only..... ..... USD	
9-1-7	Strobe light	4	Item		Only..... ..... USD	
<b>10</b>	<b><u>Electrical Cables</u></b>					
10-1	Supply and installation of electrical Cables including conduits cable trays, as shown on drawings and schedules. Complete, to the Engineer's approval.					
10-1-1	CU/XLPE/PVC 4x6mm <sup>2</sup> +6mm <sup>2</sup> .	50	Lm		Only..... ..... USD	
10-1-2	CU/XLPE/PVC 4x16mm <sup>2</sup> +16mm <sup>2</sup> .	30	Lm		Only..... ..... USD	
10-1-3	CU/XLPE/PVC 3x185mm <sup>2</sup> +95mm <sup>2</sup> +95mm <sup>2</sup> .	80	Lm		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM Q - ELECTRICAL WORKS FOR BUILDINGS**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
11	<b><u>EARTHING SYSTEM, EARTH RESISTANCE LESS THAN 5 OHMS, COMPLETE</u></b>					
11-1	Supply and installation of complete earthing system Consisting of a loop conductor connected to the necessary number of copper earth rods to obtain less than 5 ohms earth resistance. The rods are 2.4m long, 20mm in diameter, each loop is formed by joining the rods with 95mm <sup>2</sup> bare copper conductor and then welded to the steel structure of the building and to a test link bus bar. System to be complete with all necessary accessories to obtain the desired earth resistance. Complete as shown on drawings.	1	LS		Only..... ..... USD	
12	<b><u>GENERATOR SYSTEM</u></b>					
12-1	Supply, Install, Test and Commission 2 Generator-Sets of 150 KVA prime and one Generator-Set of 50KVA prime, including Fuel Supply System, steel daily fuel storage tank 3x2000L, fuel pipes with piping network, fuel water separator, fuel pump, self cleaning fuel oil sysem, fuel oil pressure gauge and connections, Ventilation System, exhaust fans with ducts and required insulation, sound proofing to 65dBA at 1m, totalizing and synchronizing panel, load management system, power cables from generators to totalizing panel, exhaust system and all other related equipment. Complete and Operational, to the Engineer's approval.	1	LS		Only..... ..... USD	
		SUB-TOTAL ITEM IV (USD)				
		TOTAL ITEM Q (USD)				

Only.....

USD

**BILL IV: ELECTRICAL WORKS**  
**ITEM R - ELECTRICAL WORKS FOR SITE PLAN**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<u>The Contractor is to attach under this bill any additional item/s which are not mentioned elsewhere to complete the build up of lump sum price for design and build contract. Should the Tenderer fail to insert the item/s below, it will be deemed that the price for any item/s as described in the Specification, Drawing, Client's requirements, or incidental, or deemed necessary to complete the Client's requirements are included elsewhere in this bill of quantities and as part of this lump sum price. No subsequent claim for any additional item shall be entertained.</u>						
<b>1</b>	<b><u>CONNECTION TO EDL NETWORK</u></b>					
1-1	Connection to the EDL network including subscription, coordination with EDL authorities, civil works to according to the EDL construction drawings of the transformer room, with all necessary cables, protection cells, bus bars low voltage panel installation, including fittings and all needed accessories in order to achieve the full connection to EDL's network, complete as shown on drawings and as per EDL requirements.					
1-1-1	400KVA Subscription to EDL.	1	LS		Only..... ..... USD	
<b>2</b>	<b><u>LV NETWORK</u></b>					
2-1	Construction of a new Electrical Infrastructure Network. Works shall include the excavation of a new trench to install the duct banks, the installation of electrical manholes, Φ150mm pvc ducts, warning tapes, concrete tiles, LV marking, backfilling and reinstatement of the working area with all the required works. Complete as shown on the drawings and to the approval of the Engineer.					
2-1-1	Electrical manhole 1m x 1m x 1m. Complete with iron cover and electrical indication.	9	Item		Only..... ..... USD	
2-1-2	Electrical duct bank 2xΦ150 UPVC pipes. Complete including concrete spacers, supports.	75	Item		Only..... ..... USD	
2-1-3	Electrical duct bank 3xΦ150 UPVC pipes. Complete including concrete spacers, supports.	100	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM R - ELECTRICAL WORKS FOR SITE PLAN**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
<b>3</b>	<b><u>TELECOM NETWORK</u></b>					
3-1	Construction of a new TELECOM Infrastructure Network. Works shall include the excavation of a new trench to install the duct banks, the installation of electrical manholes, Φ100mm pvc ducts, warning tapes, concrete tiles, markings, backfilling and reinstatement of the working area with all the required works. Complete as shown on the drawings and to the approval of the Engineer.					
3-1-1	Telecom manhole 1m x 1m x 1m. Complete with iron cover and electrical indication.	9	Item		Only..... ..... USD	
3-1-2	Telecom duct bank 2xΦ100 UPVC pipes. Complete including concrete spacers, supports.	75	Item		Only..... ..... USD	
3-1-3	Telecom duct bank 3xΦ100 UPVC pipes. Complete including concrete spacers, supports.	100	Item		Only..... ..... USD	
<b>4</b>	<b><u>STREET LIGHTING NETWORK</u></b>					
4-1	Install, connect, test and commission the following lighting poles with fixtures provided, complete including the supply of all other materials to complete the installation, circuit breakers, fuses, control gear, arms, internal cabling, connection box and protective devices, accessories, all necessary corrosion protection, and all other related works, all as specified, shown on the drawings, to the satisfaction of the Engineer					
4-1-1	Decorative pole, 8m high, with single bracket, including water protected lighting fixture of 70W LED type.	17	Item		Only..... ..... USD	
4-2	Construct the following foundations for the street lighting poles, complete including, but not limited to, all necessary excavation, concrete works using ordinary Portland cement to ASTM C150, Type I, 11 MPa on cylinder for blinding and 30 MPa on cylinder for reinforced concrete works with all necessary formwork, reinforcement, accessories, application of two coats of bituminous paint to concrete surfaces in contact with soil, backfilling and compaction, removal of resulting materials to approved dumping areas outside the site, and all other related works, all as specified, shown on the drawings, to the satisfaction of the Engineer					
4-2-1	Foundation for 8m high street lighting pole with single bracket 1m <sup>3</sup> in volume.	17	Item		Only..... ..... USD	

**BILL IV: ELECTRICAL WORKS**  
**ITEM R - ELECTRICAL WORKS FOR SITE PLAN**

ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT RATE IN FIGURES USD	UNIT RATE IN LETTERS USD	AMOUNT USD
4-3	Install, connect, test and commission the following feeder pillars provided under the "Provisional Sum" Bill, complete including all necessary excavation, concrete works for concrete bases using ordinary Portland cement to ASTM C150, Type I, 11 MPa on Cylinder for blinding and 30 MPa on Cylinder for reinforced concrete works, necessary formwork, reinforcement, accessories, galvanized steel plate for cable protection, louvers with screen, galvanized steel protection barriers, PVC sleeves, internal cabling, bi-metal lugs, and all other related works, all as specified, shown on drawings, to the satisfaction of the Engineer. Feeder Pillar shall include all the necessary photocells, circuit breakers, residual current devices, residual current circuit breakers, neutral and earth bars, Earthing rod. Breakers capacity shall be selected according to IEC-898.					
4-3-1	SLFP	1	Item		Only..... ..... USD	
<b>5</b>	<b><u>IP CCTV SYSTEM</u></b>					
5-1	IP CCTV System, including conduits, 4 pairs CAT6 DATA cables, wiring, outlets, boxes, fittings with all needed accessories. Complete as shown on drawings.					
5-1-1	Connection to NVR in administration building, Network Video Recorder for 16 cameras, including switches and UPS power supply.	1	LS		Only..... ..... USD	
5-1-2	Bullet Cameras 4MP with mounting bracket to the street lighting pole.	15	Item		Only..... ..... USD	
<b>6</b>	<b><u>Electrical Cables</u></b>					
6-1	Supply and installation of street lighting Cables including excavation backfilling and reinstatement of the working area with all the required works, as shown on drawings and schedules. Complete, to the Engineer's approval.					
6-1-1	4x10mm <sup>2</sup> +10mm <sup>2</sup> cables, installed in flexible PE Ø 75mm conduits.	400	Lm		Only..... ..... USD	
<b>TOTAL ITEM R (USD)</b>						

Only

USD

**BILL IV: ELECTRICAL WORK**  
**COLLECTION SHEET**

Item	SECTION	AMOUNT IN FIGURES USD	AMOUNT IN LETTERS USD
Q	ELECTRICAL FOR BUILDINGS		
I	ADMINISTRATION BUILDING		Only..... ..... USD
II	OFFICE BUILDING		Only..... ..... USD
III	SERVICE BLOCK		Only..... ..... USD
IV	WORKSHOP BUILDING		Only..... ..... USD
TOTAL ITEM Q			Only..... ..... USD
R	ELECTRICAL FOR SITE PLAN		Only..... ..... USD
	<u>TOTAL BILL IV</u>		Only..... ..... USD
	<u>VAT</u>		Only..... ..... USD
	<u>GRAND TOTAL BILL IV</u>		Only..... ..... USD

Only.....  
.....  
..... UNITED STATES DOLLARS

## **Bill of Quantities**

- **Collection Sheet**

**COLLECTION SHEET**

SECTION	AMOUNT IN FIGURES USD	AMOUNT IN LETTERS USD
TOTAL BILL I & BILL II		Only..... ..... USD
TOTAL BILL III		Only..... ..... USD
TOTAL BILL IV		Only..... ..... USD
<b><u>TOTAL</u></b>		Only..... ..... USD
<b><u>VAT</u></b>		Only..... ..... USD
<b><u>GRAND TOTAL</u></b>		Only..... ..... USD

**Only****UNITED STATES DOLLARS**موافق  
مدير المياهدقيقه  
المهندس

نظمه

المهندسة منى فقيه

سامر الحسيني

دار الهندسة نزيه طالب وشركاه

وزير الطاقة والمياه

موافق  
المدير العام للموارد المائية والكهربائية

سيزار ريمون أبي خليل

د. فادي جورج قمير