

Republic of Sierra Leone

Standard Bidding Documents

**Procurement of Works
International Competitive Bidding**

Bank of Sierra Leone

**Rehabilitation of Kenema Branch Building,
Hangha Road/Dama Road, Kenema City,
Sierra Leone, West Africa**

Procurement Number: BSL/GSD/2013/0011

Date of Issue: 24th July 2013

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Section I. Invitation for Bids

Invitation for Bids (IFB)

BANK OF SIERRA LEONE

Rehabilitation of Kenema Branch Building, Hangha Road/Dama Road, Kenema City, Sierra Leone, West Africa

Procurement Number BSL/GSD/2013/0011

The Bank of Sierra Leone has allocated funds from its 2013 Capital Expenditure Budget for the procurement of Rehabilitation of the Kenema Branch Building, Dama Road, Kenema City, Sierra Leone and now invites sealed bids from eligible national/international bidders for the rehabilitation of a building located at Hangha Road/Dama Road, Kenema City, Sierra Leone, West Africa.

Bidding is open to all **PREMIER** contractors in Sierra Leone or from other countries with the equivalent classification status and other eligibility criteria as indicated in the Bidding and Contract Data.

Interested bidders may obtain further information and inspect the bidding documents at the address below between Mondays to Thursdays from 12 hours to 16 hours (Sierra Leone Time). Bidding documents may be purchased upon payment of a non-refundable fee of Le 3,000,000.00 (Three million Leones) or equivalent in a freely convertible currency.

Bids must be delivered to the address below on or before 12th September 2013 at 12:00 noon (Sierra Leone Time).

All bids must be accompanied by:

- A bid security of Le 200,000,000.00 (Two Hundred Million Leones) or the equivalent in a freely convertible currency ;
- Contractor's Registration Certificate
- A Valid Tax Certificate;
- A Valid NASSIT Certificate - *For National Bidders Only*

Bids will be opened on 12th September 2013 at 12:05 pm (Sierra Leone Time), in the presence of bidders/ representatives of bidders who choose to attend, at the address below. Late bids will be rejected and returned unopened to bidders.

Bank of Sierra Leone;
Head, Procurement Unit;
8th Floor, Main Bank Building- Siaka Stevens Street;
Freetown;
E-Mail: dkamara@bsl.gov.sl

Section II. Instructions to Bidders

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Instructions to Bidders

A. General

- 1. Scope of Bid**
 - 1.1 The Employer as defined in the Contract Data, invites bids for the construction of Works, as described in the Contract Data. The name and procurement number of the Contract is provided in the Contract Data.
 - 1.2 The successful Bidder will be expected to complete the Works by the Intended Completion Date specified in the Contract Data.
- 2. Source of Funds**
 - 2.1 Details of any funding provided to cover eligible payments under the Contract in addition to that provided by the Government of Sierra Leone are given in the Bidding Data.
- 3. Eligible Bidders**
 - 3.1 This Invitation for Bids is open to all bidders from eligible countries as defined in the Bidding Data. Any materials, equipment, and services to be used in the performance of the Contract shall have their origin in eligible source countries.
 - 3.2 All bidders shall provide in Section 4, Forms of Bid and Qualification Information, a statement that the Bidder (including all members of a joint venture and subcontractors) is not associated, nor has been associated in the past, directly or indirectly, with the consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Entity to provide consulting services for the preparation or supervision of the Works, and any of its affiliates, shall not be eligible to bid.
 - 3.3 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Sierra Leone in accordance with sub-clause 37.1.
- 4. Qualification of the Bidder**
 - 4.1 All bidders shall provide in Section 4, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
 - 4.2 If a formal prequalification of potential bidders has been undertaken, only bids from pre-qualified bidders will be considered for award of Contract. These qualified bidders should submit with their bids any information updating their original prequalification applications or, alternatively, confirm in their bids that the originally submitted prequalification information remains essentially correct as of the date of bid submission. The update or confirmation should be provided in Section 4.

- 4.3 If the Employer has not undertaken prequalification of potential bidders, all bidders shall include the following information and documents with their bids in Section 4, unless otherwise stated in the Bidding Data:
- (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the Bid to commit the Bidder;
 - (b) total monetary value of construction work performed for each of the last five years;
 - (c) experience in works of a similar nature and size for each of the last five years, and details of work under way or contractually committed; and clients who may be contacted for further information on those contracts;
 - (d) major items of construction equipment proposed to carry out the Contract;
 - (e) qualifications and experience of key site management and technical personnel proposed for the Contract;
 - (f) reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years;
 - (g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);
 - (h) authority to seek references from the Bidder's bankers;
 - (i) information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned, and disputed amount; and
 - (j) proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price.
- 4.4 Bids submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated in the Bidding Data:
- (a) the Bid shall include all the information listed in Sub-Clause 4.3 above for each joint venture partner;
 - (b) the Bid shall be signed so as to be legally binding on all partners;

- (c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
- (d) one of the partners will be nominated as being in charge, authorised to incur liabilities, and receive instructions for and on behalf of any and all partners of the joint venture; and
- (e) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

4.5 To qualify for award of the Contract, bidders shall meet the following minimum qualifying criteria:

- (a) annual volume of construction work of at least the amount specified in the Bidding Data;
- (b) experience as prime contractor in the construction of at least two works of a nature and complexity equivalent to the Works over the last 10 years (to comply with this requirement, works cited should be at least 70 percent complete);
- (c) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment listed in the Bidding Data;
- (d) key personnel required for the performance of the contract with the qualifications and experience detailed in the Bidding Data; and
- (e) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than the amount specified in the Bidding Data.

A consistent history of litigation or arbitration awards against the Applicant or any partner of a Joint Venture may result in disqualification.

4.6 The figures for each of the partners of a joint venture shall be added together to determine the Bidder's compliance with the minimum qualifying criteria of Sub-Clause 4.5(a) and (e); however, for a joint venture to qualify, each of its partners must meet at least 25 percent of minimum criteria 4.5(a), (b), and (e) for an individual Bidder, and the partner in charge at least 40 percent of those minimum criteria. Failure to comply with this requirement will result in rejection of the joint venture's Bid. Subcontractors' experience and resources will not be taken into

account in determining the Bidder's compliance with the qualifying criteria, unless otherwise stated in the Bidding Data.

- 4.7 Domestic bidders and joint ventures of domestic and foreign bidders applying for eligibility for any margin of domestic preference in bid evaluation as stated in the Bidding Data, shall supply all information to satisfy the criteria for eligibility as described in Clause 30 of these Instructions to Bidders.
- 5. One Bid per Bidder** 5.1 Each Bidder shall submit only one Bid, either individually or as a partner in a joint venture. A Bidder who submits or participates in more than one Bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.
- 6. Cost of Bidding** 6.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible or liable for those costs.
- 7. Site Visit** 7.1 The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

B. Bidding Documents

- 8. Content of Bidding Documents** 8.1 The set of bidding documents comprises the documents listed in the table below, and addenda issued in accordance with Clause 10:
- | | |
|-----------|--|
| Section I | Invitation to Bid |
| II | Instructions to Bidders |
| III | Bidding Data |
| IV | Forms of Bid and Qualification Information |
| V | Conditions of Contract |
| VI | Contract Data |
| VII | Specifications |
| VIII | Drawings |
| IX | Bill of Quantities |
| X | Forms of Securities |
- 8.2 Three copies of Sections IV, IX, and X are supplied to the prospective Bidder. The number of copies to be completed and returned with the Bid is specified in the Bidding Data.

- 9. Clarification of Bidding Documents** 9.1 A prospective Bidder requiring any clarification of the bidding documents may notify the Employer in writing or by cable (“cable” includes telex, e-mail and facsimile) at the Employer’s address indicated in the invitation to bid. The Employer will respond to any request for clarification received earlier than 21 days prior to the deadline for submission of bids. Copies of the Employer’s response will be forwarded to all purchasers of the bidding documents, including a description of the inquiry, but without identifying its source.
- 10. Amendment of Bidding Documents** 10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addenda.
- 10.2 Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing or by cable to all purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum in writing or by cable to the Employer.
- 10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer shall extend, as necessary, the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

C. Preparation of Bids

- 11. Language of Bid** 11.1 All documents relating to the Bid shall be in the English language unless otherwise specified in the Bidding Data.
- 12. Documents Comprising the Bid** 12.1 The Bid submitted by the Bidder shall comprise the following:
- (a) The Bid (in the format indicated in Section IV);
 - (b) Bid Security;
 - (c) Priced Bill of Quantities;
 - (d) Qualification Information Form and Documents;
 - (e) Alternative offers where invited;
- and any other materials required to be completed and submitted by bidders, as specified in the Bidding Data.
- 13. Bid Prices** 13.1 The Contract shall be for the whole Works, as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.
- 13.2 The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items for which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.

- 13.3 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates, prices, and total Bid price submitted by the Bidder.
- 13.4 The rates and prices quoted by the Bidder shall not be subject to adjustment during the performance of the Contract unless provided for in the Bidding and Contract Data and the provisions of Clause 47 of the Conditions of Contract. The Bidder shall submit with the Bid all the information required under the Contract Data and Clause 47 of the Conditions of Contract.
- 14. Currencies of Bid and Payment**
- 14.1 The unit rates and prices shall be quoted by the Bidder entirely in Leones. Where indicated in the Bidding Data, payment may be partially made in foreign currencies. Foreign currency requirements shall be indicated as a percentage of the Bid price (excluding provisional sums) and shall be payable at the option of the Bidder in foreign currencies in accordance with the limitations stated in the Bidding Data.
- 14.2 Where applicable, the rates of exchange to be used by the Bidder in arriving at the Leone equivalent and the percentage(s) mentioned in paragraph. 14.1 above shall be the selling rates for similar transactions established by the authority specified in the Contract Data prevailing on the date 28 days prior to the latest deadline for submission of bids. These exchange rates shall apply for all payments so that no exchange risk will be borne by the Bidder. If the Bidder uses other rates of exchange, the provisions of Clause 28.1 shall apply. In any case, payments will be computed using the rates quoted in the Bid.
- 14.3 Where applicable, Bidders shall indicate details of their expected foreign currency requirements in the Bid.
- 14.4 Where applicable, Bidders may be required by the Employer to clarify their foreign currency requirements and to substantiate that the amounts included in the rates and prices and in the Contract Data are reasonable and responsive to Sub-Clause 14.1.
- 15. Bid Validity**
- 15.1 Bids shall remain valid for the period specified in the Bidding Data.
- 15.2 In exceptional circumstances, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing. A Bidder may refuse the request without forfeiting the Bid Security. A Bidder agreeing to the request will not be required or permitted to otherwise modify the Bid, but will be required to extend the validity of Bid Security for the period of the extension, and in compliance with Clause 16 in all respects.

15.3 In the case of contracts in which the Contract Price is fixed (not subject to price adjustment), if the period of bid validity is extended beyond 60 days, the amounts payable in local and foreign currency to the Bidder selected for award, shall be increased by applying to both the local and the foreign currency component of the payments, respectively, the factors specified in the Bidding Data or in the request for extension, for the period of delay beyond 60 days after the expiry of the initial bid validity, up to the notification of award. Bid evaluation will be based on the Bid prices without taking the above correction into consideration.

16. Bid Security

16.1 The Bidder shall furnish, as part of the Bid, a Bid Security in Leones or in a freely convertible currency, in the amount or the equivalent amount specified in the Bidding Data.

16.2 The Bid Security shall, at the Bidder's option, be in the form of a certified banker's cheque or a bank guarantee from a reputable bank or credible Financial Institution located in the Republic of Sierra Leone. Bank guarantees issued by foreign banks shall only be acceptable if endorsed by a correspondent bank in the Republic of Sierra Leone. The format of the Bid Security should be in accordance with the form of Bid Security included in Section X. Bid Security shall be valid for a minimum of 28 days beyond the validity of the Bid.

16.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer. The Bid Security of a joint venture must define as "bidder" all joint venture partners and list them in the following manner: a joint venture consisting of "_____", "_____", and "_____".

16.4 The Bid Security of unsuccessful bidders will be returned within 28 days of the end of the Bid validity period specified in Sub-Clause 15.1.

16.5 The Bid Security of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Performance Security.

16.6 The Bid Security may be forfeited

- (a) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;
- (b) if the Bidder does not accept the correction of the Bid price, pursuant to Clause 27; or

- (c) in the case of a successful Bidder, if the Bidder fails within the specified time limit to
 - (i) sign the Agreement; or
 - (ii) furnish the required Performance Security.

17. Alternative Proposals by Bidders

17.1 Bidders shall submit offers that comply with the requirements of the bidding documents, including the basic technical design as indicated in the drawings and specifications. Alternatives will not be considered, unless specifically allowed in the Bidding Data. If so allowed, Sub-Clause 17.2 shall govern.

17.2 If so allowed in the Bidding Data, bidders wishing to offer technical alternatives to the requirements of the bidding documents must also submit a Bid that complies with the requirements of the bidding documents, including the basic technical design as indicated in the drawings and specifications. In addition to submitting the basic Bid, the Bidder shall provide all information necessary for a complete evaluation of the alternative by the Employer, including design calculations, technical specifications, breakdown of prices, proposed construction methods and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.

18. Format and Signing of Bid

18.1 The Bidder shall prepare one original of the documents comprising the Bid as described in Clause 12 of these Instructions to Bidders, bound with the volume containing the Form of Bid, and clearly marked "ORIGINAL." In addition, the Bidder shall submit copies of the Bid, in the number specified in the Bidding Data, and clearly marked as "COPIES." In the event of discrepancy between them, the original shall prevail.

18.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorised to sign on behalf of the Bidder, pursuant to Sub-Clauses 4.3(a) or 4.4(b), as the case may be. All pages of the Bid where entries or amendments have been made shall be initialled by the person or persons signing the Bid.

18.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Bidder, in which case such corrections shall be initialled by the person or persons signing the Bid.

18.4 The Bidder shall furnish information as described in the Form of

Bid on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.

D. Submission of Bids

19. Sealing and Marking of Bids

19.1 The Bidder shall seal the original and all copies of the Bid in two inner envelopes, and one outer envelope sealed with red wax, duly marking the inner envelopes as “ORIGINAL” and “COPIES”.

19.2 The inner and outer envelopes shall

- (a) be addressed to the Employer at the address provided in the Bidding Data;
- (b) bear the name and procurement number of the Contract as defined in the Bidding and Contract Data; and
- (c) provide a warning not to open before the specified time and date for Bid opening as defined in the Bidding Data.

19.3 In addition to the identification required in Sub-Clause 19.2, the inner envelopes shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared late, pursuant to Clause 21.

19.4 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

20. Deadline for Submission of Bids

20.1 Bids shall be delivered to the Employer at the address specified above no later than the time and date specified in the Bidding Data.

20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Late Bids

21.1 Any Bid received by the Employer after the deadline prescribed in Clause 20 will be returned unopened to the Bidder.

22. Modification and Withdrawal of Bids

22.1 Bidders may modify or withdraw their bids by giving notice in writing before the deadline prescribed in Clause 20.

22.2 Any modification or withdrawal notices shall be prepared, sealed, marked, and delivered in accordance with Clauses 18 and 19, with the outer and inner envelopes additionally marked

“MODIFICATION” or “WITHDRAWAL,” as appropriate.

- 22.3 No Bid may be modified after the deadline for submission of Bids.
- 22.4 Withdrawal of a Bid between the deadline for submission of bids and the expiration of the period of Bid validity specified in the Bidding Data or as extended pursuant to Sub-Clause 15.2 may result in the forfeiture of the Bid Security pursuant to Clause 16.
- 22.5 Bidders may only offer discounts to, or otherwise modify the prices of their bids by inclusion in the original Bid submission or by submitting Bid modifications in accordance with this clause.

E. Bid Opening and Evaluation

23. Bid Opening

- 23.1 The Employer will open the bids, including modifications made pursuant to Clause 22, in the presence of the bidders’ representatives who choose to attend at the time and in the place specified in the Bidding Data.
- 23.2 Envelopes marked “WITHDRAWAL” shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 22 shall not be opened.
- 23.3 The bidders’ names, the Bid prices, the total amount of each Bid and of any alternative Bid (if alternatives have been requested or permitted), any discounts, Bid modifications and withdrawals, the presence or absence of Bid Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.
- 23.4 The Employer will prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 23.3.

24. Process to Be Confidential

- 24.1 Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced.

25. Clarification of Bids and Contacting the Employer

- 25.1 To assist in the examination, evaluation, and comparison of bids, the Employer may ask any Bidder for clarification of its Bid, including breakdowns of unit rates. Requests for clarification and the response shall be in writing or by cable, telex, or facsimile, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the

evaluation of the bids in accordance with Clause 27.

25.2 From the time of bid opening to the time of contract award, if any bidder wishes to contact the Employer on any matter related to the bid, it should do so in writing.

25.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders' bid.

26. Examination of Bids and Determination of Responsiveness

26.1 Prior to the detailed evaluation of bids, the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3; (b) has been properly signed; (c) is accompanied by the required Bid Security; and (d) is substantially responsive to the requirements of the bidding documents.

26.2 A substantially responsive bid is one which conforms to all the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

27. Correction of Errors

27.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

- (a) where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
- (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern, and the unit rate will be corrected.

27.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and shall be considered as binding upon the Bidder. If the

Bidder does not accept the corrected amount, the Bid will be rejected, and the Bid Security may be forfeited in accordance with Sub-Clause 16.6(b).

- 28. Currency for Bid Evaluation**
- 28.1 Bids will be evaluated as quoted in Leones in accordance with Sub-Clause 14.1, unless a Bidder has used different exchange rates than those prescribed in Sub-Clause 14.2, in which case the Bid will be first converted into the amounts payable in different currencies using the rates quoted in the Bid and then reconverted to Leones using the exchange rates prescribed in Sub-Clause 14.2.
- 29. Evaluation and Comparison of Bids**
- 29.1 The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 26.
- 29.2 In evaluating the bids, the Employer will determine for each Bid the evaluated Bid price by adjusting the Bid price as follows:
- (a) making any correction for errors pursuant to Clause 27;
 - (b) excluding provisional sums and the provision, if any, for contingencies in the Bill of Quantities, but including Dayworks, where priced competitively;
 - (c) making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with Clause 17; and
 - (d) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub-Clause 22.5.
- 29.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the bidding documents or otherwise result in unsolicited benefits for the Employer will not be taken into account in Bid evaluation.
- 29.4 The estimated effect of any price adjustment conditions under Clause 47 of the Conditions of Contract, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.
- 29.5 In the case of several lots, pursuant to Clause 29.2(d), the Employer will determine the application of discounts so as to minimise the combined cost of all the lots.
- 30. Preference for Domestic**
- 30.1 If so indicated in the Bidding Data, domestic contractors may receive a margin of preference in Bid evaluation, for which this

Bidders

clause shall apply.

30.2 Domestic bidders shall provide all evidence necessary to prove that they meet the following criteria to be eligible for a margin of domestic preference in the comparison of their bids with those of bidders who do not qualify for the preference. They should

- (a) be registered within the Republic of Sierra Leone;
- (b) have majority ownership by nationals of the Republic of Sierra Leone;
- (c) not subcontract more than 10 percent of the Contract Price including provisional sums to foreign contractors; and
- (d) satisfy any other criteria specified for the purpose of domestic preference eligibility, as specified in the Bidding Data.

30.3 Joint ventures of domestic firms may be eligible for the margin of preference provided that:

- (a) the individual partners satisfy the criteria of eligibility of Sub-Clause 30.2 (a) and (b);
- (b) the joint venture shall be registered in the Republic of Sierra Leone;
- (c) the joint venture shall not subcontract more than 10 percent of the Contract Price, excluding provisional sums, to foreign firms; and
- (d) satisfy any other criteria specified for the purpose of domestic preference eligibility, as specified in the Bidding Data.

30.4 The following procedure will be used to apply the margin of preference:

- (a) Responsive bids will be classified into the following groups:
 - (i) Group A: bids offered by domestic bidders and joint ventures meeting the respective criteria of Sub-Clauses 30.2 and 30.3 above; and
 - (ii) Group B: all other bids.
- (b) For the purpose of evaluation and comparison of bids only,

an amount equal to the percentage stated in the Bidding Data of the evaluated Bid prices determined in accordance with Clause 29.2(a), (b), and (d), will be added to all bids classified in Group B.

F. Award of Contract

- 31. Award Criteria**
- 31.1 Subject to Clause 32, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid price, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of Clause 3, and (b) qualified in accordance with the provisions of Clause 4.
- 32. Employer's Right to Accept any Bid and to Reject any or all Bids**
- 32.1 Notwithstanding Clause 31, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.
- 33. Notification of Award and Signing of Agreement**
- 33.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex, or facsimile and confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").
- 33.2 The notification of award will constitute the formation of the Contract, subject to the Bidder furnishing the Performance Security in accordance with Clause 34 and signing the Agreement in accordance with Sub-Clause 33.3.
- 33.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and sent to the successful Bidder, within 14 days following the notification of award along with the Letter of Acceptance. Within 14 days of receipt, the successful Bidder will sign the Agreement and deliver it to the Employer.
- 33.4 Upon the furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other bidders that their bids have been unsuccessful.

- 34. Performance Security**
- 34.1 Within 14 days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in the amount stipulated in the Contract Data in the form of a Bank Guarantee, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the Conditions of Contract.
- 34.2 The Bank Guarantee shall be issued either (a) at the Bidder's option, by a bank located in the Republic of Sierra Leone or a foreign bank through a correspondent bank located in the Republic of Sierra Leone, or (b) with the agreement of the Employer directly by a foreign bank acceptable to the Employer.
- 34.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 34.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.
- 35. Advance Payment and Security**
- 35.1 The Employer will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to a maximum amount of 50%.
- 36. Adjudicator**
- 36.1 The Employer proposes the person named in the Bidding Data to be appointed as Adjudicator under the Contract, at an hourly fee specified in the Bidding Data, plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If, in the Letter of Acceptance, the Employer has not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed by the Appointing Authority designated in the Contract Data at the request of either party.
- 37. Corrupt or Fraudulent Practices**
- 37.1 The Government of Sierra Leone requires that Employers as well as Bidders/Suppliers/Contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Government:
- (a) defines, for the purposes of this provision, the terms set forth below as follows:
- (i) "corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution; and
- (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free

and open competition;

- (b) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- (c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a Government contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government contract.

37.2 Furthermore, Bidders shall be aware of the provision stated in sub-clause 23.2 and sub-clause 59.2 of the Conditions of Contract.

Section III. Bidding Data

Instructions to Bidders Clause Reference

- ITB Clause 2.1** Funding for the Contract is provided by the Bank of Sierra Leone
- ITB Clause 3.1** All countries and territories which are member states of the United Nations are eligible,
- ITB Clause 4.5a** The minimum required annual volume of construction work for the successful Bidder in any of the last five years is Le 3,000,000,000.00 (Three Billion Leones) or *an equivalent in a freely convertible foreign currency*.
- ITB Clause 4.5c** The essential equipment required for the Works is:
- a) Tippers
 - b) Trucks
 - c) Concrete Mixer
 - d) Loaders
 - e) Crane/lifting equipment
 - f) Metal Scaffolding
 - g) Glass remover/finishing equipment etc.
- ITB Clause 4.5d** The Key Personnel required for the performance of the contract and their minimum qualifications and experience are:
- a) **Project Manager**- An architect or Engineer with a minimum of Bachelor's Degree with 10 years post qualification experience and must be member of recognised Professional Institution,
 - b) **Resident Architect or Engineer**- with a Minimum of Bachelor's Degree with 7 years post qualification experience and must be a member of recognised Professional Institution,
 - c) **Site Supervisor**- with a degree/High national Diploma in Building or Engineering with 7 years post qualification experience,
 - d) **Foreman**- with a Higher National Diploma in Building Engineering with a minimum of 5 years post qualification experience
- ITB Clause 8.2 (18.1)** The number of copies of the Bid to be submitted is three [3] in addition to the original of the Bid.

- ITB Clause 15.1** The period of Bid validity shall be 120 days after the deadline for submission of bids.
- ITB Clause 16.1** The amount of Bid Security shall be not less than Le 200,000,000.00 (Two hundred Million Leones) or equivalent in a freely convertible currency.
- ITB Clause 17.1** Alternative proposals to the requirements of the bidding documents will not be permitted.
- ITB Clause 19.2(a)** The address for the submission of bids is Head, Procurement Unit, 8th Floor, Main Bank Building, Siaka Stevens Street, Freetown.
- ITB Clause 19.2(b)** The Name and Procurement Number of the Contract is Rehabilitation of the Kenema Branch Building, Hangha Road/Dama Road, Kenema City, Eastern Province, Sierra Leone, West Africa.
- ITB Clause 19.2(c)** The time and date for bid opening is 12th September 2013 at 12:05 pm (Sierra Leone Time).
- ITB Clause 20.1** The deadline for submission of bids is 12th September 2013 at 12:00 noon (Sierra Leone Time).
- The date of the exchange rate is 28 days before the deadline for submission of bids.
- The authority for establishing the rates of exchange shall be the Central Bank of Sierra Leone.
- ITB Clause 30.1** Domestic contractors will *not* receive a margin of preference in Bid evaluation.

Section IV. Forms of Bid, Qualification Information, Letter of Acceptance and Agreement

Contractor's Bid

Notes on Form of Contractor's Bid

The Bidder shall fill in and submit this Bid form with the Bid. Additional details on the price should be inserted if the Bid is in various currencies. If the Bidder objects to the Adjudicator proposed by the Employer in the bidding documents, he should so state in his Bid, and present an alternative candidate, together with the candidate's daily fees and biographical data, in accordance with Clause 36 of the Instructions to Bidders.

(letterhead paper of the bidder)

[date]

To: *[name and address of Employer]*

We offer to execute the *[name and procurement number of Contract]* in accordance with the Conditions of Contract accompanying this Bid for the Contract Price of *[amount in numbers]*, *[amount in words]* *[name of currency]*.

The Contract shall be paid in the following currencies:

Currency	Percentage payable in currency	Rate of exchange: one foreign equals <i>[rate]</i> Leones	Inputs for which foreign currency is required
(a)			
(b)			
(c)			

The advance payment required is:

Amount	Currency
(a)	
(b)	
(c)	

This Bid and your written acceptance of it shall constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Bid you receive.

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount and Currency	Purpose of Commission or gratuity
_____	_____	_____
_____	_____	_____
_____	_____	_____

(if none, state "none")."

We hereby confirm that this Bid complies with the Bid Validity and Bid Security required by the bidding documents and specified in the Bidding Data.

Authorised Signature: _____

Name and Title of Signatory: _____

Name of Bidder: _____

Address: _____

Qualification Information

Notes on Form of Qualification Information

The information to be filled in by bidders in the following pages will be used for purposes of postqualification or for verification of prequalification as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract. Attach additional pages as necessary. Pertinent sections of attached documents should be translated into the language of the Bid. If used for prequalification verification, the Bidder should fill in updated information only.

1. Individual Bidders or Individual Members of Joint Ventures

- 1.1 Constitution or legal status of Bidder: *[attach copy]*
 Place of registration: *[insert]*
 Principal place of business: *[insert]*
 Power of attorney of signatory of Bid: *[attach]*
- 1.2 Total annual volume of construction work performed in five years: *[insert figure in Leones or an equivalent in a freely convertible foreign currency]*
- 1.3 Work performed as prime Contractor on works of a similar nature and volume over the last five years. The values should be indicated in the same currency used for Item 1.2 above. Also list details of work under way or committed, including expected completion date.

Project name and country	Name of client and contact person	Type of work performed and year of completion	Value of contract
(a)			
(b)			
(c)			

- 1.4 Major items of Contractor's Equipment proposed for carrying out the Works. List all information requested below. Refer also to Sub-Clause 4.3(d) of the Instructions to Bidders.

Item of equipment	Description, make, and age (years)	Condition (new, good, poor) and number available	Owned, leased (from whom?), or to be purchased (from whom?)
(a)			
(b)			
(c)			

- 1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data. Refer also to Sub-Clause 4.3(e) of the Instructions to Bidders and Sub-Clause 9.1 of the Conditions of Contract.

Position	Name	Years of experience (general)	Years of experience in proposed position
(a)			
(b)			
(c)			

- 1.6 Proposed subcontracts and firms involved. Refer to Clause 7 of Conditions of Contract.

Sections of the Works	Value of subcontract	Subcontractor (name and address)	Experience in similar work
(a)			
(b)			
(c)			

- 1.7 Financial reports for the last five years: balance sheets, profit and loss statements, auditors' reports, etc. List below and attach copies.

- 1.8 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of support documents.

- 1.9 Name, address, and telephone, telex, and facsimile numbers of banks that may provide references if contacted by the Employer.

- 1.10 Information on current litigation in which the Bidder is involved.

Other party(ies)	Cause of dispute	Amount involved
(a)		
(b)		
(c)		

- 1.11 Statement of compliance with the requirements of Sub-Clause 3.2 of the Instructions to Bidders.

- 1.12 Proposed Program (work method and schedule). Descriptions, drawings, and charts, as necessary, to comply with the requirements of the bidding documents.

- 2. Joint Ventures**
- 2.1 The information listed in 1.1 - 1.11 above shall be provided for each partner of the joint venture.
 - 2.2 The information in 1.12 above shall be provided for the joint venture.
 - 2.3 Attach the power of attorney of the signatory(ies) of the Bid authorising signature of the Bid on behalf of the joint venture.
 - 2.4 Attach the Agreement among all partners of the joint venture (and which is legally binding on all partners), which shows that:
 - (a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
 - (b) one of the partners will be nominated as being in charge, authorised to incur liabilities, and receive instructions for and on behalf of any and all partners of the joint venture; and
 - (c) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.
- 3. Additional Requirements**
- 3.1 Bidders should provide any additional information required in the Bidding Data or to fulfil the requirements of Sub-Clause 4.1 and Clause 30 of the Instructions to Bidders, if applicable.

Letter of Acceptance
[letterhead paper of the Employer]

Notes on Standard Form of Letter of Acceptance

The Letter of Acceptance will be the basis for formation of the Contract as described in Clauses 33 and 34 of the Instructions to Bidders. This Standard Form of Letter of Acceptance should be filled in and sent to the successful Bidder only after evaluation of bids has been completed and Bid Evaluation Committee approval to the evaluation report and award of contract is granted.

[date]

To: *[name and address of the Contractor]*

This is to notify you that your Bid dated *[date]* for execution of the *[name of the Contract and Procurement Number, as given in the Contract Data]* for the Contract Price of *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted.

- (a) We accept that *[name proposed by bidder]* be appointed as the Adjudicator.¹
or
(b) We do not accept that *[name proposed by bidder]* be appointed as adjudicator, and by sending a copy of this letter of acceptance to *[insert the name of the Appointing Authority]*, we are hereby requesting *[name]*, the Appointing Authority, to appoint the Adjudicator in accordance with Clause 36.1 of the Instructions to Bidders.²

You are requested to submit the Performance Security of *[amount in numbers and in words]* Leones, and attend at *[address]* on *[date]* at *[time]* hours for signature of the Contract.

Authorised Signature: _____

Name and Title of Signatory: _____

Name of Employer: _____

Attachment: Agreement

¹ To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the Instructions to Bidders, and has accordingly offered another candidate. If the Employer does not accept the counterproposal, the sentence should so state, and be followed by an additional sentence: "We therefore shall request the *[name of Appointing Authority as named in the Contract Data]* to appoint the Adjudicator in accordance with Clause 36 of the Instructions to Bidders."

² To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the Instructions to Bidders, and has accordingly offered another candidate. If the Employer does not accept the counterproposal, the sentence should so state, and be followed by an additional sentence: "We therefore shall request the *[name of Appointing Authority as named in the Contract Data]* to appoint the Adjudicator in accordance with Clause 36 of the Instructions to Bidders."

Agreement

This Agreement, made the [day] day of [month], [year] between [name and address of Employer] (hereinafter called “the Employer”) and [name and address of Contractor] (hereinafter called “the Contractor”) of the other part.

Whereas the Employer is desirous that the Contractor execute [name and Procurement Number of Contract] (hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein for the sum of [Contract Price in numbers and words in Leones] (hereinafter called “the Contract Price”).

Now this Agreement witnesseth as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. The following documents shall be deemed to form and be read and construed as part of this agreement, viz:
 - (a) Agreement,
 - (b) Letter of Acceptance,
 - (c) Contractor’s Bid,
 - (d) Contract Data,
 - (e) Conditions of Contract,
 - (f) Specifications,
 - (g) Drawings,
 - (h) Bill of Quantities,³ and
 - (i) any other document listed in the Contract Data as forming part of the Contract.
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____
was hereunto affixed in the presence of: _____

Signed, Sealed, and Delivered by the said _____
in the presence of: _____

Binding Signature of Employer _____

Binding Signature of Contractor _____

³ In lump sum contracts, delete “Bill of Quantities” and replace with “Activity Schedule”.

Section V. Conditions of Contract

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Conditions of Contract

A. General

1. Definitions

1.1 Boldface type is used to identify defined terms.

Activity Schedule means the priced and completed Activity Schedule forming part of the Bid for a Lump Sum Contract

The **Adjudicator** is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in Clauses 24 and 25 hereunder.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid for an Admeasurement (Unit Price) Contract.

Compensation Events are those defined in Clause 44 hereunder.

The **Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with Sub-Clause 55.1.

The **Contract** is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in Clause 2.3 below.

The **Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The **Contractor's Bid** is the completed bidding document submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; months are calendar months.

Dayworks are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects Liability Certificate** is the certificate issued by Project Manager upon correction of defects by the Contractor.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

Drawings include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

The **Employer** is the party who employs the Contractor to carry out the Works.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Project Manager, following approval of the Employer, by issuing an approved extension of time or an acceleration order.

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

Plant is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

The **Project Manager** is the person named in the Contract Data (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the day-to-day operation of the Contract.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

The **Start Date** is given in the Contract Data. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a person or corporate body who has a

Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Project Manager which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, and hand over to the Employer, as defined in the Contract Data.

- 2. Interpretation**
- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.
- 2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
- (1) Agreement,
 - (2) Letter of Acceptance,
 - (3) Contractor's Bid,
 - (4) Contract Data,
 - (5) Conditions of Contract,
 - (6) Specifications,
 - (7) Drawings,
 - (8) Bill of Quantities, and
 - (9) any other document listed in the Contract Data as forming part of the Contract.
- 3. Language and Law**
- 3.1 The language of the Contract is English and the law governing the Contract is the law of the Republic of Sierra Leone unless otherwise stated in the Contract Data.
- 4. Project Manager's Decisions**
- 4.1 Except where otherwise specifically stated, the Project Manager will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

- 4.2 The Project Manager shall obtain specific approval from the Employer before carrying out any of his duties under the Contract which in the Project Manager's opinion will cause the total amount finally due under the Contract to exceed the Contract Price or will give entitlement to an extension of time. This requirement shall be waived in an emergency affecting safety of personnel or the Works or adjacent property.
- 5. Delegation** 5.1 The Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.
- 6. Communications** 6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.
- 7. Subcontracting** 7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.
- 8. Other Contractors** 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the Contract Data. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.
- 9. Personnel** 9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the Contract Data, to carry out the functions stated in the Schedule or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Schedule.
- 9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating valid reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
- 10. Employer's and Contractor's** 10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

Risks**11. Employer's Risks**

11.1 From the Start Date until the Defects Correction Certificate has been issued, the following are Employer's risks:

- (a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
 - (ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.
- (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the Republic of Sierra Leone.

11.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer's risk except loss or damage due to

- (a) a Defect which existed on the Completion Date,
- (b) an event occurring before the Completion Date, which was not itself an Employer's risk, or
- (c) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

12.1 From the Starting Date until the Defects Correction Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risks are Contractor's risks.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts stated in the Contract Data for the following events which are due to the Contractor's risks:

- (a) loss of or damage to the Works, Plant, and Materials;

- (b) loss of or damage to Equipment;
 - (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract;
 - (d) personal injury or death, and
 - (e) any other insurance as specified in the Contract Data.
- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due to the Employer.
- 13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.
- 13.5 Both parties shall comply with any conditions of the insurance policies.
- 14. Site Investigation Reports**
- 14.1 The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the Contract Data, supplemented by any information available to the Bidder.
- 15. Queries about the Contract Data**
- 15.1 The Project Manager will clarify queries on the Contract Data.
- 16. Contractor to Construct the Works**
- 16.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.
- 17. The Works to Be Completed by the Intended Completion Date**
- 17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.
- 18. Approval by the Project**
- 18.1 The Contractor shall submit Specifications and Drawings showing proposed Temporary Works to the Project Manager,

- Manager** who is to approve them if they comply with the Specifications and Drawings.
- 18.2 The Contractor shall be responsible for design of Temporary Works.
- 18.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of Temporary Works.
- 18.4 The Contractor shall obtain approval of third parties to the design of Temporary Works, where required.
- 18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.
- 19. Safety** 19.1 The Contractor shall be responsible for the safety of all activities on the Site.
- 20. Discoveries** 20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.
- 21. Possession of the Site** 21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data, the Employer will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event.
- 22. Access to the Site** 22.1 The Contractor shall allow the Project Manager and any person authorised by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.
- 23. Instructions Inspection and Audits** 23.1 The Contractor shall carry out all instructions of the Project Manager providing they comply with the applicable laws of the Republic of Sierra Leone.
- 23.2 The Contractor shall permit the Government of Sierra Leone to inspect the Contractor's accounts and records relating to the performance of the Contract and to have them audited by auditors appointed by the Government, if so required by the Government.
- 24. Disputes** 24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the issue shall be referred to the Employer's Head of Entity for

review. If an agreed resolution is not achieved within 14 days of the complaint by the Contractor, the issue shall be referred to the Adjudicator for decision.

25. Procedure for Disputes

- 25.1 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute, providing he has been timely provided with all the relevant information.
- 25.2 The Adjudicator shall be paid by the hour at the rate specified in the Bidding Data and Contract Data, together with reimbursable expenses of the types specified in the Contract Data, and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision will be final and binding.
- 25.3 The arbitration shall be conducted in accordance with the arbitration procedure published by the institution named and in the place shown in the Contract Data.

26. Replacement of Adjudicator

- 26.1 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator will be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the Contract Data at the request of either party, within 14 days of receipt of such request.

B. Time Control

27. Program

- 27.1 Within the time stated in the Contract Data, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 27.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.
- 27.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until

the next payment after the date on which the overdue Program has been submitted.

27.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

28. Extension of the Intended Completion Date

28.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost. Approval of any such extension of time is subject to the provisions of Clause 4.2 herein.

28.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

29. Acceleration

29.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager will obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date will be adjusted accordingly and confirmed by both the Employer and the Contractor.

29.2 If the Contractor's priced proposals for acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.

30. Delays Ordered by the Project Manager

30.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

31. Management Meetings

31.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

31.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Employer. The responsibility of the parties

for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

- 32. Early Warning** 32.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 32.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

- 33. Identifying Defects** 33.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.
- 34. Tests** 34.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.
- 35. Correction of Defects** 35.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 35.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.
- 36. Uncorrected Defects** 36.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

D. Cost Control

- 37. Bill of Quantities**
- 37.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.
- 37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.
- 38. Changes in the Quantities**
- 38.1 If the final quantity of the work done exceeds or falls short of the quantity set out in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate or price to allow for the change subject to the provisions of Clause 4.2 herein.
- 38.2 The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 10 percent, except with the prior written approval of the Employer.
- 38.3 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.
- 39. Variations**
- 39.1 All Variations shall be included in updated Programs produced by the Contractor.
- 40. Payments for Variations**
- 40.1 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.
- 40.2 If the work in the Variation corresponds with an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

40.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and recommend to the Employer a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

40.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

40.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

41. Cash Flow Forecasts

41.1 When the Program is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

42. Payment Certificates

42.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

42.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

42.3 The value of work executed shall be determined by the Project Manager.

42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

42.5 The value of work executed shall include the valuation of Variations and Compensation Events.

42.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

43. Payments

43.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 45 days of the *date of each certificate*. *If the Employer makes a late payment, the Contractor shall be entitled to claim interest on the late payment at the rate stated in the Contract Data.*

43.2 If an amount certified is increased in a later certificate or as a

result of an award by the Adjudicator or an Arbitrator, the Contractor shall be entitled to claim interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

43.3 Unless otherwise stated, all payments and deductions will be paid or charged in the proportions of currencies comprising the Contract Price.

43.4 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

44. Compensation Events

44.1 The following shall be Compensation Events:

- (a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.
- (b) The Employer modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.
- (c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
- (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
- (e) The Project Manager unreasonably does not approve a subcontract to be let.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issue of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.
- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
- (h) Other contractors, public authorities, utilities, or the Employer do not perform work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The advance payment is delayed.

- (j) The effects on the Contractor of any of the Employer's Risks.
- (k) The Project Manager or Employer unreasonably delays issuing a Certificate of Completion.
- (l) Other Compensation Events described in the Contract or determined by the Project Manager shall apply.

44.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly following approval by the Employer. If the Contractor's forecast is deemed unreasonable, the Project Manager shall recommend adjustment of the Contract Price based on the Project Manager's own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.

44.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

45. Tax

45.1 The Employer shall adjust the Contract Price on the recommendation of the Project Manager if taxes, duties, and other levies are changed within the Republic of Sierra Leone between the date 28 days before the submission of bids for the Contract and the date of the final Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of Clause 47.

46. Currencies

46.1 Where payments are made in currencies other than Leones, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Bid.

47. Price Adjustment

47.1 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for and in the manner detailed in the Contract Data. If so provided, the amounts certified in each payment certificate shall be adjusted in accordance with the price adjustment

provisions given in the Contract Data.

48. Retention

48.1 The Employer shall retain from each payment due to the Contractor the retention percentage stated in the Contract Data until Completion of the whole of the Works.

48.2 On completion of the whole of the Works, half of the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected.

48.3 On completion of the whole Works, the Contractor may substitute retention money with an “on demand” Bank guarantee.

49. Liquidated Damages

49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor’s liabilities.

49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in Sub-Clause 43.1.

50. Bonus

50.1 Unless otherwise stated in the Contract Data, the Contractor shall not be paid a bonus for early completion of the Works.

51. Advance Payment

51.1 The Employer shall make advance payment to the Contractor of the amounts stated in the Contract Data by the date stated in the Contract Data, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest will not be charged on the advance payment.

51.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilisation expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project

Manager.

51.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

52. Securities

52.1 The Performance Security in the form of an unconditional Bank Guarantee given in the bidding documents shall be provided to the Employer no later than the date specified in the Letter of Acceptance. The Bank Guarantee shall be issued either (a) by a bank located in the Republic of Sierra Leone or a foreign bank through a correspondent bank located in the Republic of Sierra Leone, or (b) with the agreement of the Employer directly by a foreign bank acceptable to the Employer. The Guarantee shall be denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 days after the date of issue of the Certificate of Completion.

53. Dayworks

53.1 If applicable, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

53.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.

53.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

54. Cost of Repairs

54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

55. Completion

55.1 The Contractor shall request the Project Manager to issue a certificate of Completion of the Works, and the Project Manager will do so upon both the Project Manager and the Employer deciding that the work is completed.

56. Taking Over

56.1 The Employer shall take over the Site and the Works within

seven days of the issue of a Certificate of Completion.

- 57. Final Account** 57.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.
- 58. Operating and Maintenance Manuals** 58.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.
- 58.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount stated in the Contract Data from payments due to the Contractor.
- 59. Termination** 59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 59.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:
- (a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorised by the Project Manager;
 - (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;
 - (c) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
 - (d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 90 days of the date of the Project Manager's certificate;
 - (e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period

of time determined by the Project Manager;

- (f) the Contractor does not maintain a Security, which is required; and
- (g) at any time during the Contract, the Contractor has delayed the completion of the Works, as measured by the Program, by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the Contract Data.
- (h) if the Contractor, in the judgement of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph:

“corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

“fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

59.3 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under Sub-Clause 59.2 above, the Project Manager shall decide whether the breach is fundamental or not.

59.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

59.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

60. Payment upon Termination

60.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

60.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

61. Property

61.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.

62. Release from Performance

62.1 If the Contract is frustrated by the outbreak of war or by any other event of force majeure entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

Section VI. Contract Data

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- CC Clause 1.1** **Contract:** The name and Procurement Number of the Contract are Rehabilitation of Kenema Branch Building, Dama Road, Kenema City, Sierra Leone, West Africa- BSL/GSD/2013/0011.
- Defects Liability Period:** The Defects liability Period is 365 days after completion of the works.
- Employer:** The Employer is Bank of Sierra Leone, Freetown, Sierra Leone, West Africa.
- Intended Completion Date:** The Intended Completion Date for the whole of the Works shall be 18 months from date of site possession.
- Project Manager:** The Project Manager is Tropical Environmental Design Associates (TEDA), 63 Wellington Street, Freetown, Sierra Leone, West Africa.
- Site:** The Site is located at Hangha Road/Dama Road, Kenema City, Sierra Leone, West Africa
- Start Date:** The Start Date shall be the site possession date.
- Works:** The Works consist of general rehabilitation of the building as per the bills of quantities and specifications attached.
- CC Clause 2.3(9)** The following documents also form part of the Contract: e.g. Schedule of Operating and Maintenance Manuals for equipment to be bought under the Mechanical and Electrical component of the bid
- CC Clause 3.1** The Language of the Contract English and the governing law is that of the Republic of Sierra Leone
- CC Clause 9.1** The Schedule of Key Personnel attached at Appendix *[appendix number]* shall form part of the Contract.
- CC Clause 13.1** The minimum insurance covers shall be:
- (a) The minimum insurance cover for the loss of or damage to the Works, Plant and Materials shall be *110% of the value of the Works.*
- (b) In addition the Contractor shall be required to provide all insurance cover including for personal injury or death as required by the laws and regulations of the Republic of Sierra Leone

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- CC Clause 21.1** The Site Possession Date shall be 2 weeks after contract signature
- CC Clause 25.3** Arbitration will be conducted under the rules and regulations of Institute of Engineers of Sierra Leone.
- Arbitration shall take place at. *Freetown, Sierra Leone*
- CC Clause 26.1** Appointing Authority for the Adjudicator is: *The Institute of Engineers of Sierra Leone*
- CC Clause 27.1** The Contractor shall submit a revised Program for the Works within 14 days of delivery of the Letter of Acceptance.
- CC Clause 27.3** The period between Program updates shall be 7 days.
- The amount to be withheld for late submission of an updated Program is 0.05%.of the contract price per week
- CC Clause 35.1** The Defects Liability Period is 365 days after completion of all Works
- CC Clause 48.1** The proportion of payments retained is 10 percent.
- CC Clause 49.1** The maximum amount of liquidated damages for the whole of the Works shall be 10 percent of the final Contract Price.
- CC Clause 51.1** The Advance Payment will be *[insert amount in Leones or as a percentage of the contract value]* and will be paid to the Contractor no later than *[insert date]*.
- CC Clause 52.1** The Performance Security shall be for a maximum amount equivalent to 10 percent of the Contract Price:
- The Performance Security shall be an Unconditional Bank Guarantee in the form presented in Section 10 of the Bidding Document.
- CC Clause 58.1** The date by which “as built” drawings are required is to be determined by the Project Manager.
- CC 60.1** The percentage to apply to the value of the work not completed, representing the Employer’s additional cost for completing the Works, is to be determined by the Project Manager.

Section VII. Specifications

Insert detailed specifications or issue as a separate volume

TECHNICAL SPECIFICATION – MAIN BANK BUILDING, HANGHA ROAD, KENEMA CITY

DESCRIPTION OF MATERIALS, GOODS, WORKMANSHIP AND PRICING NOTES

1.0 GENERAL

1.1 RESPONSIBILITY

No approval by the Consultants shall in any way relieve the Contractor of his contractual responsibility for the quality of materials and the standard of workmanship in the finished works.

1.2 VARIATIONS

No variations to these Technical Specifications may be made unless approved by the consultants, in writing.

1.3 STANDARD SPECIFICATION

In all instances in which articles and materials specified by reference to a British Standard (BS) specification in these Bills, articles and materials complying with an alternative standard specification may be substituted provided they are:-

- (a) in no respect lower in standard, grade or quality than those specified.
- (b) similar in size and shape to those described.
- (c) equally suitable for the purpose for which they are required.
- (d) approved in writing by the Consultant prior to their incorporation into the Works.

Description of materials, goods and workmanship given in any one work section shall apply equally to all work sections, unless otherwise described.

All materials, goods and workmanship shall comply with the requirements and recommendations of the relevant BS or CP where applicable, unless otherwise stated. Any reference in these Bills which is at variance with any provision in a BS or CP shall be deemed to take precedence over and to over ride same.

Notwithstanding any of the foregoing the whole of the materials, goods and workmanship shall be subject to the approval of the Consultant.

1.4 PROPRIETARY ARTICLES OF MATERIALS

In all instances in which articles and materials of a proprietary manufacture are described in these Bills, articles and materials of a different manufacture may be substituted provided they are:-

- (a) similar in design and details, size, shape and quality to those described.
- (b) equally suitable for the purpose for which they are required.

- (c) approved in writing by the Consultant prior to their incorporation into the Work.

1.5 DEFECTIVE MATERIALS OR GOODS

Any materials and goods that have been damaged, contaminated or deteriorated or have not been approved or have been condemned shall be rejected and removed from the site within 24 hours and replaced at the Contractor's expense.

1.6 DEFECTIVE WORK

Any cracked or otherwise defective work, including deviation from the working details in respect of setting out, correct lines and levels, size or thickness of members, shall be removed and reconstructed or otherwise rectified to the approval of the consultant and the Contractor shall be responsible for all additional costs incurred; all such remedial work shall be executed without undue delay.

The Consultant reserves the right to check the work executed by the Contractor and his setting out in such cases and at such times as he may deem fit; there is, however, no duty on his part to make such checks and any failure by him to observe errors shall not relieve the Contractor of his responsibilities in these respects.

2.0 EXCAVATION AND EARTHWORKS, ETC.

2.1 SITE CLEARANCE AND FELLING OF TREES

The Contractor shall include in his prices for clearing the site of all unwanted trees, shrubs, roots, old foundations and materials arising from the site clearances etc., that may be deemed necessary by the Consultant (unless otherwise described).

All trees or shrubs on the site, except as otherwise instructed, shall be carefully preserved and protected from damage during the execution of the works. The Contractor shall be liable for payment of liquidated damages of \$1000 for each tree removed or which is injured, damaged or cut down without the written permission of the Consultant. The Contractor shall comply with the provisions of the Forestry Act of Sierra Leone and of any local relevant regulations and shall give all notices that may be required under such act or regulation.

All the works are to be executed in such manner as to cause the least possible disturbance and in the most careful manner so as to cause the minimum or annoyance and inconvenience to the owners and occupiers of the adjacent premises and to the public. The Contractor must provide for properly watering and all other necessary precautions to minimize dust. Where necessary, the Contractor will be required to provide and erect all necessary dust sheets, tarpaulins, etc.

2.2 NATURE OF THE GROUND

The Contractor is deemed to have visited the site and ascertained the nature of the ground to be excavated and work to be done and must accept all responsibility for the cost of excavation.

The Contractor shall allow for breaking up and removing all obstructions met with in the course of the excavations, including old foundations, drains, etc., and disinfecting wells, septic tanks and cesspits etc. and filling with dry hardcore well consolidated.

Where rock or similar hard natural materials is encountered during the course of excavations the Consultant must be notified immediately so that approval or agreement as to its extent and method of removal is determined before the rock is actually excavated.

2.3 SITE LEVELS

Before commencing any excavation, the Contractor shall satisfy himself that any site levels, whether spot or contour shown on the drawings are correct. If he is not satisfied with the accuracy of these levels, he shall at once give written notice to the Consultant, otherwise no claim will be entertained in respect of the inaccuracy of these levels.

2.4 EXCAVATION MEASUREMENT

The quantities of excavation and filling have been ascertained by taking the net dimensions of the void to the lines and levels shown on the drawing; no allowance has been made for increase in bulk after excavation of for sloping sides or timbering.

2.5 EXCAVATION BEYOND TRUE LINE

No more ground shall be removed than is absolutely necessary and if loose, soft, or bad ground is met, the matter shall be reported at once to the Consultant.

Should the Contractor excavate to a greater depth or width than shown on the drawings or as instructed by the Consultant, at his own expense, he shall fill in such greater depth or width of excavation with concrete as described for foundation.

2.6 OMISSION OF EXCAVATION AND FOUNDATION

Should the presence of rock make excavation for foundation unnecessary to the extent shown on the drawings; the Consultant should be consulted.

2.7 EXCAVATION IN ROCK

Quantities for excavation in rock have been shown as "extra over" the excavation in which rock occurs. Excavations which in the opinion of the Consultants are best carried out by wedges, levers, compressed air or other similar plant, has been described as such.

2.8 SUPPORT OF SIDES OF EXCAVATIONS

The sides of excavations shall be supported using any methods the Contractor elects in such a way as may be sufficient to secure them from falling in and the supports shall be maintained for as long as necessary.

The Contractor will be held responsible for upholding the sides of all excavations and earthworks and no claim for additional excavations, concrete or other material will be considered in this Contract.

2.9 DISPOSAL OF SPOIL

The whole of the spoil arising from the excavation (where not required to be returned for unfilling at once) shall be moved to spoil heaps where required on the site for infilling around foundations or to make up levels under floors and outside lines of building and any surplus is to be removed from the site; filling has been measured separately.

Selected and approved materials from excavation suitable for fill material shall be kept separate for re-use as directed.

Top soil excavated to the required depth shall be deposited on site for reuse as directed by the Consultant.

2.10 PROTECTION OF EXCAVATIONS

The Contractor shall provide all necessary boards or coverings and lay same to protect trenches or excavations from the effect of inclement weather, if so required by the Consultants.

The Contractor shall allow for keeping the excavations free from water by pumping or bailing.

2.11 TERMITE TREATMENT SOLUTION

Termite treatment solution shall be a solution of five percent by weight of sodium pentachlorophenate in water applied by spraying at a rate of 5 litres per square metre to bottoms and sides of excavation, fillings and tops of blockwork.

2.12 APPROVAL OF EXCAVATIONS AND CONCRETING FOUNDATIONS

The Contractor shall report to the Consultants when excavations are ready to receive concrete foundation and shall not proceed with concreting until the excavations have been approved by the Consultants. Any concrete or other work put in before this has been done, shall be removed, if so required, by the Consultants. The Contractor shall not fill in over any work until it has been approved by the Consultants.

2.13 FILLING

Selected material arising from excavation shall be brought back from the place, where it was temporarily deposited, and the trenches or other excavations to be filled, levelled with spoil in layers of not more than 6" (150mm) thickness. Each layer shall be carefully rammed and further consolidated by the addition of water. All filling to raise the level of the site shall be done in similar layers, carefully rammed and consolidated to the satisfaction of the Consultant. The level of compaction shall conform to test 15 of 651377 or an equivalent approved standard.

2.14 HARDCORE

The hardcore shall be selected hard rock laterite, free from rubbish and dust and broken to pass a (75mm) ring with sufficient smaller material to fill interstices and shall be approved by the Consultants.

Lay the hardcore beds in layers of 9” (225 mm). Fill in to make up levels under concrete ground slab. Levels, ram and consolidate the hardcore. Blind surface of hardcore beds with the fine material as specified.

3.0 CONCRETE WORK

3.1 GENERAL

Definitions

The following terms whenever used hereafter, shall be taken to have that meanings assigned to them below.

“Structural props” shall mean those components of the strutting to formwork, which carry the weight of the concrete and will be retained in position when the shuttering is removed from concrete faces.

“Approved of Approval” shall mean, approved by or approval of the Consultants in writing.

“Required” shall mean required by the terms of this Specification or other Contract Documents.

“Satisfaction” shall mean to the satisfaction of the Consultant.

“Testing Authority” shall mean an organization, approved by the Consultants, fully equipped to carry out all tests and checks required by this Specification. It shall be an independent firm or a laboratory.

Reinforced Concrete Design

The reinforced concrete works have been designed generally in accordance with the recommendations contained in the Code of Practiced 114, 1957, and the Contractor shall comply with the recommendations made in sections 2.5 and 6 of the Code of Practice, unless specifically excluded or modified hereafter. A copy of the Code of Practice 114 shall be kept permanently on the site.

Precast and Unreinforced Concrete

Precast and unreinforced concrete shall comply with all relevant requirements of this specification.

Rates

The Contractor’s rates for all items relating to the concrete works and tests shall include for carrying out the work in accordance with all the terms and requirements listed hereafter. The Contractor is to take full responsibility for providing an adequate key for plastering etc. on concrete wire brushing of timber formwork, will be permitted and when metal formwork is used hacking of concrete will be allowed. The use of a retarder on the formwork will not be permitted in any circumstances.

The Contractor should note that all reinforcement and formwork has been measured separately, except that for precast work, the rates shall include for formwork and reinforcement as specified.

Defective Work

Where in the opinion of the Consultants any of the finished works or materials or workmanship in any part of the works do not comply with all relevant requirements of these Preambles, that part of the Works shall be classed as defective work.

All work classed as defective work, shall be cut and removed for the work and replaced to the satisfaction of the Consultants. The extent of the work to be removed and the methods to be used in the removal and replacement of this work shall be in accordance with the Consultant's instructions.

3.2 MATERIALS

All materials used in the works shall comply in all respects with the relevant BS except for any deviations specifically authorized in subsequent clauses of these preambles.

Concrete shall be made with Portland Cement, fine aggregate, coarse aggregate and water. No other agent or ingredient shall be added to the concrete.

1. **Cement**

The cement shall be Portland cement complying with BS 12 and shall be delivered to the sites in sealed bags. The cement shall be protected from damaged by the weather or any other causes at all times before use. It shall be stored in a weather tight and ventilated shed of adequate capacity fitted with a boarded floor suitably raised clear off the ground. Cement shall be used in rotation in order of its delivery to site. Any cement which has become caked or otherwise adversely affected shall not be used in any part of the works and is to be removed from the site.

2. **Aggregate**

Fine aggregate shall be river or pit sand thoroughly washed with clean water until all salts and other impurities are removed and complying with BS 882.

Coarse aggregate shall be broken syenite, washed clean and free from impurities and complying with BS 822.

Aggregate shall be stored in hard paved self-draining areas with adequate dividing walls to prevent mixing of different types of aggregates.

For structural concrete trades the minimum size of the aggregate shall be able to pass a Nr 7 sieve and the coarse aggregate shall be as listed in Table 1.

The grading of coarse aggregate shall be in accordance with Table 1 BS 882, 1965. The percentage of broken stone and sand shall be in accordance therewith, subject however, to possible modifications to be approved by the Consultant.

If the grading of any aggregate changes, the Consultants shall approve the mix content.

All sampling and testing of aggregates shall be carried out in accordance with the relevant recommendations BS 822.

At the commencement of the contract, the Contractor shall deliver to the Testing Authority for inspection and analysis three separate and sufficient samples of each type of aggregate to be used in the structural concrete grades. For each type of aggregate, the samples shall be taken at the proposed source of supply at intervals of not less than one day.

The quality of water contained in the aggregate shall be determined by an approved method at least once a day when concrete mixing is in progress.

3. **Water**

The water to be used in the works shall be clean and free from impurities. Water shall be tested in accordance with BS 3148.

4. **Reinforcement**

Bars for reinforcement shall be mild steel and or high tensile bars complying with BS 4449.

Mesh for reinforcement shall comply with BS 4483. All mesh shall be delivered as flat sheets.

Reinforcement shall be stored clear off the ground.

3.3 **TESTS**

General

All tests and checks carried on site shall be in the presence of, or as directed by the Consultant.

The Contractor shall send copies of all test results to the Consultants.

An item included elsewhere in these Bills for the cost of testing.

No claims will be entertained for any tests called for by the Consultants in consequence of any failure by the Contractor to comply with these specifications.

Concrete Tests

All concrete test cubs shall be made, cured and tested and the results recorded in accordance with the recommendation of BS 1881, 1970, unless specifically modified in subsequent clauses of these preambles. The testing shall be carried out by the Testing Authority.

The test specimens shall be 150mm cubes, made in steel mould of approved design. The test cubes shall be taken from typical batches of concrete as directed by and in the presence of the Consultant's representative without prior notice.

Slump tests of the mixed concrete shall be carried out at regular intervals to be directed by the Consultants and the results recorded and kept on site.

Load Test

Load tests of complete parts of the structure may be called for by the Consultants whenever a dispute arises as to the sufficiency of the work done by the Contractor.

The standard of acceptance for structure load test, as stipulated in clause 6.05 of the BS Code of Practice 144, is specifically excluded from these preambles. The test procedure and the standard of acceptance will be specified by the Consultants. Where the results of such tests indicate that any member or part of the structure does not comply with these specifications, that part of the structure shall be classed as defective work.

3.4 **DESIGN AND CONTROL OF CONCRETE AND MORTAR MIXES**

For structural concrete mixes, made with ordinary Portland cement, the average 7 and 28 days strength for each mix shall not be less than that specified in Table 1.

Preliminary Strength

For each structural concrete mix, the twenty-eight days preliminary strength shall be calculated as the average of all the cubes tested at twenty-eight days and seven days preliminary strength shall be calculated as the average of all the cubes tested at seven days.

If, for any mix in Table 1, the test results of one set of three cubes, tested at twenty-eight days, fall below these requirements, the mix shall be rejected, the proportions revised by the Contractor and the testing procedure repeated.

Results of all preliminary tests shall be sent to the Consultants as soon as they are available.

Work Strength

Work strength cube tests shall be carried out during the contract period.

A sample of the concrete shall be taken on each of the first four days the mix is used on the sites. Six cubes shall be made for each sample, three for tests at seven days and three for tests at twenty-eight days, and shall be accepted as satisfactory if the crushing strength of all three cubes is greater than specified for that mix.

Subsequently, a sample of the concrete shall be taken and six cubes made from the sample for every day of casting of structural concrete or as directed by the Consultants and these cubes shall be tested at seven and twenty-eight days to provide a record.

The Contractor shall maintain on the site a complete record of the date, time, grade and location in the works of the mix from which the sample was taken and shall submit this information with the test results to the Consultants as soon as they are available.

Works tests failure

If any set of seven days tests results indicate a low twenty-eight days strength to be expected, the Consultants shall be notified immediately and no props shall be removed from the affected part of the structure until the cause is determined.

If any of twenty-eight days cube test results fall below the specified strength, the Consultants shall be notified immediately and the cause of the failure investigated.

The extent of the area of the structure affected shall be as defined by the Consultants.

Table 1

GRADE	Characteristics Compressive Strength at 28 days (N/mm ²)	Minimum cement content for use	
		in Plain concrete kg/m ³	Reinforced or prestressed concrete (kg/m ³)
C7.5	7.5	120	-
C10	10.0	150	-
C15	15.0	180	240
C20	20.0	220	240
C25	25.0	-	300
C30	30.0	-	350
MORTAR			
1:2	224	5	
1:3	224	7.5	
1:4	224	10	
1:6	224	15	

Preliminary Strength

Preliminary strength cube tests shall be carried out to check the calculated proportions for each structural concrete m

Preliminary cubes shall be made for each mix from three samples of aggregate and the samples of cement sent to the approved Testing Authority. From each sample of aggregate six cubes shall be made, three for tests of seven days and three for tests at twenty-eight days.

Each set of three cubes tested at twenty-eight days shall be accepted as satisfactory if either all three cubes have a crushing strength greater than the preliminary strength or the average strength of the three cubes is greater than the preliminary strength, and the difference between the greater and the least is not more than 10% of that average.

All costs and all charges in consequence of the courses of action, the Contractor is directed to follow, shall be borne by the Contractor.

3.5 FORM WORK**General**

Before construction commences, the Contractor shall notify the Consultants of the general method and system of formwork he proposes to use.

All joints in the formwork and joints between the formwork and previous work shall be sufficiently tight to prevent loss of liquid from the concrete through these joints.

Concrete tolerance as described in the general concrete specification shall be adhered to.

No metal part of any device for maintaining formwork in the correct location shall remain permanently within the specified concrete cover to the main reinforcement.

Any bolt holes must be grouted with an approved mix of cement mortar slightly recessed from the surface of the surrounding concrete.

The position and design of all spacer bolts shall be agreed with Consultants but under no circumstances will ties passing through the finished concrete be allowed.

The use of concrete retarders or similar preparation on the formwork surfaces will not be permitted.

Shutters shall be light oiled immediately after manufacture and just before pouring with an approved mould oil.

The mould oil used shall not come into contact with the reinforcement.

Spacer blocks in reinforcement shall be plastic or cement mortar blocks and to a design approved by the Consultants.

All fair surfaces and arises shall be adequately protected against damage and surface staining during the execution of subsequent works.

Formwork shall be removed without risk of shake or vibration to the finished work.

Any finished work, which is subject to the subsequent damage or surface staining, shall be treated as defective work.

Immediately after striking, the shuttering shall be carefully wire-brushed so as not to destroy the grain pattern and then lightly oiled.

When not in use, all shuttering, the concrete shall be cured by being kept in a wet condition for at least seven days, in accordance with curing clause.

Mortises, holes, chases in concrete

Fixing blocks and ends of brackets and bars and bolts etc. shall be cast in the concrete at the time of placing and together with all mortises, holes, apertures, chases and grooves, etc. shall be accurately set out in the formwork before the concrete is placed. No part of the concrete works shall be cut away for any such items or for any other reason without the Consultant's approval.

The Contractor shall obtain from all Public Utility Authorities complete information of their requirements regarding conduit pipes, fixing bolts, subject to the conditions that failure or a sub-contractor to supply such information shall not be allowed to delay the progress of the contract.

The Contractor shall ensure that all Public Utility Authorities are informed of his program for the structural works at the commencement of the contract.

Propping

The vertical propping to all formwork shall be carried down sufficiently far to provide the necessary support without damage or overstress or displacement of any part of the construction.

Structural props shall be retained in position until new construction is sufficiently complete and strong to support its own weight and any loads to be placed on it during the contract period.

All formwork to soffits shall be constructed so that it can be removed without disturbing the structural props.

Cambers

Unless otherwise detailed on the drawings, the formwork of all beams and slabs shall be constructed with appropriate upward camber.

Final Preparation

The internal faces of the formwork may be coated with an approved preparation to prevent adhesion of the concrete to the forms, provided that the use of this preparation will not stain the surface of the finished concrete.

None of this preparation shall be allowed to touch the reinforcement.

Immediately before the concrete is placed in any section of the formwork, the interior of that section shall be completely cleaned of all extraneous materials including water.

Each section of the formwork to structural member shall be inspected and passed by the Consultants immediately before concrete is placed in that section.

3.6 CONSTRUCTION AND EXPANSION JOINTS

Position of Construction Joints

The Contractor shall ensure that all construction joints are arranged to minimize the effect of shrinkage of the concrete. Generally, the distance between construction joints in walls and slabs shall not exceed 9 metres.

The position of all joints shall be agreed with the Consultants before work is commenced and all joints shall be straight and true.

Concrete placing shall be carried out continuously between consecutive construction joints.

Immediately before the next pour, all joints must be thoroughly cleared and wetted with clean water.

To ensure uniformity of appearance, the following precautions should be taken:-

1. extreme care in uniformity of mix
2. all concrete must be properly compacted to the maximum.

Construction joints between different grades of concrete shall be made positioned as the Consultants will direct.

Treatment of Construction Joints

All horizontal joints at the exposed face shall be formed against a straight batten at least 12mm thick.

All construction joints other than horizontal joints shall be formed with proper stop boards and the stop boards shall be fixed vertically unless otherwise directed.

All construction joints shall be hacked and laitence and honey combed concrete moved from the contact face before adjacent section is concreted. Hacking shall be terminated 12mm away from the face to be exposed. Air and water jetting may be used instead of hacking, subject to the prior approval of the Consultants. All loose material shall be removed from the contact face immediately after hacking or jetting has been completed.

When work is to be resumed at a construction joint, it shall be swept clean and dressed with a neat cement slurry immediately prior to the pour.

All concrete at construction joints is to be shaded from the direct rays of the sun for a period of one day before casting adjacent concrete.

Expansion Joints

Expansion joints shall be positioned and formed in accordance with the details shown on the drawings.

All expansion joints shall be filled with an approved compressible materials unless otherwise indicated on the drawings.

3.7 REINFORCEMENT

General

Reinforcement bending schedules will be provided if requested by the Contractor listing the cut length and diameter of size and bending dimensions and location of each bar in the work.

Before the bars are cut to length, the Contractor must check that:-

1. reinforcement schedules are provided for each part of the structure sufficiently in advance of his concreting program.
2. each schedule includes the correct quantities of reinforcement as detailed on the drawing to which it relates;
3. the grades of reinforcement given in each schedule correspond to those shown on the relevant drawing.

The Consultants shall be notified of any errors disclosed by these checks.

Bending

All reinforcement bars shall be accurately shaped in a manner that will not injure the material. Bars shall not be bent hot.

Cleaning

All reinforcement shall be free of all loose mill scale and thoroughly cleaned to remove all loose rust, oil and grease or other harmful matter immediately prior to being place in position in the works.

Placing

All reinforcement shall be accurately placed with the correct cover and securely fixed in the positions shown on the drawings by an approved method and inspected by the Supervising Officer.

The Contractor shall supply and fix all necessary concrete spacers required to maintain the reinforcement in the correct position. The cost of chairs shall be included in the rates for reinforcement in these Bills.

No metal part of any device used for connecting bars or for maintaining reinforcement in the correct position against faces exposed to the elements shall remain permanently within the specified minimum concrete cover to the reinforcement.

3.8 CONCRETING

General

The Contractor shall ensure that each stage in the contract of the reinforced concrete work including the making and testing of cubes and the maintenance and calibration of mixing and measuring plant, is supervised and finally inspected by competent and responsible members of his site staff.

Proportions

The proportions of materials for concrete shall be accurately measured.

The cement, including bagged cement, and all aggregate shall be measured in weighing batches approved by the Consultants.

Where aggregates are gauged by volume, accurate gauge boxes shall be constructed to the approval of the consultants. The boxes shall be completely filled to the top struck off level.

In measuring the water for each batch, due allowance shall be made for the water content of the aggregates.

The water content of the aggregates shall be measured before each day's concreting begins and when they are to be used immediately after delivery.

Mixing

Concrete shall be mixed in an approved mechanical type concrete mixer. Mixing shall be continued until there is a uniform distribution of the materials in the mixer's and the mass in uniform in color.

The mixing time for each batch shall not be less than the minimum period recommended by the mixer manufacturer, checked by an approved timing device, and shall be continued until concrete is uniform in color and consistency.

The volume of mixed materials in each batch shall not exceed the rated capacity of the mixer. Each batch of concrete shall be discharged completely before the mixer drum is recharged.

The mixer drum shall be thoroughly washed out whenever mixing ceases.

Transport

Concrete shall be transported as quickly as possible from the mixer to its final position without segregation or loss of any of the ingredients.

All plant and equipment used for transporting concrete shall be kept clean. All containers used for transporting concrete shall be thoroughly washed out whenever mixing ceases.

Runs or gangways for concrete transporting and main runs for foot traffic shall not be supported by or allowed to bear on the fixed reinforcement.

Placing

Concrete shall be placed while still sufficiently plastic for adequate compaction.

At all times when reinforced concrete is being placed a competent steel fixer shall be in continuous attendance on the concrete to adjust and correct the position of any reinforcement which may be displaced.

The Consultants shall be given due notice that concrete is to be placed in a particular part of the works when he so directs.

The Contractor shall keep on site a complete record of the works, showing the time and date when concrete is placed in each part of the works. The records shall be available at all times for inspection by the Consultant. Once concreting has commenced, it shall proceed continuously without a break until the forms are filled or a designed joint is reached.

Vigilance will be necessary during pours of lifts to ensure that any grout leaks or spillage are thoroughly brushed off with clean water immediately.

Reinforcement left exposed, projecting from poured concrete, must be protected to avoid danger of rust staining the completed work.

Subject to the Consultant's approval, the use of foamed rubber or plastic gaskets to ensure no loss of grout at the foot of lifts will be permitted, provided they do not materially affect the appearance of the finished work.

Compacting

Concrete shall be thoroughly compacted during placing and shall be carefully worked around all reinforcement, embedded fixtures and into the sides and corners of the formwork.

All structural concrete shall be compacted by the use of approved mechanical vibrators, preferably the internal type.

Curing

All surfaces of freshly placed structural concrete shall be covered with an approved material and cured by being kept continuously moist for seven days.

Soffit and side forms left in position will be regarded as effective in keeping those surfaces moist.

The Contractor shall notify the Consultants of the system and methods and curing he proposes used for all structural concrete members before work is commenced.

3.9 STRIKING OF FORM WORK

General

The structure shall not be distorted, damaged or overloaded in any way by the removal of the formwork from concrete members.

The responsibility for the safe removal of any part of the formwork shall rest with the Contractor.

Minimum striking times

The minimum time from completion of placing concrete to the removal of formwork from structural members shall be determined from the following table or as the consultants may direct.

LOCATION	MUM STRIKING TIMES FOR CONCRETE IN DAYS
Beam and wall sides	1
Columns	1
Beams soffits (structural props left in)	7
Beam structural props	14
Slabs (structural props left in)	3
Slab structural props	10

3.10 FINISHED WORK TO CONCRETE FACES**General**

After removal of the formwork no treatment of any kind other than the application of specified finishes and such treatment as is required for curing the concrete, shall be applied to the concrete faces.

Where rubbed down, plain smooth of fair face finish is specified, the concrete shall be brought to a perfectly true, smooth, and even surface by rubbing with carborundum stone dipped in cement grout. Alternatively, the Contractor is permitted at his own expense to provide smooth linings to the form which will achieve the required finish without rubbing down. Rubbed down surfaces shall be true to form and free from all board marks, joint marks, honeycombing, pitting, etc.

Fair face finish

Unless otherwise specified, all concrete faces to be exposed in the finished works shall be left as struck with a plain smooth face true to line and level within the specified tolerance for the work.

These clauses in no way vary the Preambles clauses for reinforced concrete. It is essential that in both the preparation of the formwork and in the casting of the concrete considerable care should be taken to achieve a first class uniform appearance. This appearance is of such importance that special effort will be necessary to avoid staining and to achieve uniformity in color. No repair or patching up whatsoever will be allowed.

After inspection all superfluous fines and similar projections shall be carefully removed. No render or other applied finish shall be used to obtain a fair face to the concrete.

All concrete face to be exposed in the finished works shall be adequately protected against damage or surface staining during the execution of subsequent works.

Any finished work which the Consultants shall judge inferior in any respect to the standard of the relevant approved sample, or which is subjected to subsequent damage or surface staining, shall be rejected and treated as defective work.

Tolerances

Unless otherwise indicated in the drawings, the setting out dimensions, levels of the finished works, and sizes of structural elements, shall be within the maximum tolerance given below.

<u>Description</u>	<u>Max. Tolerance</u>
1. All dimensions of 3m and over	- 6mm
2. All dimensions less than 3m	- 3mm
3. Slab to surface levels (all points in surface)	- 6mm

Surfaces exposed in the finishes work shall not depart by more than 5mm for 1500mm straight edge placed anywhere on the surface.

Columns and walls shall not be more than 6mm out of plumb in any one story height and not more than 18mm out of plumb in the total height.

Unless otherwise indicated in the drawings, that tolerance to which units are to be cast shall be within the following:-

<u>Description</u>		<u>Max. Tolerance</u>
1. All dimensions shall be within	-	3mm
2. Maximum permissible bow	-	3mm
3. Maximum permissible twist from any plain surface as defined by any three exterior corners.	-	3mm

3.11 **PRECAST CONCRETEWORK**

General

These clauses are only intended to cover items of precast concrete work, annotated as “fair finish” and not lintels and the work, which may either be precast or cast in-situ at the contractor’s option.

Formwork

The prices of all precast work shall include formwork. Where so described, the finish achieved shall be fair face and free from joint and board marks. The type of construction of the formwork shall be approved by the Consultants before any prefabricated is commenced.

Approval

All panels shall be made available for checking of dimensions and surface finishes and shall be approved by the Consultants before erection.

Erection

The Contractor shall submit details of the method of erection and supports for the consultant’s approval before manufacture of panels commences.

Finish

Considerable care must be taken to obtain a high quality finish.

4.0 **BLOCKWORK**

Cement

The element shall be Ordinary Portland cement to BS 12 as before described.

Sand

The sand shall be river or pit sand and as before described.

Water

The water shall be clean and free from impurities.

Precast Sandcrete/Concrete Blocks

Concrete blocks shall be manufactured in accordance with BS 2028; 1364: 1968.

All type of blocks to be made in approved concrete block making machine with pallets true to shape and square edges to all sides.

The external dimensions of the blocks within the tolerance specified shall be as follows:-

<u>Description</u>		<u>Max . Tolerance</u>
1. Length	450mm	3mm
2. Height	200mm	3mm
3. Thickness of solid blocks	230/150/100mm	3mm

Sandcrete blocks shall be composed of one part cement to six parts sand by volume and shall have a minimum compressive strength of 3.45N/mm^2 and an average of 4.14 mm^2 in twenty-eight days.

The cement and sand shall be mixed and unless otherwise specified or directed by the Consultants, turned three times dry until an even color and consistency is achieved.

Water shall then be added gently through a rose; the quantity of water added being just sufficient to secure adhesive.

After removal from the machine, the blocks on pallets shall be matured under shade in separate rows, one block high, with a space between each block for at least 24 hours.

They shall then be removed from pallets but shall not be stacked up or be removed from shade for at least a further seven days, and then stacked not more than five blocks high in the shade for minimum of fourteen days and kept well watered at the time.

No blocks shall be built into any part of the building until they have matured for at least twenty-eight days. The face of blocks, except where otherwise described, shall be left rough for plastering or rendering.

Blocks of special size and shape shall be cast true to shape, even in size, square and free flaws or blow holes with clean and sharp arise and equal to samples approved by the Consultants. All blocks shall be carefully handled. Blocks with broken arise shall not be used.

Samples to be submitted

At least two weeks before block-laying is to commence, twelve samples of each type of precast sandcrete blocks to be used in the Works shall be submitted to the approved Testing Authority. Should the test be unsatisfactory further samples will be required.

Mortar

The cement and sand mortar shall be composed of one part Portland cement and six part of sand by volume. An approved plasticizer additive may be used in accordance with the manufacturer's instruction.

The mortar shall be used within one hour of mixing. Such mortar shall not be used or mixed with any other mortar after it has begun to set nor shall any other mortar of any kind of previous day's mixing be used.

A proper stage shall be provided to receive the mortar when made.

Blocklaying

The whole of the blockwork shall be constructed as shown on the drawings. All blocks shall be well soaked before being laid. Blockwork shall, unless otherwise described, be built in stretcher bond.

All blocks shall be levelled carefully through every second course. All corners, junctions and reveals shall be properly bonded. All walls, perpendes, quoins and the like shall be left strictly true, square and plump.

Blockwork shall be carried out in uniform manner and no one portion shall be raised more than 1 meter above another at any one time.

Mortar joints shall not exceed 12mm thickness. Special care shall be taken that all vertical joints are filled with mortar.

All faces to be rendered shall have joints raked out to a depth of 12mm.

The contractor shall properly execute all tough cutting, bonding, weighing and trimming up to soffits, plumbing angles, building in or cutting and pinning in ends of lintels, sills, joints and the like.

Any defective blocks found in the works shall be cut out and replaced by sound ones at the Contractor's expense.

5.0 **ROOFING**

Troughed metal Sheeting

The Contractor shall ascertain from the drawings the exact lengths of longspan sheets required from ridge to eaves and shall order the sheets accordingly. Cutting of sheets and/or lapping at ends is expressly prohibited.

Sheets are to be stored in a dry place in their delivery container. Contact with materials such as lime and cement must not occur.

The roof sheet shall be laid strictly in accordance with the manufacturer's instructions.

Where sheets are fixed to timber, these are to be nailed at ridges with galvanized steel drive screws, including caps and sliding washers. All timber surfaces, which contact the sheeting or flashing shall be preserved with an approved wood preservative or in severe conditions overlaid with inodorous roofing felt. All exposed nail heads in timber are to be punched well below the surface of the timber. All holes for fixing shall be pre-bored.

Where sheets are fixed to steelwork, galvanized steel 'J' bolts with cap and sliding washer shall be used. All steelwork surfaces in contact with sheeting or flashings are to be carefully separated by continuous strip of bitumen felt tape or alternatively painted with zinc chromate or aluminium paint.

Where sheet are in contact with alkali containing materials (such as cement, concrete, lime mortar and sandcrete blocks) the contact surfaces of such material shall be painted with two coats bituminous paint of an approved quality.

Laps are to be in accordance with the manufacturer's recommendations, but in no circumstance to be less than one troughed corrugation.

Sheets shall, where possible, be laid from the end of building away from the prevailing wind so that expose edges face down wind.

Eaves shall incorporate patent eaves filler pieces suitable for the type of sheet used.

Ridges and valleys shall be patent ridge pieces suitable for the type of sheet used and shall incorporate patent filler pieces suitable for the type of sheet used.

5.1 **WATERPROOFING - TREATMENT**

Concrete roof waterproofing treatment and tanking to basement shall be from the variety manufactured by FEB LTD Albany House Swinton Hall Road, Swinton, Manchester M27, 1DT U.K.; and shall be applied strictly in accordance with the manufacturer's instruction.

6.0 **WOODWORK**

6.1 **MATERIALS**

Timber

Use only tropical hardwood or whitewood of approved quality, straight cut, sound, free from sap, wrists, shakes, loose or decayed knots, waney edges, borers, termites or other harmful defects, properly seasoned and generally in accordance with BS 1186; Part 1, "Quality of timber". Timber, described as selected shall be that of good grain and appearance suitable for varnishing.

Moisture content of timber

The moisture content of timber shall be within the limits, as specified in BS 1186; Part 1, for each use, and shall be maintained until the building is completed.

Plywood

Plywood shall be treated during manufacture or prior to fixing against attack by termite, suitable for the position where used and comply with the requirements of BS 1455.

Plywood for joinery fittings shall be of the thickness specified in the Bills of Quantities. Plywood, which is to be covered on one side with plastic; laminate shall have a compensating veneer on the reverse.

Hardboard

Hardboard shall be treated during manufacture against attack by termites, suitable for the position where used and comply with the requirements of BS 1142; Part 2.

Softboard

Softboard shall be treated during manufacture against attack by termites, suitable for the position where used and comply with the requirement of BS 1142; Part 3.

Nails

Nails shall comply with the requirements of BS 1202 "wire nails and cut nails" for building purpose.

Screws

Screws shall comply with the requirement of BS 1210 "wood screws"

Bolts

Bolts shall comply with the requirement of BS 916; black bolts; screws and nuts; BS 1083, close tolerance precision bolts of BS 1768 nuts, screws and plain washers.

Preservatives

All timber shall be treated with a suitable approved colored preservation to resist the attack of termites or other insects and fungicidal decay.

Any cut or notches to treated timber shall be treated with a liberal application of the preservative. Any damage to treated surface shall also be touched up.

Use only preservative over which varnish can be applied for joinery work.

Adhesive

Glues and adhesives shall be best quality waterproof casein or cold resin glue as approved, except where objectionable strains might result from its use. Proprietary glues shall be selected from those resistant to damp humid conditions.

6.2 WORKMANSHIP (JOINERY)**Dimensions**

“Sawn” timber shall be “left from the saw” and shall be full to the dimensions stated, except that occasional slight variation in sawing is permissible.

Procedure of work

Arrange the operations so that the convenience and requirement of all tradesmen concerned in the work may be reasonably respected.

Setting out

Set out and construct all work to dimensions given and as described on the drawings.

Jointing

Join all framing as specified or as is most appropriate in the circumstances. Design and construct the joints so that they will transmit the loads and resist the stresses to which they will be subject. Jointing of all structural timber shall only occur over supports. No structural timber shall be jointed between supports.

Execute all jointing to the satisfaction of the Consultants. Secure all joints with a suitable type and sufficient number of nails, unless otherwise specified. Secure butt joints, wherever possible, with nails riven from the far side of the flanking member (if any).

Properly prime the jointing surfaces of all connections exposed to the weather, except where adhesives are specified. Where joints are designed in critical relation to loads, the

size, spacing type, positioning and number of nails, wood screws, bolts, washers and timber connectors to be as specified or detailed.

Surfaces to be in good contact over the whole area of the joints before fastenings are applied. No nail, screws or bolts are to be placed in any end split. If splitting is likely, holes for nails are to be pre-bored at a diameter not exceeding 4/5th diameter of the nail. Lead holes are to be bored for all screws. Bore holes for bolts form both sides of the timber of diameter $D + D$ where $D =$ diameter of the bolt.

Bring up tight but take care not to crush the timber under the washers.

Frames

Every post, stud, beam, binder, joints, rafter and purling shall extend in one piece between its supports or fixing, wherever possible

Protection materials

Protect materials and assembled units from the weather and store in such a way to prevent attack by fungus, decay and or/insects.

Cleaning-up

Clean out all shavings, cut ends and other timber waste from all parts of the building before coverings and in-fillings are constructed. Destroy or remove waste and rubbish.

6.3 **PROCEDURE**

Measurement for joinery

Take all measurement for joinery works at the building and not from the drawings.

Drawings

Work is not to commence until the Consultants have approved the manufacturer's full size setting-out drawings. Suggestions which the manufacturer may wish to make for modifying the construction and joints shown on the drawings will be considered when such drawings are examined.

Fixed-in joinery

Where joinery works are specified to be "fixed-in" or inserted in the position they are to occupy after the surrounding or enclosing carcass has been constructed, it shall be the responsibility of the Contractor to ensure that the necessary fixings are incorporated in the carcass.

Alternatively

Construct such ground work as are required to provide a suitable base and fixing for the joinery works. Secure fix-in joinery works so that they are plump and true to the shapes and dimensions shown on the drawings and details. Joinery works shall not be fixed in positions until after all floor, wall and ceiling surfaces have been formed or constructed unless otherwise specified.

Preservative treatment

The treatment is to be carried out before the components are assembled and before priming. Sawn timber shall be treated with Brown or other conspicuous color wood preservative.

Priming

Joinery, which is prepared for painting is to be knotted and primed before the work is dispatched to the site. Where adjustments are made on the size, the priming is to be made good.

Coat the timber with aluminium based mould resistant primer where “primer” is specified. Do not apply priming to glued surfaces. Prime and touch up when necessary during the progress of the work.

The joinery is to be given the first coat of finish before being dispatched to the site.

Delivery and fixing

Manufacture and deliver to the sites and fix in the building joinery described in the Bills of Quantities and as shown on the drawings including the supply and fixing of:-

1. metal straps, lugs and dowels
2. priming, preservative and polishing
3. all ironmongery, specified or shown on the drawings.

Dimensions

All “wrought” timber is to be sawn, planed, drilled or otherwise machined or worked to the correct sizes and shapes shown on the drawings or as specified. Where “normal” dimensions are stated, an allowance of 3mm shall be permitted for each wrought surface. The full size detail drawings shall be held to show the “actual” dimensions.

Exposed faces

All timber to be exposed in the finished surfaces of joinery works shall be “wrought” on the appropriate faces unless otherwise specified.

Finish

When natural finish or finish for staining, clear polishing or varnishing is specified, the timber in adjacent pieces shall be matched, uniform or symmetrical in color and grain.

Shrinkage

Arrange joints and fix all joinery works so that shrinkage in any direction shall not impair the strength and appearance of the finished work and shall not cause damage to contiguous materials or structures.

Tolerance

Provide reasonable tolerances to all connections between joinery works and the building carcass whether of block work or concrete construction, so that any irregularities, settlements or other movements shall be adequately compensated.

Fabrication

Perform all necessary morticing, tenoning, grooving, notching, tonguing, housing, rebating and all other work necessary for correct jointing.

Provide all metal plates, screws, nails and other fixing that may be necessary for proper execution of the joinery works. Carry out all works necessary for the proper construction of all framings, linings, etc., and for their support and fixing in the building.

Joints

Construct the joinery as shown on the Consultant's details. Where joints are not specifically indicated they shall be recognized forms of joints for each position. Make the joints as to comply with BS 1186, Part 2.

Use joints where provision must be made for shrinkages or movement in the connections and where sealed joints are required. Cross tongue or otherwise reinforced all glued joints.

Punch and putty all nails, springs, etc.

Surfaces in contract are to have a good sawn or planed finish.

All cutting edges of tools are to be sharp to avoid "burnishing".

Dress lightly the surface of plywood to be glued with sand or glass paper. Do not allow the sand and/or glass paper to clog and cause "burnishing".

Keep all surfaces to be glued clean, free from dust, dirt, saw-dust, oil or any other contamination.

Apply adequate pressure to glued joints to ensure intimate contact and maintain whilst the glue is setting. Mixing, application and setting conditions should be in accordance with the glue maker's instructions.

Moulding

Moulded work shall be accurately worked to the full size details supplied by the Consultants. All mouldings shall be worked in the solid, except where otherwise stated.

Veneering or plaster laminates

Carry out in an approved manner and to the entire satisfaction of the Consultants.

Scribing

Accurately scribe all skirtings, plates and other joinery works to fit the corner of any irregular surface against which they may be required to form a close butt connection.

Weathering

Ensures that all weathering in surfaces, throating, grooves and joints etc. and all open connections in external joinery works shall be properly executed and shall obtain a reasonable degree of weather resistance.

Sanding on completion

Timber described as “selected” shall be sanded or scraped and kept clean for painting and or varnishing.

Door frames

Frames in external walls where indicated on the drawings as timbers shall be framed, once rebated once chamfered and all arises rounded in accordance with the full size details. The frames shall be “fixed-in” in accordance with the details. There shall be three fixing ties for one lead door and 7 for two lead doors.

Pointing frames

All mastic sealers for pointing shall be to the approval of the Consultants. They shall be of such composition that they will not stain surrounding materials, will receive paint without bleeding, will not sag or run and will not set hard and dry out under any condition of climate or temperature recorded in the locality of the site.

Frames in internal walls shall be constructed in accordance with the details. The stiles and rails shall be morticed and tenoned together. The thickness of tenons shall be approximately one third of the thickness of the doors, and the width of each tenon shall not exceed five times its own thickness. Haunching shall be sunk to a depth not less than 9mm.

Flush doors

Flush doors shall be delivered on site and assembled in their timber frames. Flush doors shall have a minimum thickness of 40mm. Solid cores shall be made up from timber panels of variable density to achieve 1 1/2 hour fire check rating as necessary and shall be covered both sides with 6mm thick plywood. Plywood for external doors shall be resin bonded and moisture resistant. All edges of flush doors shall be lipped with not less than 9mm thick hardwood strips. Flush doors shall be blocked out as necessary to facilitate the fixing of butts, door furniture, door closers, and kicking plates. The materials used shall not be of inferior quality to those required in BS459; Part 2 or any other international standard for doors.

Skirtings

Skirtings shall not be installed until after the flooring is laid. All skirting are to be finished to the dimensions shown in the details.

Secure to walls and perform all necessary butts and scribe at internal angles and miter at external angles, splay butt joints where they occur, scribe the lower edges of the skirtings to the contour of the flooring. Finish the skirtings for painting or varnishing as described.

Transport and protection

During the rainy season the joinery is to be kept under a waterproof cover during transit. It is to be kept under waterproof cover and clear of the ground on site. It is to be handled and stacked carefully to avoid damage.

Make good defective work

Should any shrinkage or warping occur or any other defects appear in the joinery work before the end of the defects Liability Period, such defective work is to be taken down and renewed to the consultant's satisfaction and any work disturbed in consequence must be made good at the Contractor's expense.

6.4 IRONMONGERY**Approved manufacturer**

All ironmongery shall be as specified or otherwise as approved by the Consultants and shall be fixed with matching screws.

Samples

Samples of all ironmongery shall be approved before fitting.

Working order

All locks and other fittings shall be oiled and adjusted and left in proper working order on completion.

Joinery work

All joinery shall be properly morticed or worked as necessary for fixing the ironmongery.

Painting

Where possible, ironmongery shall be carefully removed and protected during painting and adjacent work.

Where this is not possible, the ironmongery shall be carefully covered with masking tape or similar. Any paint, etc., on the ironmongery shall be carefully removed without damaging its finish or the ironmongery shall be removed and replaced with new.

Protection of the work

Protect work during progress by temporary doors and by closing openings, provide and maintain boxing or other temporary coverings required for the protection of dressed or finished work that might be damaged during the progress of the work if left unprotected.

7.0 STRUCTURAL STEELWORK**7.1 MATERIALS****Steel**

The steel generally shall comply with BS 4360; Weldable structural steels.

Rolled mild steel sections shall comply with BS 4: Part 1: Hot rolled sections and BS 4848 Part 4: Equal and unequal angles.

Hollow sections shall comply with BS 4848 Part 2: Hollow sections.

Galvanized plain sheets shall comply with BS 2989.

Galvanized seamless steel shall comply with BS 1470.

Pressed steel shall comply with Bs 1442.

Sundries

Black bolts; screws and knots shall comply with BS 4190.

Close tolerance precision, bolts, knots, screws and plain washers shall comply with BS 3692.

Black taper washers shall comply with BS 3410.

High strength fiction grip bolts shall comply with BS 4395.

Electrodes shall be grade 'A' best heavy coated quality and comply with BS 5639.

7.2 WORKMANSHIP**Fabrication**

Work off-site shall conform with the appropriate clauses of BS 449: The use of Structural Steel in Building.

All surfaces in contact and all surfaces inaccessible after assembly shall be treated according to these specifications before assembly.

Welding

Welding procedure shall comply with BS 1856, BS 938 and BS 2642 as appropriate.

The equipment to be used shall be of a type which produces proper current so that the welder can produce satisfactory welds. Welding in shop and on site shall be carried out by experienced and well qualified welders.

Surface preparation and assembly shall be carried out strictly in accordance with BS 1856 and BS 449 and BS 2642 as appropriate.

Work on site

All handling of works during transport and on the site shall be planned and carried out by the Contractor to proceed in a manner designed to protect the painted surfaces from damage.

All members stored on site shall be laid out on timber sleepers, kept clean and free from construction dirt. Marking on individual members shall be visible when members have been stacked together.

The position of all points of supports for structural steelwork shall be set so that the distances between any two points joined by a shop fabricated component of structural steel are within χ " of the required dimension. Individual fabricated members shall conform to a degree of accuracy compatible with the tolerances laid down by this clause.

The position of any column or support wall shall be set out with a tolerance of 1" away in 100ft., but no point shall be more than 1" away from the position shown on the drawings.

The Contractor shall erect temporary bracing as necessary to maintain all structural steelwork in the correct position until the structure is complete.

Site connections

The site bolting of permanent connections shall conform to clause 62 and BS 449.

Washers shall be provided under all knots and all bolts shall show after tightening at least two clear threads beyond the knot. During the tightening operation, the bolt head shall be prevented from rotating.

Welding on site will not be permitted without the Architects written approval.

Protection against corrosion

All mill scale and rust is to be removed by hand in accordance with clause 505f CP 2008: 1996. Two coats red lead primer are to be applied to all structural steel work before delivery to site. Any damaged plain surfaces must be made good on site prior to application of a succeeding coat of paint.

Any surfaces which will be inaccessible after erection are to be painted before erection.

8.0 METALWORK**8.1 MATERIALS****Steel**

Steel shall be described for structural steelwork.

Aluminium

Aluminium extruded sections shall be mill finish with surfaces free from blemishes blur or other defects and shall comply with BS 1474.

Sundries

All sundry items shall be as described for structural steelwork.

Windows and doors

The windows and doors are to be generally to the approval of the Consultants.

The Contractor may be required to submit samples of windows, doors and all ironmongery for approval and once approval has been given the quality of the sample must be strictly adhered to.

8.2 WORKMANSHIP

Fixing of windows and doors

The Contractor shall be responsible for the testing of windows, doors, screens and curtain walls and shall ensure that windows and doors when opened, are perfectly in line with the façade of the building.

On completion of the works, the contractor shall leave the windows, doors, screens and curtain walls in a clean and perfect working condition to the satisfaction of the Consultants.

Provide all necessary supports and fixing such as screws, straps, lugs and dowels.

Grounds for built-in metal work

Where metal work is specified to be “built-in” or inserted in the position they are to occupy after the surrounding or enclosing carcass has been constructed, it shall be the responsibility of the Contractor to ensure that the necessary fixings are incorporated in the carcass.

Alternatively

Construct such ground works as are required to provide a suitable base for the metal work. Secure built-in metal work so that they are plump and true to the shape and dimensions shown on the drawings and details. Metal work shall not be fixed in position until after all floor, wall and ceiling surfaces have been formed or constructed unless otherwise detailed.

Delivery and fixing

Manufacture, deliver to the site and fix in the buildings all metal work so described in the Bills of Quantities and as shown on the drawings including the supply and fixing of:-

1. all metal straps, lugs, plugs and dowels

2. all on-site and off-site priming

3. all furniture specified or shown on the drawings.

Protective coating

All steel that does not have any other form of protective coating, shall be given one coat of red lead for internal work and two coats of red lead for external work, prior to delivery on site and the application of the decorative finish specified.

8.3 GENERIC FACADE/CLADDING – ALUCO BOND*DELIVERY, STORAGE AND HANDLING*

Protect finish and edges in accordance with panel manufacturer's recommendations.
Store material in accordance with panel manufacturer's recommendations.

ACCESSORIES

Extrusions, formed members, sheet, and plate shall conform with ASTM B209 and the recommendations of the manufacturer.

Panel stiffeners, if required, shall be structurally fastened or restrained at the ends and shall be secured to the rear face of the composite panel with silicone of sufficient size and strength to maintain panel flatness. Stiffener material and/or finish shall be compatible with the silicone.

Sealants and gaskets within the panel system shall be as per manufacturer's standards to meet performance requirements.

Fabricate flashing materials from 0.030" minimum thickness aluminum sheet painted to match the adjacent curtain wall / panel system where exposed. Provide a lap strap under the flashing at abutted conditions and seal lapped surfaces with a full bed of non-hardening sealant. Fasteners (concealed/exposed/non-corrosive): Fasteners as recommended by panel manufacturer. Do not expose fasteners except where unavoidable and then match finish of adjoining metal.

EXECUTION*INSPECTION*

Surfaces to receive panels shall be even, smooth, sound, clean, dry and free from defects detrimental to work. Notify contractor in writing of conditions detrimental to proper and timely completion of the work. Do not proceed with erection until unsatisfactory conditions have been corrected. Surfaces to receive panels shall be structurally sound as determined by a registered Architect/Engineer.

INSTALLATION

Erect panels plumb, level, and true.

Attachment system shall allow for the free and noiseless vertical and horizontal thermal movement due to expansion and contraction for a material temperature range of -20°F to +180°F. Buckling of panels, opening of joints, undue stress on fasteners, failure of sealants or any other

detrimental effects due to thermal movement will not be permitted.

Fabrication, assembly, and erection procedure shall account for the ambient temperature at the time of the respective operation.

Panels shall be erected in accordance with an approved set of shop drawings.

Anchor panels securely per engineering recommendations and in accordance with approved shop drawings to allow for necessary thermal movement and structural support.

Conform to panel fabricator's instructions for installation of concealed fasteners.

Do not install component parts that are observed to be defective, including warped, bowed, dented, abraded, and broken members.

Do not cut, trim, weld, or braze component parts during erection in a manner which would damage the finish, decrease strength, or result in visual imperfection or a failure in performance.

Return component parts which require alteration to shop for refabrication, if possible, or for replacement with new parts. Separate dissimilar metals and use gasketed fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals.

9.0 PLUMBING INSTALLATION

General Item.

- A. The plumbing work and water supplier shall be carried out to the requirements, rules and regulations of the Local Authority and the Contractor shall include for all testing and stamping fees.

Materials and workmanship

The contractor shall include for making the position for all holes, mortises, chases etc., in structure for the installations in this section. Holes through concrete work or block work may be formed during construction and the contractor shall include for all necessary setting out.

All sanitary appliances, bathroom furniture/fittings shall be from an approved manufacturer and shall be fixed strictly in accordance with their recommendations. The Architect/Supervising Officer shall verify each appliance, furniture or fitting before incorporated into the permanent works.

The pipes have been measured net as fixed and rates shall include for all short lengths, cutting, waste and extra joints.

The rates for fixing U.P.V.C. or copper pipe work shall include for clips or brackets at centers not exceeding those recommended by the manufacturer.

The P.V.C. or copper pipe work shall be from an approved manufacturer and jointed and fixed strictly in accordance with their recommendations.

The water supply, waste and overflow pipe work shall comply with the requirements of B.S.C.P. 310, B.S. 5254 and B.S 5255 respectively.

Testing

On completion of the installation and immediately prior to testing, the whole of the installation shall be thoroughly flushed through to remove all dirty water, debris etc.

All pipe work is to be subject to hydraulic test for water pressure in the presence Architect/Supervising Officer. Such test is to be applied by test pump and is to comprise a test pressure of 161 lb per square inch/1.111N per square millimeter carried for thirty minutes. Leaks or other defects are to be repaired, as the Contractor's own expense and the same test repeated until the whole of the pipe work is proved to be completely free from defects to the satisfaction of the Architect/Supervising Officer.

10.0 ELECTRICAL INSTALLATIONS

General Items

The work shall include the supply of all materials, unless otherwise stated, labor, tools and equipment necessary to install, test and commission all the services described in these Bills of Quantities or shown on the Contract Drawing.

The work and all materials and workmanship shall comply with the following:

1. The Supply Authority (National Power Authority, NPA) regulations.
2. The current appropriate British Standards and the British Standard code of practice for Electrical Installations.

The Electricity supply to the site will be provided by the Supply Authority where applicable and will be of a suitable voltage.

The whole of the Electrical Installations and all other equipment connected thereto shall be earth in conformity with the requirements of the supply Authority.

Materials and workmanship

The cables, conduits and sheaths shall be tested for insulation and continuity in accordance with the Supply Authority Regulations, as the work proceeds, before any connections are made to switch and distribution are made board terminals. In case any materials or work shall, with or without being tested, be considered defective, such work shall forthwith be amended in a proper and satisfactory manner, on being notified by the Architect/Supervising Officer.

All distribution panels shall consist of metal sheet cases with hinged doors. This metal work shall be primed and finished in good stove enamel. Color finish to B.S. 318C.

Gaskets shall be fitted to the doors to prevent the ingress of moisture and dust.

The distribution panels shall be supplied with end plates and the Contractor shall drill two 25mm diameter holes in each plate over and above those required for the circuits detailed.

- A. The spare holes shall be fitted with hexagonal plugs and locknuts.

All natural bars shall have sufficient ways to enable the maximum number of single-phase circuits to be connected without bunching. Connections to natural bars shall be made in such a manner that they correspond to phase connections.

ELECTRICAL INSTALLATIONS (CONTD)

Materials and Workmanship (contd)

Where distribution panel are installed in locations from their controlling switches they shall have isolating switches of ratings schedules mounted adjacent to integral panel.

On each distribution panel a circuit list shall be provided on the inside of the panel door, clearly marked in indelible ink.

Conduits shall be heavy gauge high impact PVC not less than 15mm external diameter and manufactured to B.S 4607. All conduits shall be free from mechanical damage and shall be adequately protected both on site and when installed in building structure. The contractor shall be responsible for inspecting the conduit and accessories for damage before the final building finishes are applied.

All joints in conduits shall be made using push-in-types of couplers and accessories, assembled with the adhesive supplied by the manufacturer.

Where conduits cross expansion joints, the Contractor shall install expansion couplers at the position of the expansion joint and at right angles to it.

All cables shall be color coded in accordance with the Supply Authority Regulations. The exact type cable shall be as specified on the drawings. The cable types between equipment and buildings shall be as specified. No jointing of cables will be permitted.

Unless otherwise, specified, all general socket outlets shall be rated at 13 Amp and be of the three rectangular pin type to BS 1363: 1967.

The contractor shall provide a complete lighting protection system. The whole shall be in accordance with British Standard Codes of Practice No. 326.

The position of the whole of the installation shall be agreed with the Architect/Supervising Officer before work commences.

- A. The contractor's attention is hereby drawn to the fact that all height of lighting fixtures etc., above finished floor level must be consistent. Care should be taken in respect of distance of switches from door architraves.

Unless otherwise specified on the drawings, all units shall be mounted at the following heights from finished floor level taken to the center of the unit.

1.0 Lighting switches	-	1400mm
2.0 Sockets outlets-general	-	300mm
3.0 Telephone outlet	-	1400mm
4.0 Motors Central Units	-	300mm
5.0 Individual Item of Switch	-	1400mm

Generally, switchboards and distribution board shall be installed so that any item, to which easy access is required such as a fuse, circuit breaker, instrument etc., is not more than 215mm above finished floor level.

Testing

- C. The contractor shall serve all notice on Supply Authority for testing, pay all fees in connection therewith, and should any additional charges be made for retesting, the Contractor shall pay them.

The Architect/Supervising Officer shall have full power to require any materials or work to be tested at the Contractor's expense in order to prove their soundness and efficiency.

11.0 FLOOR, WALL AND CEILING FINISHINGS

Note:

All finishing materials will have to be brought on site for approval and where necessary installed as a Control Sample.

11.1 MATERIALS Cement shall be ordinary Portland cement to BS 12.

Colored cement shall also be to BS 12 and shall be obtained from an approved manufacturer.

Sand shall be sea or pit sand to BS 1199.

Water shall be clean and free from impurities.

Glazed wall tiles and fittings shall be to BS 1281: and as manufactured by Buchtal Ceramics, PVC (vinyl) floor tiles shall be to BS 3260. Terrazzo floor tiles shall be to BS 4131.

Soft board for ceilings shall be to BS 1142: Part 3. Adhesive shall be of approved types.

Storages

All cement and aggregates shall be stored in accordance with the provisions set out in Concrete Work. If the materials become damaged or are contaminated or have

deteriorated, they shall be rejected and shall be removed from the site immediately at the Contractor's expense.

Samples

Samples of all tiles and other materials shall be submitted to the Consultants for approval before ordering.

A sample panel of any finishing shall be prepared for approval, if directed. The applied finish shall not vary in quality or color from the approved sample.

11.2 WORKMANSHIP

Rendering

Adequate drying time shall be allowed for block walls and concrete surfaces to thoroughly dry before rendering and no rendering shall commence until the walling and concrete is thoroughly matured and completely dried out. Surfaces to be rendered shall have the wall joints raked out to a depth of 10mm and concrete surface shall be hacked to form a key. All surfaces should then be thoroughly brushed down with a wire brush to remove any efflorescence and all loose and flaky particles, grease or oil patches and the wall soaked with water.

The Contractor shall allow for and perform any necessary dubbing out of surfaces in the same materials as the render specified and leave the surface ready for rendering.

Rendering shall consist of one part cement to six parts of sand by volume mixed dry with sufficient water added to make a workable consistency for immediate use; each batch shall be used within twenty minutes of mixing or such shorter period as may be directed.

Rendering shall not be less than 12mm thick overall, unless otherwise directed, generally executed in the best workmanlike manner and shall be finished fair, true and plump and smooth with a wood float.

Before decoration commences, all plasterwork shall be approved by the Consultants and any hollow areas, cracks, blisters or other defects shall be cut out and made good at the Contractor's expense.

All making good shall be cut out to a rectangular shape with under cut edges to form a dovetail key, and shall be finished flush with surrounding rendering.

All arises and internal angles shall be true level or plump. Angles and arises shall be pencil round only. Curved angles and rounded will only be permitted when specifically required.

Finishings around pipes, brackets, fittings and up to frames, skirtings and the like shall be made good as required and all fittings etc., left clean, tidy and in good perfect order on completion.

Wall tiles

The walls shall be prepared for tiling in accordance with recommendation of BS 5385; Part I: 1976.

Glazed ceramic tiles shall be fixed to rendered surfaces with an approved adhesive in accordance with the manufacturer's instructions and finished true and plump.

External angles and exposed top courses shall be provided with rounded top edges tiles.

Cement and sand beds and backings

The cement and sand shall be mixed in the proportions specified. Immediately before laying, the surface shall be finished as described appropriate for the finishing material to be laid or fixed.

Beds shall be kept damp for at least seven days after laying to allow for proper curing.

Vitrified colored ceramic floor tiles

Lay tiles strictly in accordance with the manufacturer's instruction and to the satisfaction of the Consultants using adhesive specified by the manufacturer.

On completion, run over tiles with a white cement grout, wipe off all surplus and leave clean.

PVC vinyl floor tiles

The cement and sand trowelled bed to receive PVC tiles must be absolutely level and to the satisfaction of the Consultants before tiling may commence.

Lay the tiles strictly in accordance with the manufacturer's instructions using adhesive specified by the manufacturer. All tiles must be laid to the complete satisfaction of the consultants.

Hardboard ceilings

Hardboard to ceilings where so described shall be as specified and fixed as shown on the drawings to the complete satisfaction of the Consultants.

12.0 GLAZING**12.1 MATERIALS****Glass**

The glass shall be to BS 952; 1964 and free from all defects. Deliver glass to site in proper containers with makers name, guarantee, type of glass and thickness or weight marked on the outside of the containers. Samples of glass are to be supplied for approval, if required.

Putty

The putty to be metal casement putty by an approved manufacturer. Deliver putty (and glazing compounds) in original sealed tins, bearing the manufacturer's labels.

Mirrors

Mirrors shall be 6mm silvering quality polished plate or float glass with damp-proof coating to back and with polished edges.

12.2 WORKMANSHIP

Glazing

Execute all glazing in accordance with the best practices of the trade, generally laid out in CP 152; 1966.

Timber rebates to be cleaned, primed and painted one coat lacquer. Metal rebates to be cleaned and primed. Glass to be cut to size with a small clearance and to be back puttied, pegged for metal rebates and neatly front puttied. Take care to ensure putty does not appear beyond site lines.

Glass to internal doors and screens and other places where vibration may occur shall be bedded in wash leather with beads, (measured separately) fixed with brass and sups and screws.

Glaze all windows except toilet windows with float sheet glass as specified. Glaze toilet windows generally with obscured glass as specified.

Cleaning

Clean the glass inside and outside on completion to the satisfaction of the Consultants. Replace with new all cracked, scratched, damaged or defective glass.

Replacement

Provide 1 box per building of each type of louvre blades specified and hand over to employer on completion.

13.0 PAINTING AND DECORATING

13.1 GENERALLY

Climate

Advise the manufacturers that the paint is to be used in a coastal tropical climate and obtain their guarantee to the suitability of materials supplied.

Workmen

Non other than skilled workmen are to be employed, except apprentices and laborers. A properly foreman is to be constantly on the job whilst the work is proceeding.

Scaffolding

Provide all the necessary scaffolding, tools, appliances, and everything else required for the execution of the work.

Dust sheets

Provide ample supply of clean dust sheets for the adequate protection of floors, fixtures and surfaces not to be painted.

Fittings

All metal fittings and fastenings not to be painted, are to be removed before the preparatory processes are commenced, cleaned and refixed in position on completion. Switches and similar items which cannot conveniently be removed shall be completely masked during the painting operations.

13.2 MATERIALS

All paints and paint materials shall be obtained from approved suppliers and be of approved brands.

Primer for concrete, block work and rendered surfaces shall be alkali resisting pigment primer (non-saponifiable) applied in one coat.

Primer for ungalvanized, unprimed metalwork shall be lead based priming paint to BS 2523; Type B of Type C.

Primer for galvanized and sherardized metalwork shall be calcium plumbate primer to BS 3698 Type A.

Primer for woodwork shall be lead free primer to suit the gloss paint.

Linseed oil to be BS 242; 1969.

Stopping to be composed of nine parts putty in accordance with BS 544 to one part of stiff white lead in accordance with BS 238: 1967.

Knotting to be to BS 13336, 1971.

Woodfillers to be paste type as approved to matching stain color. Do not mix filler with stain.

Turpentine to be to BS 244; 1962.

Emulsion paint shall be any one of the following types: acrylic polymer, ethylene/vinyl acetate polymer, versatate co-polymer and shall not be diluted with water except in strict accordance with the manufacturer's instructions. The mist coat shall be mixed with a recommended petrifying liquid instead of water.

Gloss paint shall be ready mixed to the type approved and having a high gloss of enamel finish. The quality used shall be either exterior or interior quality according to the position of the work. The manufacturer's recommended undercoating shall be used.

Where different grades are manufactured for use either particularly on wood or on metal, only the correct grade shall be applied.

Proprietary types of paint such as "Sandtex" shall be from approved manufacturers.

Deliver paints to the site in the manufacturer's sealed containers bearing the manufacturer's names, guarantees, type of paint and quality marked on the outside.

13.3 WORKMANSHIP

Painting schedule

A painting schedule will be provided prior to the execution of the work to enable work to proceed at the appropriate time. The schedule will give all the necessary information on color, type of paint, surfaces to be coated and method of application.

Preliminary trials

Preliminary trials of color proportions shall be made for approval of the Consultants and when approved, the whole batch to be used on any one surface shall be prepared at once to avoid color variation.

Combination coats

Paints and finishes, applied in any one combination of coats for any one surface, shall be provided by one manufacturer and be guaranteed by him to be satisfactory when used in successive coats, except for red lead and other metal primer.

Mixing

All paints shall be thoroughly mixed before use, unless there is a specified instruction to the contrary on the container e.g. 'do not stir'. They shall be so stored as to avoid exposure to extremes of temperature.

All paints are to be mixed, used and applied strictly in accordance with their manufacturers' recommendations. For non-specified paints, work shall be executed in accordance with the best practices of the trade, generally laid out in CP 231; 1966.

Thinning

Paints shall not be thinned unless specified approval but, when necessary, thinning shall be carried out in with the type of thinner and in the proportion recommended by the manufacturers of the paint. Gloss paints and vanish shall not be thinned under any circumstances.

Mould and Mildew

All mould or mildew must be thoroughly removed from surfaces to receive paint work by the application of approved fungicidal solution.

Application

Primers shall be applied by brush, subsequent coats by brush, spray or roller as has been previously agreed. Surfaces must be free from condensation and dusted or wiped with a rag to ensure freedom from dust and dirt.

Surfaces shall be evenly coated and free from runs, skins, dirt and bristles. Remove all drips, splashes and overpainting to edges, touch up and make good. Remove all finger marks and leave clean.

Dried and rubbed down

All coats of paint shall be thoroughly dry before the subsequent coat is applied. Each coat shall be rubbed down with fine sand paper.

Weather

No painting is to be done on exterior work when atmosphere is laden with dust during rainy or misty weather or on surfaces not thoroughly dry.

Protection

Protect adjacent surfaces from damage, stain and paint splatter. Paint shall be removed from all such surfaces where not required.

Rendered surfaces (concrete)

New rendered surfaces shall be allowed the maximum time possible for drying out, no paint shall be applied until they are thoroughly dry.

Efflorescence present on the surface shall be wiped down using a dry course rag, followed by a rag dampened with clean water and allow to dry of. Surface so treated shall be inspected after four to seven days to ensure that they are fit for decoration. Each undercoat shall be rubbed down lightly with glass paper and cleaned down before application of the following coat. Each coat shall be hard, dry and free from condensation before the next is applied.

Woodwork

Shall not be painted when set or during or immediately before rain. Joints, tongues, grooves and inaccessible ends shall be primed before erection and given two coats on exposed end grains. Woodwork to be painted shall be knotted, primed and stopped in workshop before delivery to the sites or as soon as possible on site and stored cover. All top, bottom and side and joinery shall be given the full number of coats specified where accessible.

Large knots to be removed and replace with sound wood; small knots to be treated with two coats of knotting. Fill all holes and irregularities and rub down with sandpaper to smooth even finish. Touch up priming where damaged during the works before commencing painting.

Hardwood not required to be painted; clean and rub down with wire wool, apply one coat of polyurethane and allow to dry. Rub down with wire wool again and apply a further coat of polyurethane; allow to dry and repeat the process once more.

Metal work

All unprimed metal work which is to be painted shall be cleaned down by wire brushing and scrapping, to remove all possible scale, dirt or grease and shall be primed immediately afterwards.

Prime interior metal work with one coat red lead.

Prime exterior metal work (including stair rails and balustrades) with two coats "approved primer" strictly in accordance with manufacturer's instruction.

Where galvanized surfaces have become damaged, the Contractor shall touch up the damaged areas with an approved cold galvanizing solution before painting.

14.0 DRAINAGE

14.1 GENERAL

Regulations

The Contractor shall comply in all respect with regulations and bye-laws of the local authorities.

Other services

Special care must be taken by the Contractor during the Excavations to avoid damage to any drains, cable or other services which may be encountered. Should any services be encountered, the Contractor is to ensure that they are not in use before grubbing them up. Any live services encountered are to be adequately protected and approved by the Architect is to be obtained for the method adopted by the Contractor.

14.2 MATERIALS

Cement, sand, aggregate, water and sandcrete block

Cement, sand, aggregate, water, concrete and sandcrete blocks shall all be as previously specified.

UPVC pipes and fittings

UPVC pipes and fittings shall comply with BS 4660; 1973. "Unplasticised PVC underground drain pipes and fittings"

14.3 INSTALLATION

Excavations

Excavations for drains shall be in straight lines to stated depths and gradients and of sufficient width to allow proper laying of pipes. Provide all necessary earthworks. Where excavations are made deeper than required, they shall be filled and adequately consolidated to the correct level with selected fine material.

The excavations shall be kept free from surface or percolating water by pumping or otherwise. Compact and clear bottoms of excavations.

Prices for excavation shall include for grading ground under beds, backfilling, removing surplus excavated support. For the purpose of calculating the "extra over" quantities of excavation in rocks, breaking up concrete etc., met within the excavation, the width of each has been assumed to be (300mm) wider than the internal diameter of the pipe in the trench and prices shall be deemed to allow for any other width, which may actually be excavated.

Laying

Drains shall be laid in straight lines and to even gradient. An inspection chamber shall be provided at every change of direction. Bed and surround UPVC pipes and fitting in sand to a minimum thickness of (100mm) all round and well consolidated Joints shall be made with rubber sealing rings complying with BS 2494: Part 2.

Backfill a minimum of (300mm) hand packed materials and remainder of backfill shall be normal excavated material consolidated in (150mm) layers. No trench shall be filled in until after the drain has been tested and passed.

Disposed of surplus excavated material where directed on site.

Manholes and inspection chambers

Construct inspection chambers with concrete base and block wall sides to sizes and thickness shown on the drawings. In the event of no thickness being given, manholes up to (900mm) depth shall be built in (150mm) block work (900mm) and not exceeding 1000mm (225mm).

Render internally (12mm) thick trowelled smooth.

Provided benching in fine concrete (1:1 1/2:5 with 12mm aggregate) rising vertically from edge of channel to evenly sloping to walls at a gradient of 1:10, float to smooth surface.

Provided salt glazed channels and branch bends. Channels and branches shall be section.

Provide reinforced concrete cover slabs to thickness shown.

Install step irons as previously specified, in all manholes over (900mm).

Septic tanks

Construct septic tanks in concrete or blockwork as detailed.

Septic tanks shall conform in all respect to the standard drawings.

Testing

The whole of the drawing shall be tested when laid to the satisfaction of the Architect and in accordance with the requirements of the local regulations.

The test, unless otherwise permitted, shall be by means of water, and be carried out as laid down in CP 301 and 304.

Any part of the works failing the test shall be cut out and rectified at the Contractor's expense.

Storm water

Surface 4 water channels shall be precast concrete (1:2:4 aggregate) cast in (900mm) lengths, and unless otherwise detailed, shall conform in all respect with the Ministry of works standard drawing Nr A. 500f. The joints shall be rebated and grouted in cement and sand (1:3). The drains are to be laid flush to adjacent finished ground levels.

Section VIII. Drawings

Insert here a list of Drawings. The actual Drawings, including site plans, should be attached to this section or annexed in a separate folder.

Section IX. Bill of Quantities

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PRELIMINARIES

ITEM	DESCRIPTIONS	Amount Le
	<p><u>PRELIMINARIES</u></p> <p><u>PRELIMINARY PARTICULARS</u></p> <p><u>Project</u></p> <p>A The project comprises the General Rehabilitation of the Bank of Sierra Branch Building in Kenema.</p> <p><u>Parties and Consultants</u></p> <p>B Employer - The Bank of Sierra Leone Siaka Stevens Street, Freetown.</p> <p>C Architects, Engineers and Quantity Surveyors - Tropical Environmental Design Associates Chartered Architects 63 Wellington Street Freetown, Sierra Leone Tel: 224616</p> <p><u>Description of site</u></p> <p>D The site is situated at Dama Road, Kenema.</p> <p>E The Contractor's attention is drawn to the fact that work on the above named Project will be executed during the rains and must take all necessary steps to ensure the smooth and satisfactory discharge of his contractual duties</p> <p>F The site may be visited at any time during normal working hours by prior agreement with the Architect/Supervising Officer.</p> <p>B Bidders are recommended to visit the site and will be deemed to have included in their bid for all site conditions.</p> <p><u>Method of Measurement</u></p> <p>E The word 'Provisional' is used in this Bill of Quantities where detailed information was not available at the time the Bill was prepared and such items will be liable to remeasurement before the completion of the contract.</p>	
	To Collection	

ITEM	DESCRIPTIONS	Amount Le
F	<p><u>PRELIMINARY PARTICULARS (CONTD).</u></p> <p>The word 'approved' when used in connection with a named manufacturer shall mean as approved by the Architect before the Contractor submits his bid.</p>	
G	<p>the word 'ditto' shall mean 'the same as the whole of the last item' and the word 'but' shall be implied in any qualifying matter accompanying the abbreviation.</p>	
B	<p>The Contractor shall, if so requested, provide or execute any sample of materials, colours, etc. for the Architect/Supervising Officer, to approve or reject. Should the Architect/Supervising Officer rejects any sample further samples shall be provided until such approval is obtained.</p>	
C	<p>The Architect/Supervising Officer retain the power to reject any materials or workmanship which in their opinion, are unsatisfactory or not up to sample and the Contractor shall, upon such rejection, immediately remove or amend such rejected materials or workmanship at his own expense.</p>	
D	<p>Where goods or materials are to be manufactured by a manufacturer, the manufacturer is not deemed to be a Nominated Supplier as described in the Standard Method of Measurement Paragraph B10.</p>	
E	<p>All goods and fittings delivered to the site shall be received the charge of the Contractor, who shall satisfy himself that they are sound, correct and in good order and he shall replace at his own cost all fittings found to be damaged on completion.</p> <p><u>GENERAL MATTERS</u></p> <p><u>Basis of Tender</u></p>	
F	<p>The Contractor is required to prepare his Tender on a Fixed Price basis. Fluctuations in materials and Labour Rates will not be allowed</p>	
A	<p><u>Modification of Bid</u></p> <p>In no circumstances must any alteration or amendment be made by the Contractor to the text, wording or figure in this Bill of Quantities or to any of the Tender Documents unless specifically ordered by the Architect/Supervising Officer Quantity Surveyors.</p>	
	To Collection	

ITEM	DESCRIPTIONS	Amount Le
	<p><u>GENERAL MATTERS (Contd)</u> <u>Modification of Bid (contd)</u></p> <p>B Should any unauthorised alteration or amendment be made the same will not be recognised and the documents will be read and construed as if the aforesaid alterations had not been good.</p> <p>C Should the Contractor leave unpriced any of the items in the Bill of Quantities he shall comply with all the obligations attached hereto without any extra charge to the Employer.</p> <p>D The contractor shall make full enquiries to satisfy himself that the materials which are described in these Bill of Quantities and to which his price shall relate will be available in sufficient quantities to enable him to complete the work within the Contract period, no claims will be entertained on the grounds that the Contractor had to resort to alternative sources of supply for materials specified.</p> <p><u>Availability of Materials</u></p> <p>E - The Contractor shall be deemed to have made all enquiries as to the sources of his labour and to have made all provisions in his tender for every costs to him of providing and maintaining the labour force necessary to complete the contract including all supervisory costs associated therewith.</p> <p>F No claims will be entertained on grounds associated with failure by the Contractor to observe this condition.</p> <p><u>Adequacy of Tender Price</u></p> <p>A The Contractor is deemed to have acquainted himself of in this Bill of Quantities and in particular, items he considers to have monetary value. Any item in this Bill of Quantities not priced shall be deemed to have been allowed for elsewhere in the Bill of Quantities. The Contractor shall however note that where items have been priced in this Bill of Quantities but not executed, the Architect/Supervising Officer shall either instruct the Contractor to carry out the Works described in the item or deduct such amount from the sum.</p>	
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ITEM	DESCRIPTIONS	Amount Le
	<p><u>GENERAL MATTERS (CONTD).</u></p> <p><u>CONTRACT</u></p> <p><u>Form, Type and Conditions of Contract</u></p> <p>C The Form of Building Contract under which the work is to be executed will be the General Conditions of Works Contract of the Republic of Sierra Leone Procurement of Works (International Competitive Bidding).</p> <p>D The Contractor is advised to inspect the General Conditions for Works Contracts and allow here for such sum or sum as he may deem necessary in respect of all or any of the following clauses of the Conditions of Contract previously referred to:</p> <p><u>Contractor's Liability</u></p> <p>A The Contractor shall do no unlawful act, nor omit to do anything required by law, in or about or incidental to the execution of the with Contract, and all such work performed by the Contractor and the Contractor's servants shall be done without negligence and due care, skill and ability so as no to occasion any avoidable or unlawful interference, injury, nuisance inconvenience or prejudice whether immediate or consequential, with or to the rights, interests or property of any persons or corporations or local or other authorities and shall include in his Bid the cost of any fees and charges including any Act of Parliament, any rates or taxes legally demandable under Police Regulations or Bye-Laws in respect of the Works.</p> <p>B The Contractor's operatives are limited to the use of only those areas of the site which it is essential they should or enter for the execution of the Works or for access. The entry to all other areas or buildings, shall be prohibited Plants, temporary buildings, spoil heaps, etc. shall be placed only in area or positions previously agreed with the Architect/Supervising Officer.</p> <p>C The Contractor shall be responsible for any nuisance caused by his work people involved in this Contract including those of Nominated Sub-Contractors, to adjoining buildings and ground surrounding the site and he shall make good all such damage and settle any <u>claims of compensation</u> at his expense.</p>	
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ITEM	DESCRIPTIONS	Amount Le
	<p><u>GENERAL MATTERS (CONTD).</u> <u>CONTRACT (CONTD).....</u></p> <p><u>Obligations and Restrictions Imposed by the Employer</u></p> <p>A Any rock, etc. obtained from the excavation is to be the property of the Employer and may, if approved, be used on the Works. The quantity is to be measured and value assessed by the Quantity Surveyors and deduction from the Contract Sum.</p> <p>B The Contractor is prohibited from specifically excavating for rock on the site.</p> <p>C Any Materials, other than earth filling which are discovered upon the site during excavation and the like and which are suitable for incorporation in the permanent work may only be used with prior written permission of the Architect/Supervising Officer.</p> <p>D Should any useful building materials or article of value antiquarian or otherwise be uncovered or discovered during the progress of the work, the Architect/Supervising Officer must be notified immediately and all such materials shall be disposed of or removed at the absolute discretion and in accordance with the instructions of the Architect/Supervising Officer.</p> <p>E The Contractor shall provide a notice board for the duration of the contract incorporating the title of the works, his own name, the name of the Nominated Sub-contractors and the standard name of boards of the consultants.</p> <p>F The Contractor shall obtain the approval of the Architect/Supervising Officer as to the design and size of the board, the style, disposition and size of lettering before erection.</p> <p>G The Contractor shall include for painting the board, all lettering thereon and repainting as necessary to maintain an appearance satisfactory to the Architect/Supervising Officer.</p> <p>H The Contractor is prohibited from displaying or permitting the display of any other boards or advertisements.</p>	
	To Collection	

ITEM	DESCRIPTIONS	Amount Le
	<p><u>CONTRACT (CONTD).</u></p> <p><u>Obligations and Restrictions Imposed by the Employer (contd).</u></p> <p>A The Contractor shall allow for producing within three weeks of taking possession of the site or in collaboration with the Architect/Supervising Officer a Programme and Progress Chart for the whole of the Works, including the Work of Nominated Sub-contractors and Direct Contractors.</p> <p>B Two copies of this Chart shall be forwarded to the Architect/Supervising Officer and one copy retained in the site office pinned up in a prominent position.</p> <p>C The site office chart shall be kept up to date in order that the actual progress of each part of the Works can be readily ascertained</p> <p>D Allow for providing monthly, four sets of progress photograph of post card size, as directed by the Architect/Supervising Officer to a maximum of two photographs per building or sections thereof.</p> <p>E Allow here for all expenses in accommodating and attending regular progress site meetings under the Chirmanship and direction of the Architect/Supervising Officer.</p>	
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ITEM	DESCRIPTIONS	Amount Le
	<p><u>CONTRACT (CONTD).</u></p> <p><u>WORKS BY NOMINATED SUB-CONTRACTORS, GOODS AND MATERIALS</u></p> <p><u>FROM NOMINATED SUPPLIERS AND WORKS BY PUBLIC BODIES.</u></p> <p><u>Works by Nominated Sub-contractors.</u></p> <p>A The Contractor shall arrange and obtain from all Nominated Sub-Contractors full particulars of their requirements with regards to date of commencement of Work, delivery of materials to site and the positions of all mortices, chases, holes etc. as no claim for additional payment in this respect will be allowed.</p> <p>A The Contractor shall arrange and obtain from all Nominated Sub-Contractors full particulars of their requirements with regards to date of commencement of Work, delivery of materials to site and the positions of all mortices, chases, holes etc. as no claim for additional payment in this respect will be allowed.</p> <p>B The Contractor shall arrange with all Nominated Sub-Contractor for inspection of their books, invoices and receipts to allow for the checking of those cost which forms the basis upon which the payment shall be made to them</p> <p>C The Contractor shall allow for all attendance on Nominated Sub-Contractors, except where described in the PC Sums Sections, and such attendance shall include the following:</p> <p>(a) Free use of erected scaffolding, ladders and hoist.</p> <p>(b) All necessary lighting, water and power for hand tools.</p> <p>(c) Free use of messrooms, sanitary accommodation and welfare facilities.</p> <p>(d) Provision of space for office accommodation and storage of plant and materials.</p> <p><u>Goods and Materials from Nominated Suppliers</u></p> <p>D The Contractor shall allow for taking delivery, inloading, unpacking, providing safe storage accommodation, returning empty packing carriage paid, site handling and lowering goods of Nominated Suppliers to the requisite positions in the Works and the 'Fix' used in this Bill of Quantities is deemed to include all the above requirements.</p>	
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ITEM	DESCRIPTIONS	Amount Le
	<p><u>GENERAL FACILITIES AND OBLIGATIONS</u></p> <p><u>PRICING</u></p> <p>A The following items, whilst generally implicit in the Contract are given for convenience in pricing <u>Plants, tools and vehicles</u></p> <p>B The contractor shall provide all plants, tools, vehicles, tackle, hoisting gear etc, required and he shall maintain such as is required for the proper execution of the Works.</p> <p>C Should the Bid provide for the use of mechanical plant and the Contractor finds himself unable to use or be prevented from using such mechanical plant, and extra costs so incurred shall be at the Contracto's expenses.</p> <p><u>Scaffolding</u></p> <p>D The Contractor shall provide all general scaffolding of the Works.</p> <p>E The whole of the scaffolding must be constructed and maintained in accordance with all safety and other construction <u>Site Administration and Security</u></p> <p>F The Contractor shall employ and keep on the site at all time a competent General Foreman who will not be changed, removed or replaced during the period of Contract without the prior permission, in writing of the Architect/Supervising Officer.</p> <p>G The General Foreman to be used by the Contractor shall be either and expatriate having sound knowledge and experience in building construction or a locally trained Sierra Leonean with a minimum of fifteen to twenty years experience in a reputable Contractor's Organisation.</p> <p>H The Contractor shall be entirely responsible for safeguarding the Works materials and plant from theft and /or damage done by unauthorise entry, etc. and shall be liable to make good all damaged or loss at his own expenses.</p>	
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ITEM	DESCRIPTIONS	Amount Le
	<p><u>GENERAL FACILITIES AND OBLIGATIONS (CONTD).</u> <u>PRICING (CONTD).</u></p> <p>A The contractor is specifically required to take all reasonable precautions to maintain the security of the premisses at all times.</p> <p>B The Contractor shall provide all necessary watching and lighting by day and night, including weekends, for the duration of the Contractor.</p> <p><u>Transport for Work-people.</u></p> <p>C The Contractor shall provide all transport required and pay all transport costs in connection with the Contract.</p> <p>D The Contractor shall include for the cost of transporting work-peole to and from the site including fares, hire of vehicles or any other costs.</p> <p><u>Protecting the Works from inclement weather</u></p> <p>E The Contractor shall provide all necessary covering, ect and cover and protect all materials and work from injury by the weather or any other cause during the progress of the Works</p> <p>F The Contractor shall make good all damage, due to lack of protection at his own expenses.</p> <p><u>Water for the Works</u></p> <p>G The Contractor shall provide all water required for the works including that required by Nominated Sub-Contractors from whatsoever source may be available, pay all fees and charges and provide all temporary storage and plumbing. The onus is on the Contractor to investigate abd ensure that such water is available.</p> <p><u>Lighting and power of the Work</u></p> <p>H The contractor shall provide all necessary temporary electric lighting and power for the works including all necessary flood lighting where work after dark is involved including that required by Nominated Sub-contractors and shall pay all fee and charges.</p>	
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ITEM	DESCRIPTIONS	Amount Le
	<p><u>GENERAL FACILITIES AND OBLIGATIONS (CONTD).</u></p> <p><u>PRICING (CONTD).</u></p> <p><u>Lighting and power of the Work (contd).</u></p> <p>A Where electricity is available adjacent to the Contractor must allow here or in his prices for a metered connection and pay all charges in connection therewith for current consumed.</p> <p><u>Temporary accommodation for the use of the Contractor</u></p> <p>B The Contractor shall provide and maintain all necessary, sheds offices, accommodation, messroom, sanitary accommodation (See safety, Health and Welfare Clause) including facilities for Nominated Sub-contractors.</p> <p>C The Office accommodation shall be provided with table, chairs and lighting and shall be kept clean.</p> <p><u>Safety, health and welfare of work-people</u></p> <p>D The Contractor shall allow for providing adequate messrooms, sanitary accommodation, welfare and first-aid facilities if required all in accordance with the construction code of welfare conditions and the Statutory Building and Construction Regulations which may be applicable and currently in force based on the number of work-people including those by Nominated Sub-contractors, employed on the Works.</p> <p><u>Disbursements arising from the employment of Work-people</u></p> <p>E The Contractor shall include for all costs and expenses of Bonusing, Incentive Money, Holidays with pay, Travelling Time Travelling Expenses, Guaranteed Time, Insurance Contributions including Pensions, all payments under any Trade Union Working Rule Agreement and all other proper emoluments and expenses of labour for work-people employed in this Contract.</p> <p>F The Contractor shall include for all costs and expenses of overtime that may be necessary to complete the Works.</p>	
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ITEM	DESCRIPTIONS	Amount Le
	<p><u>GENERAL FACILITIES AND OBLIGATIONS (CONTD).</u> <u>PRICING (CONTD).</u></p> <p><u>Disbursements arising from the employment of Work-people (contd).</u></p> <p>G The Contractor shall be deemed to have satisfied himself as to supply or availability and conditions affecting work people as no claim for additional payment in this respect will be allowed.</p> <p>A The Contractor shall employ in the execution of the Works such work-people who are skilled in their various trades or callings.</p> <p><u>Protection of public and private services</u></p> <p>B Allow for upholding, maintaining, protecting, removing or relocating all pipes, ducts, sewers, services, mains, overhead cables, etc. during the execution of the Works. The contractors shall, at his own expense, make good any damage done by any cause within his control or pay any costs or charges in connection therewith.</p> <p><u>Removing rubbish etc</u></p> <p>C Remove all rubbish from time to time as it accumulates, including that of Nominated Sub-Contractors, and at completion scrub all floors, clean all glass both side, clean all gullies, down pipes, etc. remove surplus materials of all kind, remove all blemishes, touch up decorations and leave the whole of the Works and Site in a clean and perfect condition to the satisfaction of the Architect/Supervising Officer.</p> <p><u>Drying the Works</u></p> <p>D The Contractor shall allow for all necessary appliance, fuel and labour for drying out the Works, and leaving same in a dry and clean condition.</p> <p><u>Control of noise, pollution etc.</u></p> <p>E The Contractor shall control noise, pollution etc. as required by any Act of Parliament or Local Authority Regulation on the site during progress of the Works.</p>	
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ITEM	DESCRIPTIONS	Amount Le
<u>COLLECTION</u>		
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<u>PRELIMINARIES</u>		
<u>Carried to General Summary</u>		

BANK OF SIERRA LEONE KENEMA

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	DEMOLITION				
A	Clearing generally		Item		
	Roofs				
B	Take up existing roofing sheets and roof structure, remove from site; prepare to receive new roof	638	M2		
C					
D	Take off existing roofing screed including bituminous felt and remove from site approximately 1273 m2		Item		
E	Remove existing air conditioning ducts; roof fans and all other accessories seal openings and make good all works disturbed		Item		
	Floors				
F	Take up existing ceramic floor tiles and remove from site; clean and prepare floor to receive new tiles	2106	M2		
	Ceilings				
G	Clean and apply approved sealant to concrete ceilings	2106	M2		
	Walls				
H	Pull down demountable/stud partitions, glazing, doors and remove from site	139	M2		
J	Hack off existing ceramic wall tiles and remove from site; clean and prepare walls to receive new tiles	84	M2		
K	Wash existing walls to remove stains; inspect for minor cracks and other imperfections make good as necessary to receive new finishes	1885	M2		

	To Collection				

1/1

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	Demolition C'ontd				
	Plumbing				
A	Pull down existing water closets cut all pipes to a convenient joint and remove from site	10	NR		
B	Pull down existing wash hand basins cut all pipes to a convenient joint and remove from site	10	NR		
	Windows				
	-				
C	Take down existing louvre windows including frames making good all work disturbed and remove from site	35	M2		
D	Strip out all electrical wiring make good all work disturbed		Item		
	Columns				
E	Hack off existing ceramic tiles to columns and remove from site; clean and prepare columns to receive new finishings	85	M2		
	-				
F	Pull down existing kitchen wall cabinets; shelves and frame make good all work disturbed and remove debris from site	1	NR		
G	Pull down existing kitchen worktops; base; frame and sink, cut plumbing connections to a convenient position; make good all work disturbed and remove debris from site	1	NR		
	Doors				

D	Take down existing doors including frames making good all work disturbed and remove from site	51	NR		
	To Collection				

1/2

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	Demolition C'ontd				
	Stairs				
A	Take up existing tiles and screed to stairs and remove from site; clean and prepare stairs to receive new tiles		Item		
B	Pull down existing cashiers cubicles and remove from site 8Nr		Item		
C	Tale off stone cladding to cashiers cubicles and wall and remove from site	55	M2		
D	Take up perished pvc tiles to stairs and remove from site; clean and prepare stairs to receive new finishings		Item		
E	Clean existing curtain walling making good as necessary	151	M2		
F	Clean existing metal sun shades; make good as necessary; polish and leave as new		Item		
G	Clean gutter; remove all debris, zyprex water proof screed or similar to floors	78	M		
H	Take up existing roof screeds 23m2 and remove debris from site		Item		

	To Collection			Le	
	COLLECTION				
	DEMOLITION				
	Page Nr 1/1				
	Page Nr 1/2				
	Page Nr 1/3				
	Total Carried to Main Summary			Le	

1/3

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS</u>				
	<u>ROOF STRUCTURE</u>				
	<u>STRUCTURAL STEELWORK PROVISIONAL</u>				
	<u>COMPOSITE UNITS</u>				
	<u>Fabricated steel; B S 4; bolted connections</u>				
	<u>Roof truses</u>				
	Pitched roof members including ceiling joists				
	<u>Truses; 50 x 100 x 2.5; 50 x 75 x 2.5; 50 x 50 x 2.5 rolled hollow steel section members, 50 x 50 cleats; 6mm gusset plates welded to members; holding down bolts</u>				
	<u>Supply and fix at roof level approximately 20m above ground floor level; fixing with bolts</u>				

	Dou pitch roof truses				
	clear span 25.00m				
A	25000 x 2.20 high	20	NR		
	clear span 11200m				
B	11200 x 990 high	8	NR		
	<u>50 x 75 x 2.5; rolled hollow steel section</u>				
C	Ties	174	M		
	To Collection				

1/4

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	-				
	purlins				
D	75 x 100	634	M		
	<u>50 x 75 x 2.5; rolled hollow steel section members fixing to background requiring plugging</u>				
E	50 x 75 x 2.5 members	48	M		
	<u>ROOF COVERING</u>				
	-				
	<u>SHEET WORK</u>				
	-				
	<u>Corrugated long span aluzinc roofing sheets, factory coloured, fixing according to Manufacturers Instructions; side laps and end laps; no allowance made for laps</u>				

	-				
	Coverings				
A	Sloping; pitch not exceeding 15 degrees	735	M2		
B	ridge	29	M		
C	cutting to ridges, hips or vertical angles subsequently covered	29	M		
	<u>Approved translucent roofing sheets, factory coloured, fixing according to Manufacturers Instructions; side laps and end laps; no allowance made for laps</u>				
	Coverings				
D	Sloping; pitch not exceeding 15 degrees	127	M2		
To Collection				Le	
1/5					

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
E	ridge	11	M		
F	cutting to ridges, hips or vertical angles subsequently covered	11	M		
G	Flashing twice bent; one end built into blockwork other end dressed over sheeting	45	M		
	<u>FLAT ROOFS</u>				
	-				
	BEDS AND BACKINGS				

	Mortar cement and sand (1:3)				
	23 work to roofs on concrete base; level or to falls; screeded				
H	over 300 wide	723	M2		
J	Approved waterproofing "zyprex" or similar	723	M2		
<u>STAIR FINISH</u>					
<u>BED AND BACKINGS TO STAIR AREAS</u>					
	Mortar cement and sand (1:3) steel trowelled; internal				
	23 work to landings on concrete base; level or to falls; trowelled to receive tile finish				
A	over 300 wide	10	M		
	23 work to treads on concrete base; level or to falls; trowelled to receive tile finish				
B	150 - 300 wide	97	M		
To Collection					Le
1/6					

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	-				
	23 work to undercut risers on concrete base; level or to falls; trowelled to receive tile finish				
C	175 wide	97	M		

	<u>TILE WORK TO STAIRCASE AREA</u>				
	<u>ceramic tiles; butt joints, bedding in 10mm cement mortar (1:4); jointing with cement mortar (1:1)</u>				
	100 x 100 x 12.5 units to landings on cement and sand base; level or to falls				
D	over 300 wide	7	M2		
	100 x 100 x 12.5 units to treads on cement and sand base; level or to falls				
E	250 wide	68	M		
	100 x 100 x 12.5 units to undercut risers on cement and sand base				
F	175 wide	68	M		
	<u>Polished granite covering to landings; level or to falls</u>				
G	over 300 wide	2	M2		
H	250 wide	29	M		
J	250 wide	29	M		
	To Collection				Le

1/7

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	-				
	<u>WINDOWS AND EXTERNAL DOORS</u>				
	<u>Metalwork</u>				
	<u>Doors</u>				
	<u>Metalwork in bronze aluminium sections; coated stoved powder finish, single glazed, clear; 95 x 35 top, middle rails and styles; 197 x 35 bottom rail; locks, frames fixing to background requiring plugging,20 minute integrity fire check</u>				
	700 x 2100; hinges double swing; double doors				
A	overall size 1400 x 2100	2	NR		
	900 x 2100; hinges double swing; double doors				
B	overall size 1800 x 2100	4	NR		
	-				
	<u>Windows</u>				
E	<i>Louvre frames 1500 high with provision for six number blades; fixing to background requiring plugging</i>	64	NR		
F	<i>Louvre glass fixing into frame</i>	192	NR		
	<u>Metalwork in anodised aluminium sections; 95 x 35 rails and styles; 197 x 35 top and bottom rails; 6mm reflective glass</u>				
	-				
	<u>Ease,oil and adjust replace damaged glazing; making good as necessary existing anodised aluminium windows; frames including all other sections</u>				

A	550 x 1000	30	NR		
	To Collection			Le	
	1/9				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
B	910 x 1140	28	NR		
C	1000 x 1000	25	NR		
D	950 x 1140	28	NR		
	<u>INTERNAL WALLS AND PARTITIONS</u>				
	<u>Dense solid precast sandcrete blocks 150 x 225; standard appearance in cement mortar (1:6) stretcher bond</u>				
	Walls or partitions				
A	150 thick	126	M2		
	<u>GLAZED DEMOUNTABLE PARTITIONS</u>				
	<u>"KOMFORT" Ls 90 Partitioning System; comprising of steel vertical stud, stud insulation; plasterboard steel faced panels; steel base channel and levelling platform; wall abutment channel; PVCu joint infill pre assembled glazing window frame where necessary; glazing; abutment foam; doors and all other accessories; installed to manufacturers instructions</u>				
B	Demountable walling, doors; frames and locks	179	M2		
C	Curtain walling, windows and frames		M2		

	<u>"Kameo - 50" aluminium partition system; blue anodized sections 50 x 75 frames, 6mm thick laminated toughned clear glass; service hatch solid lower panels covered with polished granite wall clading</u>				
	-				
D	cashiers cubicles	4	NR		
	To Collection			Le	
	1/10				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	<u>INTERNAL DOORS</u>				
	-				
	<u>WOODWORK</u>				
	-				
	<u>SECOND FIXINGS</u>				
	<u>Hardwood wrought unless otherwise stated treated with preservative</u>				
	-				
	Architraves, cover fillets and the like				
A	50 x 150 chamfers - 2 fixing with screws	199	M		
	<u>COMPOSITE UNITS</u>				
	<u>Flush doors</u>				
	-				
	Half hour fire check flush doors; BS 459 Part 3; by Manor Works Ltd. or similar approved internal quality door; primed before delivery				
B	750 x 2100 44 thick	12	NR		
C	950 x 2100 44 thick	27	NR		
D	1200 x 2100	1	NR		

E	1800 2100	8	NR		
	<u>Wrought Hardwood: door frame and lining sets</u>				
	Frame and lining sets 1Nr, 27Nr; 8Nr 12Nr identical sets				
F	60 x 117, jambs, rebates 1; mouldings 1 grooves 1 fixing with screws countersinking and pellating	164	M		
	To Collection			Le	
	1/11				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
G	60 x 117, head, rebates 1; mouldings 1 grooves 1 fixing with screws countersinking and pellating	35	M		
	-				
	<u>INTERNAL DOORS</u>				
	-				
	<u>IRONMONGERY</u>				
	<u>Ironmongery</u>				
	To hard wood/softwood				
A	Pairs double pressed steel butt hinges	39	NR		
	-				
B	Parkes Union or similar mortice sash lock with keys	27	NR		
	-				
C	Comyn Ching international sign	6	NR		
	-				
D	Mortice bathroom lock	12	NR		
	-				

	<u>COMPOSITE UNITS</u>				
E	L shaped work top;s supports, shelves,doors; marble top; cut out for sink	1	NR		
F	Range of high level kitchen cabinets; supports, shelves, doors including all accessories	1	NR		
	To Collection			Le	

1/12

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	-				
	<u>INTERNAL FINISHINGS</u>				
	-				
	WALL FINISHES				
	<u>PLASTER WORK</u>				
	-				
	Plaster, cement and sand (1:9) rendering coat 6 thick; finishing coat 6 thick; steel trowelled				
	12 coat work to walls on blockwork or concrete base				
A	over 300 wide	252	M2		
	-				
	<u>TILE WORK</u>				

	<u>Ceramic tiles BS 1281, glazed from standard range, butt joints, symmetrical layout fixing with approved adhesive; goruting with white cement</u>				
	<u>20 x 20 x 8 units to walls on cement and sand base</u>				
B	- over 300 wide	197	M2		
	- <u>FLOOR FINISHES</u>				
	- BEDS AND BACKINGS				
	Mortar cement and sand (1:3)				
	23 work to floors on concrete base; level or to falls; screeded to receive non slip ceramic tile finish				
C	over 300 wide	59	M2		
D	over 300 wide	2047	M2		
	To Collection			Le	
	1/13				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	-				
	<u>TILE WORK</u>				
	<u>Ceramic tiles BS 1281, glazed from standard range, butt joints, bedding in 19 cement mortar (1:4); jointing in cement mortar (1:1)</u>				
	450 x 450 x 8 non slip units to floors on cement and sand base; level or to falls				
E	over 300 wide	59	M2		

F	over 300 wide	2047	M2		
	<u>INTERNAL FINISHINGS</u>				
	-				
	<u>CEILING WORK</u>				
	<u>Amstrong mineral solution ceilings with and including all accessories fixing in accordance with manufacturers instructions.</u>				
	Lining to ceilings; at recommended centres both ways with screws to back ground requiring plugging				
A	Ultima planks SL2	1350	M2		
B	edge trim 25 x 25 x 0.4 anodised aluminium; fixing with screws at 450 centres to background requiring plugging	889	M		
	PVC interlocking strips, lining to ceiling; fixing with nails to concrete; plugging or fixing to steel				
C	over 300 wide	59	M2		
	To Collection			Le	
	1/14				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	<u>EXTERNAL FINISHINGS</u>				
	<u>WALL FINISHINGS</u>				
	<u>PLASTER WORK</u>				

	<u>Plaster cement and sand (1:9) rendering coat 6 thick; finishing coat 6 thick; steel trowelled</u>				
	12 work to concrete base; two coats				
A	over 300 wide	217	M2		
	<u>METAL WORK</u>				
B	PVDF Alucobond/Aluminium cladding	245	M2		
	<u>STONE WORK</u>				
C	Clean existing stone work and repolish; leave as new	167	M2		
	<u>PAINTING AND DECORATING</u>				
	<u>NEW WORK INTERNALLY</u>				
	<u>Preparing, one mist coat; one undercoat, two full coats latex based emulsion paint</u>				
	-				
	Plaster walls				
A	over 300 girth	3091	M2		
B	over 300 girth staircase area	35	M2		
C	over 300 girth in confined spaces	162	M2		
	-				
	Plaster ceilings				
	To Collection			Le	

1/15

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				

D	over 300 girth; working in confined spaces	639	M2		
	-				
	<u>Preparing, two full coats Cetabever or other approved transparent satin paint</u>				
	-				
	wood doors				
E	over 300 girth	192	M2		
	<u>wood frames linings and associated mouldings</u>				
	-				
F	150 - 300 girth	275	M		
	NEW WORK EXTERNALLY				
	<u>Preparing, two full coats Cetabever or other approved transparent satin paint</u>				
	-				
	wood doors				
G	over 300 girth		M2		
	<u>wood frames linings and associated mouldings</u>				
	-				
H	150 - 300 girth		M		
	EXTERNAL WORKS				
	-				
A	Clean existing drain, remove all gravel; sediment and all other debris and remove from site		Item		
	-				
B	Excavate drain for trench 750 deep, remove excess rom site	15	M3		
	-				
C	Clear surface of unpaved road of unwanted materials and remove from site	801	M2		
	To Collection			Le	
	1/16				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	-				
D	Excavate top soil 100 thick; remove excess from site	801	M2		
E	Laterite gravel filling 150 thick; compact to 95% maximum dry density	801	M2		
F	Apply cut back macadam MC 30 to surface of compacted gravel/stone base at a rate of 1 litre per second	801	m2		
G	Apply tack coat to pavement surface	801	M2		
H	Provide and spread asphaltic concrete 50 thick; compact to 96% maximum dry density	801	M2		
	<u>Plain insitu concrete, nominal mix 1:6 - 10 aggregate</u>				
	Foundations to kerbs or edgings; laid on hardcore; formwork				
J	250 x 100	88	M		
K	250 x 100; set to curve, mean radius	12	M		
	<u>Plain insitu concrete, nominal mix 1:6 - 10 aggregate</u>				
	Upstands or kerbs; formwork				
L	sectional area not exceeding 0.03m2	88	M		
M	sectional area not exceeding 0.03m2; set to curve, mean radius	12	M		
N	75 thick bedding as blinding to receive channels	2	M3		

		To Collection		Le	

1/17

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>NEW WORKS Contd</u>				
	-				
	<u>Reinforced insitu concrete; Grade 30 - 20 aggregate</u>				
	-				
P	Cut off gutter drain 75 thick walls, 450 wide x 500 high; reinforcement; formwork	18	M		
	EXTERNAL WORKS				
	-				
	<u>Precast reinforced concrete; Grade 30 - 20 aggregate</u>				
A	V shaped channels laid in trench on concrete blinding jointing with cement and sand mortar	45	M		
B	Cover slab 150 thick ; 450 wide x 750 long; reinforcement	22	M		

C	Pedestrian cover slab 100 thick ; 300 wide x 750 long; reinforcement	45	M2		
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	-				
	-				
	To Collection			Le	

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Item	Description	Qty	Unit	Rate (Le)	Amount Le
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COLLECTION					
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CARRIED TO MAIN SUMMARY

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Item	Description	Qty	Unit	Rate (Le)	Amount Le
	- <u>ELECTRICAL INSTALLATION</u>				
	- <u>LIGHTING INSTALLATION</u>				
	- <u>PVC cable and conduits</u>				
	- <u>Supply and install approved 1.5m² copper twin and earth PVC insulated and PVC sheathed cables in concealed 20mm diameter PVC conduit to the respective light points and switch points including all necessary fixed accessories</u>				
A	1 gang 1 way switch point	30	Nr		
B	1 gang 2 way switch point	8	Nr		
C	2 gang 2 way switch point	8	Nr		
D	3 gang 2 way switch point	3	Nr		
E	4 gang 2 way switch point	4	Nr		

F	Bell switch point	4	Nr		
G	- Light point	280	Nr		
	SWITCHES				
	- <u>Supply and fix the following light control switches BRUSHED CHROME FINISH by approved manufacturer including all necessary assembling accessories etc</u>				
H	6Amp 1 gang 1 way switch	30	Nr		
J	6Amp 1 gang 2 way switch	8	Nr		
K	6Amp 2 gang 2 way switch	8	Nr		
L	6Amp 3 gang 2 way switch	3	Nr		
	Total - Carried Forward			Le	
	1/20				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
M	- 6Amp 4 gang 2 way switch	4	Nr		
N	Bell Switch	4	Nr		
	LIGHTING FITTINGS				
	- <u>Supply and install the following lighting fittings and accessories including all necessary assembling, fixing, lamps and control gear:</u>				
A	Nove surface mounted (ϕ^1) 420mm (ϕ^2) 340mm (H') 100mm (H ²) 20mm opal matt acrylic décor edging in white Ncs 0500 c/w Integrated HF - ballast white				

	56942 and 40W FCH circular lamp 2G x 13 81393	29	Nr		
B	Patriot 2x36W HFDD Cat 2 Louvre	42	Nr		
C	- Patriot 2x36W HFDD M3 Cat 2 Louvre	23	Nr		
D	Patriot 1x36W HFDD Cat 2 Louvre	36	Nr		
E	Patriot 1x36W HFDD M3 Cat 2 Louvre	24	Nr		
F	Hyfam compact fluorescent 28W 300 X 300mm nominal recessed version.	5	Nr		
G	T8 Flourescent Batten opal diffuser 1 x 36W	30	Nr		
H	- Trinity T5 surface linear c/w polycarbonate diffuser ATSM135/HF T5 HO 1X35W	12	Nr		
J	- Astro CFL AA16/WP/HF TC-DD 16W - White Base Prismatic Cover	9	Nr		
K	- Thorn slim surface mounted c/w CAT2 double para bolic specular aluminium louvres 2 x 58W TN Puz 258M	16	Nr		
Total - Carried Forward				Le	

1/21

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
L	Thorn slim surface mounted c/w CAT2 double para bolic specular aluminium louvres 2 x 58W TN Puz 258ME3	8	Nr		
M	Disc high profile 265mm x 90mm vandal proof c/w				

	polycarbonate diffuser and 75W ES GCS white	4	Nr		
	SMALL POWER INSTALLATION				
	<u>Supply and install 2.5mm² PVC insulated and PVC sheathed cables twin & earth in surface wall mounted 25mm diameter trunking, with earthing contact and accessories where appropriate</u>				
A	13Amp socket point	23	Nr		
B	13Amp twin socket point	56	Nr		
C	- 13Amp socket - UPS Point	30	Nr		
D	Telephone point	30	Nr		
E	TV/Satellite point	4	Nr		
F	Ceiling fan point	1	Nr		
G	13Amp twin socket point in under floor box power supply system	25	Nr		
H	Telephone point - in raised floor box power supply system	25	Nr		
J	Data socket point- in raised floor box power supply system	25	Nr		
	-				
	Total - Carried Forward			Le	

1/22

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
	-				

	<u>Supply and install 4.0/6.0mm2 PVC insulated and PVC sheathed twin & earth cables in concealed 25mm diameter PVC conduit</u>				
K	20A DP switch point with neon indicator for air conditioning units	30	Nr		
L	20A DP switch point with neon indicator for automatic hand dryer units	2	Nr		
M	32Amp TPN Switch disconnecter fused	6	Nr		
N	45A cooker point	1	Nr		
	<u>Supply and connect the following small power fittings and accessories white finish by approved manufacturer including all necessary assembling fixing accessories etc</u>				
A	13Amp switched socket outlet	23	Nr		
B	- 13Amp twin switched socket outlet	56	Nr		
C	- 13Amp UPS switched socket outlet (Red Colour)	30	Nr		
D	20A DP switch with neon indicator	32	Nr		
E	45A cooker control unit with 13A switched socket outlet	1	Nr		
F	Telephone outlet, RJ 11	30	Nr		
G	TV/Satelite socket outlet	4	Nr		
H	RJ45 Data socket outlet	29	Nr		
	Total - Carried Forward			Le	

1/23

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
	- EQUIPMENT				
	<u>Supply and install complete including all necessary assembling, plugging and accessories</u>				
J	- B TYPE TPN MCB distribution board with TP switch disconnecter fitted with all outgoing MCB's as shown on the drawing.All distribution boards to be of approved standand and quality as LEGRAND				
K	12 Ways 125Amp	2	Nr		
II	- 8 Ways 100Amp	2	Nr		
III	- 6 Ways 100Amp	2	Nr		
L	2.2KW robust cast aluminium case automatic hand dryer having thermal cut off protection,chrome finish	2	Nr		
A	32Amp, TPN switch disconnecter fused. As MEM or similar approved	1	Nr		
B	48 inches, 3 blade ceiling fan, white finish	1	Nr		
C	100Amp, TPN switch disconnecter fused. As MEM or similar approved	1	Nr		
D	630Amp, 4 pole change-over switch. As MEM or similar approved	2	Nr		
E	630Amp, 4 pole Main isolator switch. As MEM or similar approved	1	Nr		
F	12-way TPN MCCB main low voltage distribution				

	switch board with 630Amp Triple pole main switch with multi-range instrument of Form 4 Level of separation including all outgoing MCCB's as shown on the Drawing	1	Nr		
	Total - Carried Forward				Le
	1/24				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
	Cable management				
G	Underfloor service box	25	Nr		
H	300mm wide x 50mm depth x 50mm heavy duty cable tray & accessories	50	M		
J	3 Compartment dado PVC trunking & accessories	208	M		
K	PVC enclosure protection IP55 Floor Junction box 380 x 300 x 140mm	8	Nr		
L	50mm wide x 25mm depth x 3m length galvanised	154	M		
M	- 300mm wide x 100mm depth x 3m galvanised steel trunking	50	M		
	<u>EARTHING SYSTEM</u>				
	<u>Upgrade the existing earthing system by suppling and installing:</u>				
A	Main earth copper terminal 50mm x 6mm high conductivity hard draw copper with shock resisting stand-off insulators	2	Nr		
B	95mm ² single core PVC insulated yellow/green				

	copper conductor, c.p.c	80	M		
C	16mm ² ditto	70	M		
D	10mm ² ditto	100	M		
E	6mm ² ditto	50	M		
F	1200mm 16mm diameter copper bonded steel core earth electrode with clamp	6	Nr		
Total - Carried Forward				Le	
1/25					

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
G	Treat earth rod inspection pit using bentoni or marconite 25Kg sack soil conditioning agent	1	Item		
	Note; the incoming water pipes should be earthed and connected to the main earth point				
	LIGHTNING PROTECTION SYSTEM				
	<u>Supply and install complete. As W.J Furse and Co. Engineering Ltd.OR similar approved manufacturer</u>				
G	- Air terminal point, taper pointed copper, 15mm x 1000mm	3	Nr		
H	Air terminal base	3	Nr		
J	25mm x 3mm PVC insulated copper down tape	2	Nr		
K	Rod coupling	3	Nr		
L	Copper tape Fixing	40	Nr		

M	Test clamp for tape	2	Nr		
N	2400mm,20mm diameter copper bonded steel core earth rod	6	Nr		
A	Earth rod concrete inspection pit with reinforced concrete pit size: 30mm wide x 30mm long x 1000 mm deep	2	Nr		
B	Treat earth rod inspection pit using bentonite or marconite 25kg sack soil conditioning agent	1	Item		
Total - Carried Forward				Le	
1/26					

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
	- <u>Supply, install and terminate the following cable with cable gland, locknut, earth tag and PVC shroud including compression lugs and connect to equipment as shown on the Drawings</u>				
C	- 4 core x 120mm ² PVC SWA PVC	80	M		
D	4 core x 25mm ² ditto	70	M		
E	4 core x 16mm ² ditto	100	M		
F	4 core x 10mm ² ditto	50	M		
	Note: All cable lengths are notional, actual cable lengths are to be determined on length.				

	AUTOMATIC FIRE DETECTION				
	Supply, install, test and commission complete automatic fire detection including all assembling, fixing and accessories				
G	Smoke detector, ionisation	51	Nr		
H	6" fire alarm bell	6	Nr		
J	Manual break glass call point	6	Nr		
K	8W maintained exit sign light with back up battery	8	Nr		
L	- 2 core x 1.5m ² FP200 fire cable coated RED	10	roll		
	SECURITY / COMPOUND LIGHTING				
A	Excavate cable trench size: 750mm wide x 450mm deep	160	M		
	Total - Carried Forward			Le	
	1/27				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
B	Backfilling and compacting final layer of material arising from excavation	160	M		
C	High quality and durable PVC heptape and lay in cable trench	160	M		
D	Construct concrete cable tiles size: 600mm long 300mm wide x 75mm thick and lay in canie tray approximately	1	Item		

E	Supply and install high quality globe light of tough thermoplastic with ES lamp holder in ceramic with base for solid wall mounting on concrete gate column as shown on the Drawing	4	Nr		
F	Provide 1.5mm ² twin + earth PVCinsulated PVC sheathed cable	8	roll		
G	Provide 2.5mm ² twin + earth PVCinsulated PVC sheathed cable	9	roll		
H	Supply and install Install 4 core x 6mm ² PVC SWA PVC buried under ground in cable trench with warning tape	160	M		
J	Supply and install Orion Die - Cast floodlight complete with 20mm electronic photocell untop of 450mm high x 300mm wide concrete upstand	11	Nr		
K	Supply and install high performance Thorn Alpha eight road lighting complete with SON-T150W and electronic photocell with single outreach arm 0.5m	4	Nr		
	Total - Carried Forward			Le	
	1/28				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
L	3mm diameter 4m high galvanised light column welded on 10mm steel plate to be bolted to wall as shown on Drawing	4	Nr		

	<u>RECORD DRAWINGS</u>				
A	Allow a sum to prepare "As Installed" Record Drawings together with operating and maintenance Manuals	1	Item		
	<u>BUILDER'S WORK</u>				
B	Allow a sum for all builder's work such as chases or mortices, making holes and formaking good after	1	Item		
C	Allow a sum for stripping of all unwanted cables ,ie Electrical, Network, Communication cables together with all redunant switch and switch gears, damage light fitting to be removed from site.	1	Item		
	<u>TESTING AND COMMISSIONING</u>				
D	Allow a sum to carry out fixed wiring testing of all the electrical connections	1	Item		
	<u>AIR CONDITIONNING SYSTEM</u>				
	- <u>Supply, install, test and commission into service the following: ceiling & floor and wall mounted type unit with long and high elevation piping, condenser unit drain and condensate pipes, flexible water outlet pipe. Including cables and all mounting accessories</u> As Shown On Plans. All units must be of <u>approved quality stating evidence of after-installation mainten</u> <u>ance and installation reference sites.</u> - - -				
	Total - Carried Forward			Le	

1/29

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
	<u>Indoor units</u>				
A	7.0 Kw nominal cooling capacity, 230V, 50Hz 1-phase, 50Hz, Ceiling & floor type units	10	Nr		
B	5.3 Kw ditto	1	Nr		
C	7.0 Kw nominal cooling capacity, 230V, 50Hz 1-phase, 50Hz, wall mounted type units	3	Nr		
D	5.3 Kw ditto	9	Nr		
E	3.5 Kw ditto	5	Nr		
F	2.6 Kw ditto	1	Nr		
	<u>Outdoor units</u>				
G	49AH nominal cooling capacity 3.3 -15. power supply 3 / 380 - 415 / 50, refrigerant 4.800. Running current 1.8 - 8.0 - 8.4A Input power 0.94 - 4.6- 5.4kW	1	Nr		
H	37AH nominal cooling capacity 6.33 -9. power supply 3 / 380 - 415 / 50, refrigerant 2.800. Running current 3.4 -5.4 -6.0A Input power 1.8 -3.00- 3,45kW	1	Nr		
K	30AH nominal cooling capacity 1.85 - 8.80 - 10.55 power supply 1,220 - 240, 50, refrigerant 2,550. Running current 1.8 - 8.0 - 8.4A Input power 0.72- 2.39 - 3.96kW	2	Nr		
A	21AH cooling /heating capacity 2,34 -6154 power supply 1,220 - 240,50 refrigerant R410A. Running current 4.0 - 9.4 / 6.0 - 9.8 Input power 880- 2100 /				

	1.350 - 2 - 200A	1	Nr		
	Total - Carried Forward			Le	
	1/30				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
B	- 18AH cooling / heating capacity 2,057-5,275 Power supply 1,220 - 240,50 refrigerant R410A. Running current 3.5 - 8.5 / 5.5 - 8.5 Input power 780 - 1,900 /1,200 - 1,900A Distributor box and inverter units to consist of LEV'S and PCB controls including all connecting accessories. The distribution boxes should be installed inside the building as directed by Supervising Officer	1	Nr		
C	For 2 connectable indoor units	2	Nr		
D	For 3 connectable indoor units	5	Nr		
E	For 4 connectable indoor units	2	Nr		
	<u>Supply, install, test and commission into service the following fan coil units, condenser units, local wall mounted controllers, drain and condensate pipes, flexible water outlet conduit including cables all mounting accessories for split-type units.</u>				
F	- 18,000 Btu/hr nominal cooling capacity, 230V, 1-ph,50Hz, Wall mounted	1	Nr		
G	12,000 Btu/hr wall mounted	1	Nr		
	<u>RECORD DRAWINGS</u>				

H	Allow a sum to prepare 'As Installed" Record Drawings together with Operating and Maintenance Manuals	1	Item		
Total - Carried Forward					Le
1/31					

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>ELECTRICAL INSTALLATION Contd</u>				
	- <u>BUILDER'S WORK</u>				
A	Allow a sum for all builder's work such as chases or mortices,making holes,removal of all metal pipe work,stripping of all obsolete air conditioning system all damages relating the service installation and for making good after	1	Item		
	<u>TESTING AND COMMISSIONING</u>				
B	- Allow a sum to carry out fixed wiring testing of all the electrical connections	1	Item		

	Total - Carried to Summary			Le	

1/32

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>PLUMBING INSTALLATION</u>				
	<u>Cold water installation in concealed UPVC service pipework including joints and supports in the running length of the following:</u>				
A	- WC Suite	15	Nr		
B	Wash basin	13	Nr		
C	Floor drain	11	Nr		
D	Cold water storage braithwaite sectional elevated tank	1	Nr		
E	Ground cold water storage plastic tanks	3	Nr		
E	Non-return valve	6	Nr		
F	- Gate valve	6	Nr		

G	Kitchen sink	1	Nr		
	<u>Sanitary Appliances and Ancillaries</u>				
	- <u>Supply and fix the following sanitary appliances by Armitage shanks Curzon, Tiffany or similar approved manufacturer:</u>				
H	Tiffany wash down wc pan suit complete with 'p' trap plugged and screwed to floor and jointed to pvc drain 7.5 litres cistern with finish lever and bracket plugged and screwed to wall with ball valve and all internal fittings external overflow and and flush pipe. Joint to cistern and pipe with flexible connector and ring seat cover with stainless steel pillar.	2	Nr		
	Total - Carried Forward			Le	
	1/33				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>PLUMBING INSTALLATION Contd</u>				
	-				
J	Curzon close - coupled Wc unit in vitreous china british standard wash down wc suite complete with "P' trap plugged and screwed to floor and jointed to PVC drain 9 Litres cistern for bottom supply with finish lever and bracket plugged and screwed to wall with freeflow plastic syphon fitting ball valve and all internal fitting with close soupling fitment including satuirn seat cover white and domer screw	13	Nr		
A	Tiffany wash hand basin 560mm with one central tap hole, complete with pedestal kupla fitment millenia 13mm monobloc mixer with non - return				

	valves 30mm pop up waste - body, millenia metal hand wheels, 30mm plastic bottle trap with 75mm seal iso valve servicing values.	15	Nr		
B	Stainless steel sink, tap, with single bowl and drainer complete with 20mm high necked pillar tap, 38mm outlet plastic bottle trap with 75mm seal supported on concealed hanger.	1	Nr		
C	Nimbus - Avon2 self closing all brass pillar tap with time delay is adjustable depending on pressure	15	Nr		
	<u>Supply and fix to blockwork / floor the following:</u>				
D	Toilet roll holder with shell in white vitrouse Chlna	15	Nr		
E	Soap dish in white vitrouse china	15	Nr		
F	Toilet brush holder and plastic brush with handle of approved quality	15	Nr		
G	Floor drain stainless steel with all filments to outhole drainage, 10mm diameter	10	Nr		
	Total - Carried Forward			Le	
	1/34				

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>PLUMBING INSTALLATION Contd</u>				
H	- Toilet mirror, bevelled edges, four times drilled, plugged, fixed to background requiring plugging chromiun plated, dome headed screws, Size: 600mm x 450mm	15	Nr		
	<u>COLD WATER STORAGE TANK</u>				
	<u>Supply, installed and test</u>				

A	25,460 gallons nominal capacity 4'- 0 x 4' - 0 Hot pressed steel sectional tank with pitched weather proof cover single compartment complete with all necessary stays, cleats, bolts nuts,washers and jointing compound mounted on concrete tapered support for tank, all fittings, pipe connections necessary valves, high pressure ballvalve and automatic floater complete, including all anti rust treatment.	1	Nr		
B	5,000litres plastic cold water storage tank including all necessary valves, higt pressure ball valves and pipework as shown on the Drawing	6	Nr		
WATER PUMP					
<u>- Supply and install</u>					
C	3kW, 380 - 400, 415V, 50Hz, 3phase 4 inches diameter booster water pump including all starter control, wiring and necessary pipework	2	Nr		
WATER RETICULATION					
D	Allow a sum for the supply of all water pipe work	1	Item		
Total - Carried Forward					Le

1/35

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	<u>PLUMBING INSTALLATION Contd</u>				
	<u>- SOIL DRAINAGE</u>				
E	Allow a sum for the supply and installation of all				

	soil and waste pipes and fittings	1	Item		
	- <u>Septic Tank/Soakaway</u>				
F	Allow a sum for the clearing and repairing of all septic tanks and soakaways	2	Item		
	<u>PROTECTION</u>				
G	Allow for protecting the work in this section	1	Item		
	<u>BUILDER'S WORK</u>				
A	- All for all chases, ducts, making holes and for making good after	1	Item		
	<u>TESTING</u>				
B	Allow for testing the entire water reticulation for performance, water pressure, water tightness and provide relevant documentation	1	Item		
<hr/> Total - Carried to Summary <hr/>					

1/36

Item	Description	Amount	Le

PRIME COSTS AND PROVISIONAL SUMS		
A	Security surveillance system	420,240,000.00
B	Re - routing of all internal and external exposed cable	162,000,000.00
C	Miscellaneous items	35,000,000.00
D	Record Drawings	1,200,000.00
E	Builders Work	9,000,000.00
Total - Carried to Summary		627,440,000.00

Item	Description	Qty	Unit	Rate (Le)	Amount Le
	MAIN SUMMARY				
		Page			Le
A	Preliminaries			..	
B	Demolition			..	
C	New Works			..	
D	Electrical and Mechanical Installations			..	
E	Plumbing Installations			..	
F	P.C & Provisional Sums			..	
G	SUB-TOTAL			..	
H	ADD: FOR CONTIGENCY		15%.	..	
J	GRAND TOTAL				
	CARRIED TO FORM OF TENDER			Le	

Section X. Security Forms

Notes on Forms of Securities

Samples of acceptable forms of Bid, Performance, and Advance Payment Securities are annexed. Bidders should not complete the Performance and Advance Payment Security forms at this time. Only the successful Bidder will be required to provide Performance and Advance Payment Securities in accordance with the form acceptable to the Employer.

Annex A Form: Bid Security (Bank Guarantee)

Whereas, *[name of Bidder]* (hereinafter called “the Bidder”) has submitted his Bid dated *[date]* for the construction of *[name of Contract and procurement Number]* (hereinafter called “the Bid”).

Know all people by these presents that We *[name of Bank]* of *[name of country]* having our registered office at *[address]* (hereinafter called “the Bank”) are bound unto name of Employer] (hereinafter called “the Employer”) in the sum of *[amount]*⁴ for which payment well and truly to be made to the said Employer, the Bank binds itself, its successors, and assigns by these presents.

Sealed with the Common Seal of the said Bank this *[day]* day of *[month]*, *[year]*.

The conditions of this obligation are:

- (1) If, after Bid opening, the Bidder withdraws his Bid during the period of Bid validity specified in the Form of Bid; or
- (2) If the Bidder having been notified of the acceptance of his Bid by the Employer during the period of Bid validity:
 - (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or
 - (c) does not accept the correction of the Bid Price pursuant to Clause 27,

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer’s having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including *[date]* the date 28 days beyond the validity of the bids as stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

Date _____ Signature of the Bank _____

Witness _____ Seal _____

[signature, name, and address]

⁴ The Bidder should insert the amount of the Guarantee in words and figures denominated in Leones or an equivalent amount in a freely convertible currency. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.

Annex B Form : Performance Security - Unconditional Bank Guarantee

To: *[name and address of Employer]*

Whereas *[name and address of Contractor]* (hereinafter called “the Contractor”) has undertaken, in pursuance of Contract No. *[procurement number]* dated *[date]* to execute *[name and Procurement Number of Contract and brief description of Works]* (hereinafter called “the Contract”);

And whereas it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognised bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

And whereas we have agreed to give the Contractor such a Bank Guarantee;

Now therefore we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of *[amount of Guarantee] [amount in words]*,⁵ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of Guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall be valid until a date 90 days from the date of issue of the Certificate of Completion.

Signature and seal of the Guarantor _____

Name of Bank _____

Address _____

Date _____

⁵ An amount is to be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract, and denominated either in the currency(ies) of the Contract or in a freely convertible currency acceptable to the Employer.

Annex C Form: Bank Guarantee for Advance Payment

To: *[name and address of Employer]*

[name and Procurement Number of Contract]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Clause 51 (“Advance Payment”) of the above-mentioned Contract, *[name and address of Contractor]* (hereinafter called “the Contractor”) shall deposit with *[name of Employer]* a Bank Guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of *[amount of Guarantee] [amount in words]*.⁶

We, the *[Bank or Financial Institution]*, as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to *[name of Employer]* on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor, in the amount not exceeding *[amount of Guarantee] [amount in words]*.⁷

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between *[name of Employer]* and the Contractor, shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until *[name of Employer]* receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and seal: _____

Name of Bank: _____

Address: _____

Date: _____

⁶ An amount is to be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated either in the currency(ies) of the Advance Payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.

⁷ An amount is to be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated either in the currency(ies) of the Advance Payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.