



German Financial Cooperation with the Global Crop Diversity Trust

Project: Capitalisation of the Endowment Fund of the Global Crop
Diversity Trust and Strengthening of National Seedbanks

PROCUREMENT DOCUMENT

Bidding Document for Procurement of Small Works in Projects with Financing from KfW

Single stage national competitive bidding procedure
with qualification for small admeasurement works contracts

for

Lot 1: Procurement, Installation and Construction Works for the Rehabilitation of the National Seedbank in Zambia

Employer: Global Crop Diversity Trust

Funding: Kreditanstalt fuer Wiederaufbau (KfW)

BMZ No.: 2018 01141

8 May 2025

Preface

This Bidding Document (“BD”) has been prepared by Crop Trust on the basis of the KfW Standard Bidding Document (“SBD”) for Procurement of Small Works, which is based on the Master Procurement Document “Standard Bidding Documents for Procurement of Works and User’s Guide” developed by the Multilateral Development Banks and International Financing Institutions.

This BD is used for the selection of bidders in **single stage National Competitive Bidding** procedures with qualification as described in this document and follows a single stage procedure for the procurement of small works.

The bidding procedure will involve the use of the **one envelope system**, whereby the qualification information and the bids are placed in one envelope by the bidders.

Following the bid opening, Crop Trust will award the contract to the bidder with the most advantageous bid. The most advantageous bid is the bid that meets the qualification criteria, and which has been determined to be substantially responsive to the bidding document and has the lowest evaluated cost.

This document includes the **FIDIC Short Form of Contract**, 1999 Edition, (FIDIC Green Book) as licensed by KfW.

Invitation for Bids

Country: Zambia

Project: Capitalisation of the endowment fund of the Global Crop Diversity Trust and strengthening of national seedbanks

Date: 8 May 2025

Employer: Global Crop Diversity Trust

Funding: Kreditansalt fuer Wiederaufbau (KfW)

Procurement Number: **GCDT/ZM/01**

The Global Crop Diversity Trust (the Crop Trust) has received financing from KfW toward the cost of the Capitalisation of the endowment fund of the Global Crop Diversity Trust and strengthening of national seedbanks and intends to apply part of the proceeds toward payments under the contract for the procurement, installation and construction works for the national seedbank in Zambia.

The Crop Trust now invites sealed bids from eligible bidders for the procurement, supply and installation of equipment and civil, electrical and mechanical works for genebank structures in Zambia to be completed within a **construction period of 6 months**.

Bidding will be conducted by means of the **National Competitive Bidding** procedure with qualification as specified in the KfW Guidelines for Procurement of Goods, Works and associated Services in Financial Cooperation with Partner Countries ("KfW Guidelines")¹.

Interested eligible bidders may obtain further information from:

Alexander Kambili - Finance and Procurement Officer,

Global Crop Diversity Trust,

Platz der Vereinten Nationen 7 – 53113 Bonn – Germany.

Email: alexander.kambili@croptrust.org

A complete set of bidding documents is available to interested bidders from:

- a) the Global Crop Diversity Trust (see contact details above) or
- b) the procurement office of ZARI at:

¹ <https://www.kfw-entwicklungsbank.de/PDF/Download-Center/PDF-Dokumente-Richtlinien/FZ-Vergaberichtlinien-V-2021-EN.pdf>

Wilson Phiri – Procurement Officer,
Mount Makulu Research Station,
Zambia Agriculture Research Institute, Private Bag 7, Chilanga, Zambia.
Email: wlsnphiri@yahoo.com

Bids must be delivered to the address indicated in the clause of the bidding document on or before 11:00 a.m. local Zambian time on Friday 27 June 2025. Late bids will be rejected.

Bids will be opened in an in-person event which will be open to the designated representatives of bidders who have confirmed their participation in advance.

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PART 1 – BIDDING PROCEDURES

Section I. Instructions to Bidders

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Section I. Instructions to Bidders

A. General

1. Scope of Bid

- 1.1 In connection with the Invitation for Bids specified in the Bid Data Sheet (BDS), the Employer, as specified in the BDS, issues these Bidding Documents ("Bidding Documents") to Bidders ("Bidders") interested in submitting bids ("Bids") for the works described in Section VII, Works Requirements. In case the works are to be bid as individual contracts (i.e. the slice and package procedure), these are listed in the BDS. The National Competitive Bidding ("NCB") number corresponding to this bidding process is also provided in the BDS.
- 1.2 The successful Bidder shall be expected to complete the works by the Intended Completion Date specified in the BDS and in the Appendix to Bid.
- 1.3 Throughout these Bidding Documents:
 - (a) The term "in writing" means communicated in written form and delivered against receipt;
 - (b) Except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
 - (c) "Day" means calendar day.

2. Source of Funds

- 2.1 The Employer as indicated in the BDS has applied for or received financing (hereinafter called "funds") from KfW Development Bank (hereinafter called "KfW") towards the cost of the project named in the BDS. The Employer intends to apply a portion of the funds to eligible payments under the contract(s) resulting from this bidding process.

3. Corrupt and Fraudulent Practices

- 3.1 KfW requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section VI.
- 3.2 In further pursuance of this policy, Bidders shall permit and shall cause its agents to provide information and permit KfW or an agent appointed by KfW to inspect on site all accounts, records and other documents relating to bid submission and contract performance (in the case of award), and to have them audited by auditors or agents appointed by KfW.

4. Eligible Bidders

- 4.1 This Bidding is open to all bidders from eligible countries as defined in KfW's eligibility criteria to bid in Section V, Eligibility Criteria.
- 4.2 The materials, equipment and services to be supplied under the Contract and financed by the KfW may have their origin in any country subject to the restrictions specified in Section V, Eligibility Criteria, and all expenditures under the Contract will not contravene such restrictions. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services.
- 4.3 Government owned enterprises in the Borrower's country may participate only if they can establish that they (i) are legally and financially autonomous; and (ii) operate under commercial law. No dependent agency of the Borrower or the Sub-borrower under a Bank financed project shall be permitted to bid or submit a proposal for the procurement of goods or works under the project.
- 4.4 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this procurement process, if the Bidder:
 - (a) Directly or indirectly controls, is controlled by or is under common control with another Bidder; or
 - (b) Receives or has received any direct or indirect subsidy from another Bidder; or
 - (c) Has the same legal representative as another Bidder; or
 - (d) Has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
 - (e) Participates in more than one bid in this bidding process, both as an individual firm and as a JV member. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit the inclusion of the same subcontractor in more than one Bid; or
 - (f) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or

- (g) Any of its affiliates has been hired (or is proposed to be hired) by the Employer as Engineer for the Contract implementation; or
 - (h) Has a close business or family relationship with a professional staff of the Employer (or of the project implementing agency, or of a recipient of a part of the funds) who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the KfW throughout the procurement process and execution of the contract.
- 4.5 A Bidder shall not be under suspension from bidding by the Employer as the result of the execution of a Bid-Securing Declaration.
 - 4.6 This bidding is open only to eligible Bidders, who will be subject to qualification.
 - 4.7 A Bidder shall provide such evidence of eligibility satisfactory to the Employer, as specified in ITB 17.1 or as the Employer shall reasonably request.
 - 4.8 Partners in a joint venture shall be jointly and severally liable for the execution of the Contract.

5. Qualifications of the Bidder

- 5.1 All bidders shall provide in Section IV, Bidding and Qualification Forms, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 5.2 To qualify for award of the Contract, bidders shall meet the minimum qualifying criteria specified in the Bid Data Sheet and/or in Section III, Evaluation and Qualification Criteria.

B. Contents of Bidding Documents

6. Sections of Bidding Documents

- 6.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

- (a) Section I. Instructions to Bidders (ITB);
- (b) Section II. Bid Data Sheet (BDS);
- (c) Section III. Evaluation and Qualification Criteria;
- (d) Section IV. Bidding and Qualification Forms;
- (e) Section V. Eligibility Criteria;

- (f) Section VI. KfW Policy - Corrupt and Fraudulent Practices - Social and Environmental Responsibility;

PART 2 Works Requirements

- (g) Section VII. Works Requirements;

PART 3 Conditions of Contract and Contract Forms

- (h) Section VIII. General Conditions (GC);
- (i) Section IX. Particular Conditions (PC);
- (j) Section X. Contract Forms.

- 6.2 The Invitation for Bids issued by the Employer is not part of the Bidding Documents.
- 6.3 Unless obtained directly from the Employer, the Employer is not responsible for the completeness of the Bidding Documents, responses to requests for clarification, minutes of the pre-Bid meeting (if any), or Addenda in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Employer shall prevail.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its Bid all information and documentation as is required by the Bidding Documents.

7. Clarification of Bidding Documents, Site Visit, Pre-Bid Meeting

- 7.1 A Bidder requiring any clarification of the Bidding Documents shall contact the Employer in writing at the Employer's address specified in the BDS or raise its enquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than fourteen (14) days prior to the deadline for submission of Bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so indicated in the BDS, the Employer shall also promptly publish its response at the web page identified in the BDS. Should the Employer deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.
- 7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility 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.

- 7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer or the designated authority to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
- 7.4 If so specified in the BDS, the Bidder's designated representative is invited to attend a pre-bid meeting. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 7.5 Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3. Any modification to the Bidding Documents that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting. Unless otherwise specified in the BDS nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

8. Amendment of Bidding Documents

- 8.1 At any time prior to the deadline for submission of Bids, the Employer may amend the Bidding Documents by issuing an Addendum.
- 8.2 Any Addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents from the Employer in accordance with ITB 6.3. The Employer shall also promptly publish the Addendum on the Employer's web page in accordance with ITB 7.1.
- 8.3 To give Bidders reasonable time in which to take an Addendum into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids in accordance with ITB 22.2.

C. Preparation of Bids

9. Cost of Bidding

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the

Employer will be in no case responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

10. Language of Bid

- 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. Documents Comprising the Bid

- 11.1 The Bid shall comprise the following:
- (a) Letter of Bid and the Bidding Forms in accordance with ITB 12;
 - (b) Priced Bill of Quantities or Schedules, in accordance with ITB 12 and 14 and as indicated in the BDS;
 - (c) Qualification Information
 - (d) Alternative Bids, if permissible in accordance with ITB 13;
 - (e) Technical Proposal in accordance with ITB 17;
 - (f) Any other document required in the BDS.

- 11.2 In addition to the requirements under ITB 11.1, Bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement.

- 11.3 The Bidder shall furnish information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

12. Letter of Bid, Declaration of Undertaking, Qualification Information,

- 12.1 The Letter of Bid, the Declaration of Undertaking, the Bidding Forms and Schedules, including the Bill of Quantities for unit price contracts or the Schedule of Prices in case of lump sum contracts, shall be prepared using the relevant forms furnished in Section IV, Bidding and Qualification Forms. The Letter of Bid must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.4. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

- 13.1 Unless otherwise specified in the BDS, alternative Bids shall not be considered.
- 13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the BDS, and the method of evaluation shall be included in Section III, Evaluation and Qualification Criteria.
- 13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Documents must first price the Employer's design as described in the Bidding Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the Employer's design of the Bidding Documents shall be considered by the Employer.
- 13.4 When specified in the **BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in Section VII, Works Requirements. The methods for their evaluation shall be described in Section III, Evaluation and Qualification Criteria.

14. Bid Prices and Discounts

- 14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules shall conform to the requirements specified below.
- 14.2 The Bidder shall submit a Bid for the whole of the Works described in ITB 1.1, by filling in price(s) for all items of the Works, as identified in Section IV, Bidding and Qualification Forms. The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Employer. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Bid, and provided that the Bid is determined substantially responsive notwithstanding this omission, the highest price of the item quoted by substantially responsive Bidders will be added to the Bid price and the equivalent total cost of the Bid so determined will be used for price comparison.
- 14.3 The price to be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Bid.

- 14.5 Unless otherwise specified in the BDS and the Contract, the rate(s) and price(s) quoted by the Bidder are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Employer may require the Bidder to justify its proposed indices and weightings.
- 14.6 If so specified in ITB 1.1, Bids are being invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4, provided the Bids for all lots (contracts) are opened at the same time.
- 14.7 Unless otherwise specified in the BDS, the Bid price shall estimate, as separate amounts, (a) import duties and (b) taxes, fees, levies and other charges, which shall apply, in terms of the Applicable Law, to the Contractor and its sub-Contractors, including their personnel, other than nationals or permanent residents in the Employer's country as of the date 28 days prior to the deadline for submission of Bids. With the exception of approved equipment, materials and reagents envisaged to be imported (see ITB 14.7), the Contractor and its sub-Contractors are responsible for meeting all tax liabilities arising out of the Contract.

15. Currencies of Bid and Payment

- 15.1 The currency(ies) of the Bid and the currency(ies) of payments shall be as specified in the BDS.
- 15.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the prices shown in the Schedule of Adjustment Data in the Appendix to Bid are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Bidders.

16. Documents Establishing the Qualifications of the Bidder

- 16.1 In accordance with Section III, Evaluation and Qualification Criteria, qualification applies as specified in ITB 4.5 and the Bidder shall provide the following information as requested in the corresponding information sheets included in Section IV, Bidding and Qualification Forms, unless otherwise stated in the BDS:
- (a) copies of original documents defining the constitution or legal status, place of registration, and principal place

of business of the Bidder; written power of attorney of the signatory of the Bid to commit the Bidder;

- (b) total monetary value of construction works 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 was/is involved, the parties concerned, and the disputed amounts; and awards;
- (j) proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price. The ceiling for subcontractor's participation is stated in the BDS.

17. Documents Comprising the Technical Proposal

- 17.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, Schedules and any other information as stipulated in Section IV Bidding and Qualification Forms, in sufficient detail to demonstrate the adequacy of the Bidder's proposal to meet the Work requirements and the completion time.

18. Period of Validity of Bids

- 18.1 Bids shall remain valid for the period specified in the BDS after the Bid submission deadline date prescribed by the Employer in accordance with ITB 22.1. A Bid valid for a shorter period shall be rejected by the Employer as non-responsive.
- 18.2 In exceptional circumstances, prior to the expiration of the Bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, it shall also be extended for twenty-eight

(28) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its Bid.

**19. Bid Security
"Not Applicable"**

19.1 The Bidder shall furnish as part of its Bid a Bid Security as specified in the BDS, in original form and in the amount and currency specified in the BDS.

19.2 Reserved.

19.3 The Bid Security shall be a demand guarantee in the form of an unconditional guarantee issued by a bank or financial institution (such as an insurance, bonding or surety company) from a reputable source from an eligible country as specified in Section V, Eligibility Criteria. If the unconditional guarantee is issued by a financial institution located outside the Employer's Country, the issuing financial institution shall have a correspondent financial institution located in the Employer's Country to make it enforceable. The Bid Security shall be submitted either using the Bid Security Form included in Section IV, Bidding and Qualification Forms, or in another substantially similar format approved by the Employer prior to bid submission. The Bid Security shall be valid for forty-two (42) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 18.2.

19.4 Any Bid not accompanied by a substantially responsive Bid Security shall be rejected by the Employer as non-responsive.

19.5 The Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the Contract and furnishing the Performance Security pursuant to ITB 43.

19.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required Performance Security.

19.7 The Bid Security may be forfeited:

- (a) If a Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Letter of Bid, or any extension thereto provided by the Bidder; or
- (b) If the successful Bidder fails to:
 - (i) Sign the Contract in accordance with ITB 42; or

- (ii) Furnish a Performance Security in accordance with ITB 43.

19.8 The Bid Security of a JV shall be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, the Bid Security shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the Bid comprising the documents as described in ITB 11 and clearly mark them "Original." Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "Alternative." In addition, the Bidder shall submit copies of the Bid, in the number specified in the **BDS** and clearly mark them "Copy." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid where entries or amendments have been made shall be signed or initialled by the person signing the Bid. If the person signing on behalf of the Bidder is the owner, member, or director of the Bidder, if the Bidder is a single entity, or of the Bidder's Lead Member, if the Bidder is a JV, as demonstrated in the Bidder's Application, then no authorization shall be required.

20.3 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, then the Bid shall be signed by every member of the proposed JV.

20.4 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the Bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

21.1 The Bidder shall enclose the original and all copies of the Bid, including alternative Bids, if permitted in accordance with ITB 13, in separate sealed envelopes,

duly marking the envelopes as “Bid - Original”, “Bid - Alternative” and “Bid - Copy.”

These envelopes containing the original and the copies shall then be enclosed in one single envelope marked “Bid”.

21.2 The inner and outer envelopes shall:

- (a) Bear the name and address of the Bidder;
- (b) Be addressed to the Employer in accordance with ITB 22.1;
- (c) Bear the specific identification of this bidding process specified in the BDS 1.1; and
- (d) Bear a warning not to open before the time and date for Bid opening.

21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

22. Deadline for Submission of Bids

22.1 Bids must be received by the Employer in accordance with the instructions, including the address and deadline, specified in the BDS.

22.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Submissions

23.1 The Employer shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 22. Any Bid received by the Employer after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

24.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2. The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be:

- (a) Prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked “Withdrawal”, “Substitution”, “Modification”; and

- (b) Received by the Employer prior to the deadline prescribed for submission of Bids, in accordance with ITB 22.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

25. Bid Opening

25.1 Except in the cases specified in ITB 23 and 24, the Employer shall publicly open and read out in accordance with ITB 25 all Bids received by the deadline (regardless of the number of Bids received), at the date, time and place specified in the BDS, in public and in the presence of Bidders' designated representatives.

25.2 First, envelopes marked "Withdrawal" shall be opened and read out and the envelope with the corresponding Bid shall not be opened but returned to the Bidder. No Bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at the Bid opening. Next, envelopes marked "Substitution" shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at the opening. Envelopes marked "Modification" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at the Bid opening. Only Bids that are opened and read out at Bid opening shall be considered further.

25.3 All other envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Price, per lot (contract if applicable, including any discounts and alternative bids; signed Letter of Bid, Power of Attorney, nominating the Bidder's authorized representative, Declaration of Undertaking, and any other details as the Employer may consider appropriate. Only discounts and alternative bids read out at bid opening shall be considered for evaluation. The Letter of Bid and the Schedules are to be initialled by a minimum of three representatives of the Employer attending bid opening.

At bid opening, the Employer shall neither discuss the merits of any bid nor reject any bid (except for late bids, in accordance with ITB 23.1).

- 25.4 The Employer shall prepare a record of the Bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; Power of Attorney, nominating the Bidder's authorized representative, and Declaration of Undertaking. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

26. Confidentiality

- 26.1 Information relating to the examination, evaluation, and comparison of the Bids, and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with the bidding process until information on Contract award is communicated to all Bidders in accordance with ITB 41.
- 26.2 Any attempt by a Bidder to influence the Employer in the examination, evaluation, and comparison of the Bids, and qualification of the Bidders, or Contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract award, if a Bidder wishes to contact the Employer on any matter related to the bidding process, it shall do so in writing.

27. Clarification of Bids

- 27.1 To assist in the examination, evaluation, and comparison of the Bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid, given a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 31.
- 27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.

28. Deviations, Reservations, and Omissions

- 28.1 During the evaluation of Bids, the following definitions apply:
- (a) "Deviation" is a departure from the requirements specified in the Bidding Documents;
 - (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
 - (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Documents.

29. Determination of Responsiveness

- 29.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11.
- 29.2 A substantially responsive Bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,
- (a) If accepted, would:
 - (i) Affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (ii) Limit in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the Bidder's obligations under the proposed Contract; or
 - (b) If rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.
- 29.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 17, in particular, to confirm that all requirements of Section VII, Works Requirements have been met without any material deviation, reservation or omission.
- 29.4 If a Bid is not substantially responsive to the requirements of the Bidding Documents, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30. Nonmaterial Nonconformities

- 30.1 Provided that a Bid is substantially responsive, the Employer may waive any nonmaterial nonconformities in the Bid.
- 30.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the

necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

- 30.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component.

31. Correction of Arithmetical Errors

- 31.1 Provided that the Bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:
- (a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
 - (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless, only for admeasurement contracts, the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

- 31.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 31.1 shall result in the rejection of the Bid.

32. Conversion to Single Currency

- 32.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency as specified in the BDS.

33. Margin of Preference

- 33.1 A margin of preference for domestic Bidders shall not apply in National Competitive Bidding.

34. Subcontractors

- 34.1 Unless otherwise stated in the BDS, the Employer does not intend to execute any specific elements of the

Works by sub-contractors selected in advance by the Employer (nominated sub-contractors).

35. Evaluation of Bids

- 35.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.
- 35.2 To evaluate a Bid, the Employer shall consider the following:
- (a) The Bid price, excluding Provisional Sums unless priced competitively and the provision, if any, for contingencies in the Schedules, but including Daywork items, where priced competitively;
 - (b) Price adjustment for correction of arithmetic errors in accordance with ITB 31.1;
 - (c) Price adjustment due to missing items, missing rates, or discounts offered in accordance with ITB 14.2 and 14.4;
 - (d) Price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 30.3;
 - (e) Converting the amount resulting from applying (a) to (d) above, if relevant, to a single currency in accordance with ITB 32;
 - (f) The additional evaluation factors as specified in Section III, Evaluation and Qualification Criteria.
- 35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.
- 35.4 If these Bidding Documents allow Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Letter of Bid, is specified in Section III, Evaluation and Qualification Criteria.
- 35.5 If the Bid, which results in the lowest Evaluated Bid Price, is significantly lower than the Employer's estimate, the Employer shall require the Bidder to produce detailed price analyses for any or all items of the Schedules, to demonstrate the internal consistency of those prices with the construction methods, resources and schedule proposed. Notwithstanding the provisions of ITB 14.2 which shall not be applicable, if one or several inconsistencies are evidenced, the Bid shall be declared non-compliant and rejected. If the Bid

is seriously unbalanced or front loaded in the opinion of the Employer and after evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

36. Comparison of Bids

- 36.1 The Employer shall compare the evaluated prices of all substantially responsive Bids established in accordance with ITB 35.2 to determine the lowest evaluated Bid.

37. Qualification of the Bidder

- 37.1 The Employer shall determine to its satisfaction whether the eligible Bidder that is selected as having submitted the lowest evaluated cost and substantially responsive Bid meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

- 37.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the bidding document), or any other firm(s) different from the Bidder.

- 37.3 An affirmative determination of qualification shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the Bid, in which event the Employer shall proceed to the substantially responsive Bid which offers the next lowest evaluated cost to make a similar determination of that Bidder's qualifications to perform satisfactorily.

38. Most Advantageous Bid

- 38.1 Having compared the evaluated costs of Bids, the Employer shall determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be:

- (a) substantially responsive to the bidding document; and
- (b) the lowest evaluated cost.

39. Employer's Right to Reject All Bids

- 39.1 The Employer reserves the right to annul the bidding process and reject all Bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. Award of Contract**40. Award Criteria**

40.1 Subject to ITB 39.1, the Employer shall award the Contract to the successful Bidder. This is the Bidder whose Bid has been determined to be the Most Advantageous Bid as specified in ITB 38.

41. Notification of Award

41.1 Prior to the expiration of the period of Bid validity, the Employer shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the Works and the requirement for the Contractor to remedy any defects therein (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price"). Subsequently, the Employer shall also notify all other Bidders of the results of the bidding.

41.2 Until a formal contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

41.3 The Employer shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 41.1, requests in writing the grounds on which its Bid was not selected.

41.4 In exceptional circumstances, the Employer may need to communicate with the successful Bidder, established in terms of ITB 38.1, certain aspects of Contract performance prior to sending the Letter of Acceptance. Should such a need arise, this communication shall be limited to the following topics, as identified in the evaluation report,

- (a) coordination of mobilization timing;
- (b) coordination of actions or inputs involving the Employer and the Engineer;
- (c) technical alternatives offered by the successful Bidder.

Any such discussions and agreements as there shall occur between the Employer and the successful Bidder (1) may not be interpreted as having the same legal effect as the Letter of Acceptance, (2) shall be summarized in Minutes, which shall be attached to the Letter of Acceptance.

42. Signing of Contract

42.1 Promptly upon notification, the Employer shall send the successful Bidder the Contract Agreement.

**43. Performance
Security**

42.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

43.1 Within twenty-eight (28) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish the performance security in accordance with the General Conditions of Contract, subject to ITB 35.5, using for that purpose the Performance Security Form included in Section X, Contract Forms, or another form acceptable to the Employer. If the performance security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer's Country.

43.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award. In that event, the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

Section II. Bid Data Sheet

A. Introduction	
ITB 1.1	The Employer is: Global Crop Diversity Trust
ITB 1.1	<p>The name of the NCB is: Lot 1: Procurement, installation and construction works for the rehabilitation of the national seedbank in Zambia</p> <p>The identification number of the NCB is: GCDT/ZM/01</p> <p>The number and identification of lots (contracts) comprising this NCB is: Not applicable</p>
ITB 1.2	Intended completion date: 180 days after commencement date
ITB 2.1	The name of the Project is: Capitalisation of the endowment fund of the Global Crop Diversity Trust and strengthening of national seedbanks
ITB 4.1	Maximum number of members in the JV shall be: Two (2)
ITB 5.2	<p>(a) Average annual financial amount of construction work over a period of three (3) years (2022, 2023, 2024), of at least three (3) times the value of the Bid.</p> <p>(b) Experience as prime contractor in the construction of at least 3 works of a nature and complexity equivalent to the Works over the period of the last five (5) years (2020 – 2024)</p> <p>(c) Essential equipment required for the project: Van, 4x4 Twin cab, Differential GPS, Handheld GPS, Dumpy level, protective barriers and tapes, picks, shovels, rakes, warning signs, first aid box.</p> <p>(d) 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 50% of the bid sum.</p>
B. Bidding Documents	
ITB 7.1	<p>For clarification purposes only, the Employer's address is: Global Crop Diversity Trust, Platz der Vereinten Nationen 7, 53113 Bonn, Germany</p> <p>Fax: Not applicable</p> <p>Electronic mail address: alexander.kambili@croptrust.org</p>
ITB 7.1	Web page: Not applicable
ITB 7.4	<p>A site visit shall take place at the following date, time and place:</p> <p>Date: 22 May 2025</p> <p>Time: 10:00 AM Zambian local time</p> <p>Place: Mount Makulu Research Station (ZARI), Chilanga, Zambia</p>

	<p>This will be followed by an online pre-bid meeting at the following date and time:</p> <p>Date: 23 May 2025</p> <p>Time: 2:00 PM Zambian local time</p> <p>Place: <i>Meeting link will be communicated to eligible bidders.</i></p>
ITB 8.2	Web page: Not applicable. Addenda shall be sent directly to the Bidders only.
C. Preparation of Bids	
ITB 10.1	<p>The language of the Bid is English</p> <p>All correspondence exchange shall be in the English language. Language for translation of supporting documents and printed literature is English.</p>
ITB11.1 (ii)	<p>The following schedules shall be submitted with the Bid:</p> <ul style="list-style-type: none"> (a) Letter of Bid and the Bidding Forms (b) Declaration of Undertaking (c) Appendix to Bid duly completed (d) Priced Bill of Quantities (e) Other Qualification Information as per ITB 5 (f) Key Personnel (g) List of Equipment (h) Key Experience and References (i) Credit Lines from credible institutions preferably Bank or Construction Material Dealers (as applicable) (j) Bidders Technical Proposal (k) Bidders initialed, agreed and signed ESHS <p>All other documents required in the Bidding Documents as listed in ITB 11.1 (vi) and in the order given below.</p>
ITB 11.1 (vi)	<p>The Bidder shall submit with its Bid the following additional documents:</p> <ul style="list-style-type: none"> • Certificate of incorporation • Tax Clearance Certificate • NAPSA Registration Certificate (unregistered international contractors, prior to contract award), • Workers Compensation Compliance Certificate (unregistered international contractors, prior to contract award) • National Council for Construction Certificate Contractor of registration (Grade 3 R or higher) • Audited financial reports for years 2020, 2021, 2022, 2023
ITB 13.3 Unsolicited alternative Bids <i>[if not permitted under BDS 13.1 above, delete]</i>	Not applicable.

ITB 13.4 Technical alternatives designed by the Employer <i>[if not permitted under BDS 13.1 above, delete]</i>	Not applicable.
ITB 14.5	The prices quoted by the Bidder shall be: fixed .
ITB 14.7	For this tender and ITB 14.7, the contractor and its subcontractors should note that ZARI is VAT exempt for equipment, materials and reagents that may need to be imported – provided specific procedures are complied with. Bidders shall therefore prepare a list of such items, if any, and indicate separately the VAT and any other taxes, duties or levies that such items would ordinarily attract. Note that this ONLY applies for equipment, materials or reagents to be imported and not to equipment, materials or reagents already in Zambia.
ITB 15.1	<p>The currency of the Bid and the payment currency shall be in accordance with Option A as described below:</p> <p>Option A (Bidders to quote entirely in Euros):</p> <p>(a) The unit rates and the prices shall be quoted by the Bidder in the Schedules, entirely in Euros (€).</p>
ITB 17	<p>The Bid shall include the ESHS General and Specific Requirements signed by the Bidder as provided for this purpose in Section VII – Works Requirements, 1 b) Specifications for Project Area Environmental, Social, Health and Safety Management (ESHS).</p> <p>A Bid not comprising the signed ESHS General and Specific Requirements shall be rejected.</p>
ITB 18.1	The bid validity period shall be 120 days .
ITB 19.1	Bid security "Not Applicable"
ITB 20.1	In addition to the originals of the Bid, the number of copies is: one (1) paper copy and one (1) digital copy (CD or flash drive).
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: A power of attorney established in the name of the signatory of the Bid. If the Bidder is a JV, the power of attorney shall be issued by the Lead Member of the JV.
D. Submission and Opening of Bids	
ITB 22.1	<p>The Original Bid shall be submitted not later than:</p> <p>Date: Friday 27 June 2025</p> <p>Time: 11 a.m. local Zambian time</p> <p>at the following address:</p> <p>Attention: Wilson Phiri – Procurement Officer</p>

	<p>Mount Makulu Research Station, Zambia Agriculture Research Institute, Private Bag 7 City: Chilanga Country: Zambia An official receipt must be obtained at the time of delivery.</p>
ITB 25.1	<p>The Bid opening shall take place in public and online as follows: Date: Friday 27 June 2025 Time: 11:30 a.m. local Zambian time at the following address: Mount Makulu Research Station, Zambia Agriculture Research Institute, Private Bag 7 City: Chilanga Country: Zambia</p> <p>No minimum number of Bids is required in order to proceed to bid opening.</p>
E. Evaluation and Comparison of Bids	
ITB 29	<p>Compliance of the ESHS Methodology (as specified in BDS 17) with the ESHS Specifications (Section VII - Works Requirements) shall be determined by using the method specified in Section III Clause 1.2.</p> <p>A Bid for which the ESHS Methodology is not substantially responsive (i.e. without material deviation, reservation or omission) shall be rejected.</p>
ITB 32.1	<p>The currency that shall be used for bid evaluation and comparison purposes to convert all Bid price(s) expressed in various currencies into a single currency is: EURO</p>
ITB 34.1	<p>At this time the Employer does not intend to execute certain specific parts of the Works by sub-contractors selected in advance (nominated subcontractors).</p>
ITB 37	<p>The Employer shall evaluate the qualifications of the responsive Bidders using the factors, methods, criteria, and requirements defined in Section III, Evaluation and Qualification Criteria, to evaluate the qualifications of the Bidders, and no other methods, criteria, or requirements shall be used.</p>

Section III. Evaluation and Qualification Criteria

This Section contains all the criteria that the Employer shall use to evaluate the Bids and to determine the qualification of Bidders. In accordance with ITB 35 and ITB 37, no other factors, methods or criteria shall be used. The Bidder shall provide all the information requested in the forms included in Section IV, Bidding and Qualification Forms.

Wherever a Bidder is required to state a monetary amount, Bidders should indicate the EUR equivalent using the rate of exchange determined as follows:

- (a) For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year;
- (b) Value of single contract - Exchange rate prevailing on the date of the contract.

Exchange rates shall be taken from the publicly available source identified in the ITB 32.1. Any error in determining the exchange rates in the Bid may be corrected by the Employer.

1. Evaluation of Bids

In addition to the criteria listed in ITB 35.2 (a) – (e) the following criteria shall apply:

1.1 Assessment of adequacy of Technical Proposal with Requirements

The assessment of the Technical Proposal submitted by a Bidder shall comprise (a) evaluation of the Bidder's plan to mobilize key equipment and key personnel to carry out the works, (b) construction method, (c) construction schedule and (d) sufficiently detailed supply sources, in accordance with requirements specified in Section VII, Works Requirements. A Bid not comprising Technical Proposal or a Bid for which the Technical Proposal is not substantially responsive (i.e. with material deviation, reservation or omission) shall be rejected.

1.2 Assessment of adequacy of the Environmental, Social, Health and Safety (ESHS) Methodology

The signed ESHS General and Specific Requirements submitted by the Bidder shall be evaluated to determine whether they are substantially responsive (i.e. without material deviation, reservation or omission) to the requirements specified in Section VII, Works Requirements - ESHS Specifications. A Bid which is not substantially responsive (i.e. with material deviation, reservation or omission) shall be rejected.

2. Evaluation of Eligibility and Qualification

2.1 Eligibility

This Bidding is open to all bidders from eligible countries as defined in ITB 4 and KfW's eligibility criteria to bid in Section V, Eligibility Criteria.

2.2 Qualification

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

- (a) an average annual financial amount of construction work over the period specified in the BDS of at least the multiple indicated in the BDS;
- (b) experience as prime contractor in the construction of at least the number of works of a nature and complexity equivalent to the Works over the period specified in the BDS (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 BDS;
- (d) a Contract Manager with five years' experience in works of an equivalent nature and volume, including no less than three years as Manager; 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 BDS.²

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

² Usually the equivalent of the estimated payments flow over 4-6 months at the average (straight line distribution) construction rate. The actual period of reference shall depend on the speed with which the Employer shall pay the Contractor's monthly certificates.

Section IV. Bidding and Qualification Forms

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LETTER OF BID

[The Bidder shall prepare a Letter of Bid on Letterhead paper specifying their name and address]

Date: _____

NCB No.: _____

To: _____

—

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB 8)_____;
- (b) We have no conflict of interest in accordance with ITB 4;
- (c) We have not been suspended nor declared ineligible by the Employer based on execution of a Bid Securing Declaration in the Employer's country in accordance with ITB 4.5;
- (d) We offer to execute in conformity with the Bidding Documents the following Works:

_____;
- (e) The total price of our Bid, excluding taxes and excluding any discounts offered in item (f) below is:
 - i) In case of only one lot, total price (excluding taxes) of the Bid

 - ii) In case of multiple lots, total price (excluding taxes) of each lot

 - iii) In case of multiple lots, total price (excluding taxes) of all lots (sum of all lots) _____
 - iv) In case of acceptance of [indicate any technical alternatives offered in accordance with ITB 13], total price (excluding taxes)

- (f) The discounts offered and the methodology for their application are:
 - i) The discounts offered are:

 - ii) The exact method of calculations to determine the net price after application of discounts is shown below:

- (g) Our Bid shall be valid for a period of _____ days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

- (h) If our Bid is accepted, we commit to obtain a performance security in accordance with ITB 43 of the Bidding Documents;
- (i) We are not participating, as a Bidder, in more than one Bid in this bidding process in accordance with ITB 4.4 (e), other than alternative Bids submitted in accordance with ITB 13;
- (j) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (k) We acknowledge and agree that the Employer reserves the right to annul the bidding process and reject all Bids at any time prior to contract award without thereby incurring any liability to us;
- (l) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption.

Name of the Bidder*_____

Name of the person duly authorized to sign the Bid on behalf of the Bidder**_____

Title of the person signing the Bid_____

Signature of the person named above_____

Date signed _____ day of _____, _____

*: In the case of the Bid submitted by a JV specify the name of the JV as Bidder

** : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid

Appendix to Bid

This Appendix forms part of the Agreement.

[Note: with the exception of the items for which the Employer's requirements have been inserted, the Contractor shall complete the following information before submitting his offer.]

Item	Sub-Clause	Data
Documents forming the Contract listed in the order of priority	1.1.1.....	
Document (delete if not applicable)		Document Identification
(a) The Agreement		_____
(b) Particular Conditions		_____
(c) General Conditions		_____
(d) The Specification		_____
(e) The Drawings		_____
(f) The Contractor's tendered design		Not applicable
(g) The bill of quantities		_____
(h)		_____
(i)		_____
Time for Completion.....	1.1.9.....	180 days
Law of the Contract.....	1.4.....	This Agreement shall be governed by general principles of law to the exclusion of any single national system of law. Any dispute relating to the interpretation or execution of this Contract shall, unless amicably settled, be subject to conciliation. In the event of failure of the latter, the dispute shall be settled by arbitration. The arbitration shall be conducted in accordance with the modalities to be agreed upon by the Parties, or, in the absence of agreement, with the rules of arbitration of the United Nations Commission on International Trade Law (UNCITRAL). The parties shall accept the arbitral award as final.
Language.....	1.5.....	English
Provision of Site.....	2.1.....	As per agreement between the parties
Authorised person	3.1.....	Michael Bolton

Name and address of Employer's representative (if known).....	3.2.....	Stefan Doerner GOPA Infra GmbH Plot 176a Kasangula Rd. Roma 10101 Lusaka Zambia
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Performance security (if any):....

Amount.....	4.4.....	10% of contract value
Form.....	4.4.....	Guarantee
Time for delivery of security	4.4.....	Within 28 days of the Commencement Date.

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Item	Sub-Clause	Data
Requirements for Contractor's design (if any)	5.1.....	Not applicable
Programme:		
Time for submission.....	7.2.....	Within 14 days of the Commencement Date.
Form of programme.....	7.2.....	GANTT Chart
Amount payable due to failure to complete.....	7.4.....	0.2 % per day up to a maximum of 10% of sum stated in the Agreement
Period for notifying defects.....	9.1 & 11.5..	365 days calculated from the date stated in the notice under Sub-Clause 8.2
Variation procedure		
Daywork rates.....	10.2.....	at rates as indicated in the contract or which the Employer considers appropriate
Valuation of the Works		
Lump sum Price.....	11.1.....	Not applicable
Lump sum price with schedules of rates.....	11.1.....	Not applicable
Lump sum price with bill of quantities.....	11.1.....	Not applicable
Remeasurement with tender bill of quantities.....	11.1.....	Applicable
Cost reimbursable	11.1.....	Not applicable

Percentage of value of Materials and Plant..... 11.2..... Materials_____ 75 %
 Plant_____ 75 %

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Item	Sub-Clause	Data
Percentage of retention	11.3	10 %
Currency of payment	11.7	EURO
Rate of interest	11.8	5% per annum
Insurances.....	14.1	

Type of cover	Amount of cover	Exclusions
The Works, Materials, Plant and fees	The sum stated in the Agreement plus 15%	_____
Contractor's Equipment	110 % of full replacement cost	_____
Third Party injury to persons and damage to property	With minimum coverage in accordance with the applicable law in Zambia	_____
Workers	With minimum coverage in accordance with the applicable law in Zambia	_____
Other cover	_____	_____

Arbitration

Rules.....	15.3.....	UNCITRAL Arbitration Rules
Appointing authority.....	15.3.....	Chartered Institute of Arbitrators (Zambia Branch)
Place of Arbitration	15.3.....	Zambia

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Declaration of Undertaking

Reference name of the Application/Offer/Contract: ("**Contract**")³

To: ("**Project Executing Agency**")

1. We recognise and accept that KfW only finances projects of the Project Executing Agency ("PEA")⁴ subject to its own conditions which are set out in the Funding Agreement it has entered into with the PEA. As a matter of consequence, no legal relationship exists between KfW and our company, our Joint Venture or our Subcontractors under the Contract. The PEA retains exclusive responsibility for the preparation and implementation of the Tender Process and the performance of the Contract.
2. We hereby certify that neither we nor any of our board members or legal representatives nor any other member of our Joint Venture including Subcontractors under the Contract are in any of the following situations:
 - 2.1) being bankrupt, wound up or ceasing our activities, having our activities administered by courts, having entered into receivership, reorganisation or being in any analogous situation;
 - 2.2) having been convicted by a final judgment or a final administrative decision or a preliminary investigation/charge is pending against us for involvement in a criminal organisation, money laundering, terrorist-related offences, child labour or trafficking in human beings, or have been subject to (financial) sanctions and/or embargo provisions by the United Nations, the European Union or the Federal Republic of Germany. This exclusion criterion is also applicable to legal persons whose shares (or the majority thereof) are owned or de facto controlled by natural or legal persons against whom such judgments, administrative decisions, (financial) sanctions and/or embargoes have been imposed and – in the case of (financial) sanctions and/or embargoes – these restrictive measures continue to apply;
 - 2.3) having been convicted by a final court decision or a final administrative decision by a court, the European Union, national authorities in the Partner Country or in Germany for Sanctionable Practice in connection with a Tender Process or the performance of a Contract or for an irregularity affecting the EU's financial interests (*in the event of such a conviction, the Applicant or Bidder shall attach to this Declaration of Undertaking supporting information showing that this conviction is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction*);
 - 2.4) having been subject, within the past five years to a contract termination fully settled against us for significant or persistent failure to comply with our contractual obligations during such Contract performance, unless this termination was challenged and dispute resolution is still pending or has not confirmed a full settlement against us;
 - 2.5) not having fulfilled the applicable fiscal obligations with regard to the payment of taxes at the respective tax residence and in the country of origin of the PEA (*contractors based in Annex 1 countries*
(<https://www.consilium.europa.eu/de/policies/eu-list-of-non-cooperative-jurisdictions/>) must submit a fully completed and legally countersigned declaration of tax conformity (Appendix 1 to the Declaration of Undertaking) in addition to the Declaration of Undertaking at the time of

award of the contract/contract review. This shall become an integral part of the contract. Failure to submit may result in exclusion from the awarding procedure. For contractors based in countries not listed as Annex I countries, only the Declaration of Undertaking must be submitted, and not the declaration of tax conformity;

2.6) being subject to an exclusion decision of the World Bank or any other multilateral development bank and being listed on the website <http://www.worldbank.org/debarr> or respectively on the relevant list of any other multilateral development bank *(in the event of such exclusion, the Applicant or Bidder shall attach to this Declaration of Undertaking supporting information showing that this exclusion is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction);* or

2.7) being guilty of misrepresentation in supplying the information required as a condition of participation in the Tender.

3. We hereby certify that neither we, nor any of the members of our Joint Venture or any of our Subcontractors under the Contract are in any of the following situations of conflict of interest:
 - 3.1) being an affiliate controlled by the PEA or a shareholder controlling the PEA, unless the stemming conflict of interest has been brought to the attention of KfW and resolved to its satisfaction;
 - 3.2) having a business or family relationship with a PEA's staff involved in the Tender Process or the supervision of the resulting Contract, unless the stemming conflict of interest has been brought to the attention of KfW and resolved to its satisfaction;
 - 3.3) being controlled by or controlling another Applicant or Bidder, or being under common control with another Applicant or Bidder, or receiving from or granting subsidies directly or indirectly to another Applicant or Bidder, having the same legal representative as another Applicant or Bidder, maintaining direct or indirect contacts with another Applicant or Bidder which allows us to have or give access to information contained in the respective Applications or Offers, influencing them or influencing decisions of the PEA;
 - 3.4) being engaged in a Consulting Services activity, which, by its nature, may be in conflict with the assignments that we would carry out for the PEA;
 - 3.5) in the case of procurement of Works, Plant or Goods:
 - i. having prepared or having been associated with a Person who prepared specifications, drawings, calculations and other documentation to be used in the Tender Process of this Contract;
 - ii. having been recruited (or being proposed to be recruited) ourselves or any of our affiliates, to carry out works supervision or inspection for this Contract;
4. If we are a state-owned entity, and compete in a Tender Process, we certify that we have legal and financial autonomy and that we operate under commercial laws and regulations.
5. We undertake to bring to the attention of the PEA, which will inform KfW, any change in situation with regard to points 2 to 4 here above.
6. In the context of the Tender Process and performance of the corresponding Contract:
 - 6.1) neither we nor any of the members of our Joint Venture nor any of our Subcontractors under the Contract have engaged or will engage in any Sanctionable Practice or violate the Guidelines during the Tender Process and

in the case of being awarded a Contract will engage in any Sanctionable Practice during the performance of the Contract;

6.2) neither we nor any of the members of our Joint Venture or any of our Subcontractors under the Contract shall acquire or supply any equipment nor operate in any sectors under an embargo of the United Nations, the European Union or Germany; and

6.3) we commit ourselves to complying with and ensuring that our Subcontractors and major suppliers under the Contract comply with international environmental and labour standards, consistent with laws and regulations applicable in the country of implementation of the Contract and the fundamental conventions of the International Labour Organisation⁵ (ILO) and international environmental treaties. Moreover, we shall implement environmental and social risks mitigation measures when specified in the relevant environmental and social management plans or other similar documents provided by the PEA and, in any case, implement measures to prevent sexual exploitation and abuse and gender-based violence.

7. In the case of being awarded a Contract, we, as well as all members of our Joint Venture partners and Subcontractors under the Contract will, (i) upon request, provide information relating to the Tender Process and the performance of the Contract and (ii) permit the PEA and KfW or an agent appointed by either of them, and in the case of financing by the European Union also to European institutions having competence under European Union law, to inspect the respective accounts, records and documents, to permit on-the-spot checks and to ensure access to sites and the respective project.
8. In the case of being awarded a Contract, we, as well as all our Joint Venture partners and Subcontractors under the Contract undertake to preserve above mentioned records and documents in accordance with applicable law, but in any case, for at least six years from the date of fulfilment or termination of the Contract. Our financial transactions and financial statements shall be subject to auditing procedures in accordance with applicable law. Furthermore, we accept that our data (including personal data) generated in connection with the preparation and implementation of the Tender Process and the performance of the Contract are stored and processed according to the applicable law by the PEA and KfW.

Name: _____ In the capacity of: _____

Duly empowered to sign in the name and on behalf of⁶: _____

Signature:

Dated:

⁵ In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

⁶ In the case of a JV, insert the name of the JV. The person who will sign the application, bid or proposal on behalf of the Applicant/Bidder shall attach a power of attorney from the Applicant/Bidder.

Appendix 1

Declaration of tax conformity – binding confirmation for legal persons

Name of company

I hereby confirm with my signature that:

1. I am authorised to make this declaration on behalf of the above company;
2. the company properly pays all taxes in accordance with the tax laws of the country in which the company is domiciled;
3. the company is not currently nor has been in the past involved in any legal proceedings concerning the taxation of the company;
4. the company will duly pay taxes that may arise from the provision of contracted services;
5. all information and statements provided in advance are complete, accurate in terms of content and currently correct.

.....
(Place)

.....
(Date)

.....
(Name of the consultant)

.....
(Signature(s))

Appendix 1**Declaration of tax conformity – binding confirmation for natural persons**

I hereby confirm with my signature that:

1. I make this declaration in my name/on my own account;
2. I duly pay taxes that I am obliged to pay under the tax law of my country of residence;
3. I am not currently involved in tax law court proceedings, nor have I been in the past;
4. I will duly pay taxes that may arise from the provision of contracted service;
5. I have filled in all the information and statements of this confirmation in full, accurately in terms of content and that they are up to date at this time.

.....
(Place) (Date)

.....
(Name of the person)

.....
(Signature)

	TITLE: Seed For Resilience Project: ZAMBIA	
ITEM No.	DESCRIPTION	AMOUNT (Euro)
	BILL COLLECTION SHEET	
P&Gs	P&Gs ESTIMATE @ 30% OF TOTAL OF ITEMS 2A1.1,2A1.2,2A1.3,2A1.4& 2B1.1	
B1	ACCESS WALKWAY	
B2	EQUIPMENT ROOM	
B3	EXISTING OFFICE BUILDING	
B4	DRYING ROOM	
B5	MECHANICAL & ELECTRICAL WORKS	
	BILL OF QUANTITIES TOTAL	
	Contingencies @ 20%	
	Tax @ 16%	
	TOTAL WORKS	

	TITLE: Seed For Resilience Project: ZAMBIA				
ITEM No.	DESCRIPTION	UNIT	QTY	RATE (Euro)	AMOUNT (Euro)
Bill No.1: CIVIL WORKS					
	<u>ACCESS WALKWAY</u>				
	Preamble: The relevant drawings are the DRAWING series SFR-ZM-C-01 REV 00 (including references made there-in to other drawings) and specifications				
E	<u>EARTHWORKS</u>				
1-E31	Topsoil	m3	7.00		
1-E3411	Excavation for foundations in class III material max depth n.e 0.25m for reuse	m3	3.30		
1-E3421	Excavation for foundations in class III material max depth 0.25 - 0.5 m for reuse	m3	3.30		
1-E3431	Excavation for foundations in class III material max depth n.e 0.50 - 1 m for reuse	m3	1.60		
	<u>Excavation Ancillaries</u>				
1-E524	Preparation of excavated surface	m2	13.50		
1-E534	Disposal of excavated material	m3	7.00		
	<u>Filling and compaction</u>				
1-E6114	To structures	m3	1.30		
F	<u>IN-SITU CONCRETE</u>				
	<u>Provision of Concrete</u>				
1-F343	Concrete grade C25 with 20mm aggregate	m3	5.00		
	<u>Placing of Concrete</u>				
1-F824	Thickness 150-300mm thick in footings and slab	m3	5.00		
G	<u>CONCRETE ANCILLARIES</u>				
	<u>Formwork</u>				
1-G241	Not exceeding 0.2m	m2	8.00		
	<u>Reinforcement</u>				
1-G573	Mesh 256	m2	27.00		
	<u>Concrete accessories</u>				
1-G812	Finishing of top surface using steel trowel	m2	27.00		
M	<u>STRUCTURAL METAL WORK</u>				
1-M421	Supply and installation of roof structural steel work including anchoring into existing block work	ton	1.30		
1-M870	Painting to surface of steel	sum	1.00		
U	<u>BRICKWORK,BLOCKWORK AND MASONARY</u>				
1-U412	Vertical wall blockwork not exceeding 150mm	m2	12.00		
1-U491	Brickforce	m	59.00		
TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET					

	TITLE: Seed For Resilience Project: ZAMBIA				
ITEM No.	DESCRIPTION	UNIT	QTY	RATE (Euro)	AMOUNT (Euro)
Bill No.1: CIVIL WORKS					
W	<u>WATERPROOFING</u>				
1-W131	Water proofing sheeting 500 gauge	m2	26.50		
1-W121	0.4mm IBR roof sheets colour to be advised.	m2	36.00		
X	<u>MISCELLANEOUS WORK</u>				
	<u>DRAINAGE</u>				
1-X900	Construct spoon drain as per drawing SFR-ZM-C-01 REV 00	m	20.00		
TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET					
COLLECTION SHEET					
PAGE NO.					
1					
2					
CARRIED TO GRAND SUMMARY					

	TITLE: Seed For Resilience Project: ZAMBIA				
ITEM No.	DESCRIPTION	UNIT	QTY	RATE (Euro)	AMOUNT (Euro)
Bill No.2: CIVIL WORKS					
	<u>EQUIPMENT ROOM</u>				
	Preamble: The relevant drawings are the DRAWING series SFR-ZM-C-02 REV 00 (including references made there-in to other drawings) and specifications				
D	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Clearance</u>				
2-D111	Urban land remove from site and disposed of	ha	0.01		
E	<u>EARTHWORKS</u>				
2-E31	Topsoil	m3	9.00		
2-E3411	Excavation for foundations in class III material max depth n.e 0.25m for reuse	m3	4.50		
2-E3421	Excavation for foundations in class III material max depth 0.25 - 0.5 m for reuse	m3	4.50		
2-E3431	Excavation for foundations in class III material max depth n.e 0.50 - 1 m for reuse	m3	8.50		
	<u>Excavation Ancillaries</u>				
2-E524	Preparation of excavated surface	m2	17.50		
2-E534	Disposal of excavated material	m3	14.10		
	<u>Filling and compaction</u>				
2-E6114	To structures	m3	3.40		
F	<u>IN-SITU CONCRETE</u>				
	<u>Provision of Concrete</u>				
2-F321	Concrete grade C15 with 10mm aggregate	m3	0.90		
2-F343	Concrete grade C25 with 20mm aggregate	m3	10.50		
	<u>Placing of Concrete</u>				
2-F711	Thickness n.e 50mm think as blinding	m3	0.90		
2-F824	Thickness 150-300mm think in footings and slab	m3	10.00		
2-F861	In beam	m3	0.60		
G	<u>CONCRETE ANCILLARIES</u>				
	<u>Formwork</u>				
2-G241	Not exceeding 0.2m	m2	12.00		
	<u>Reinforcement</u>				
2-G523	High yield steel	ton	0.90		
2-G573	Mesh 256	m2	17.40		
	<u>Concrete accessories</u>				
2-G812	Finishing of top surface using steel trowel	m2	42.80		
M	<u>STRUCTURAL METAL WORK</u>				
2-M421	Supply and installation of roof structural steel including anchoring into existing block work	ton	1.20		
2-M870	Painting to surface of steel	sum	1.00		
TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET					

	TITLE: Seed For Resilience Project: ZAMBIA				
ITEM No.	DESCRIPTION	UNIT	QTY	RATE (Euro)	AMOUNT (Euro)
Bill No.2: CIVIL WORKS					
U	<u>BRICKWORK,BLOCKWORK AND MASONARY</u>				
2-U412	Vertical wall blockwork not exceeding 150mm	m2	90.00		
2-U492	DPC	m	17.20		
2-U491	Brickforce	m	319.00		
V	<u>PAINTING</u>				
2-V563	To plastered wall 3 coats	m2	186.70		
2-V863	To plastered wall 3 coats	m2	18.50		
W	<u>WATERPROOFING</u>				
2-W131	Water proofing sheeting 500 gauge	m2	42.80		
2-W153	Plaster in ordinary cement sand mortor	m2	205.20		
2-W121	IT4 roofing sheets	m2	45.20		
X	<u>MISCELLANEOUS WORK</u>				
	<u>WAINDOWS</u>				
2-X681	Louvre aluminium frame	Nr	4.00		
	<u>DOORS</u>				
2-X900	Supply and install Steel door door as per drawing SFR-ZM-C-02 REV 00	Nr	1.00		
2-X901	Sisalation 400	m2	45.20		
2-X902	Ramp	sum	1.00		
2-X904	Cover flashing grouted into wall	m	10.30		
TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET					
COLLECTION SHEET					
PAGE NO.					
1					
2					
TOTAL CARRIED TO GRAND SUMMERY					

	TITLE: Seed For Resilience Project: ZAMBIA				
ITEM No.	DESCRIPTION	UNIT	QTY	RATE (Euro)	AMOUNT (Euro)
Bill No.3: CIVIL WORKS					
	<u>EXISTING OFFICE BUILDING</u>				
	Preamble: The relevant drawings are the DRAWING series SFR-ZM-P-01 REV 00 (including references made there-in to other drawings) and specifications				
D	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>Demolition</u>				
3-D361.1	Carefully remove front entrance door and return to Client	sum	1.00		
3-D361.2	Carefully remove existing window to create opening for door way for the access walkway	sum	1.00		
V	<u>PAINTING</u>				
3-V563.1	To plastered wall 3 coats internal	m2	875.70		
3-V563.2	To plastered wall 3 coats external	m2	354.00		
3-V590	To Ceiling	m2	423.50		
X	<u>MISCELLANEOUS WORK</u>				
	<u>DOORS</u>				
3-X900	Wooden double 30 minutes Fire door 1495x2020 including all associated ironmogery,panic bar & signage	Nr	2.00		
3-X901	Grille door as per tender drawings	Nr	2.00		
3-X902	Paint to existing door/frames and window frames	sum	1.00		
TOTAL CARRIED FORWARD TO GRAND SUMMARY					

	TITLE: Seed For Resilience Project: ZAMBIA				
ITEM No.	DESCRIPTION	UNIT	QTY	RATE (Euro)	AMOUNT (Euro)
Bill No.4: CIVIL WORKS					
X	<u>Proposed Drying Room Building</u>				
	Preamble: The relevant drawings are the DRAWING series SFR-ZM-P-01 REV 00 (including references made there-in to other drawings) and specifications				
	<u>MISCELLANEOUS WORK</u>				
	<u>Repair cracks</u>				
	4-X900 Repair and stabilize cracked masonry walls by means of crack stitching	sum	1.00		
	4-X901 Repair and stabilize floor cracks by means of injecting a structural repair mortar	sum	1.00		
	<u>Blockwork</u>				
	4-X902 Extend existing 150mm block wall to ceiling height including plastering	m2	38.50		
	4-X903 Seal off existing ground level 500x400 ventilation openings with blockwork & palster	m2	2.00		
	4-X904 Supply and install 200x50mm treated facial board, including vanish and allow for removal of damaged board.	m	78.00		
	4-X905 Supply and install timber working counter complete with cupboard with provision for sink unit	PS	1.00		
	4-X906 Supply and install a double bowl single drain franke kitchen sink unit c/w with tap mixer and 32mm waste and CP bottle trap	sum	1.00		
	4-X907 Allow for connection of (All Plumbing Works) water supply and waste disposal from the existing existing office building	PS	1.00		
	4-X908 Allow for rehabilitation of small power and lighting	sum	0.00		
	4-X909 Allow for repair works to existing ceiling	sum	1.00		
	4-X910 Paint to external & internal walls and ceiling including all surface preparation, colours to match existing paint.	sum	1.00		
	<u>Windows</u>				
	4-X911 Supply and install aluminium frame openable area 1 - 2 m2 complete with lintel and allow for careful demolition of blockwork and removal of rubble.	sum	1.00		
	4-X912 Supply and installation of timber ground level 500x400mm ventilation flap gates to suit the existing complete with hinges and frame where required.	PS	1.00		
	4-X913 Supply and install 1200 x 300mm flyscreens only on wall elevated ventilation windows, removal of delapidated flyscreens and remove from site.	PS	1.00		
	4-X914 Carefully remove front entrance door and return to Client	Nr	1.00		
	4-X915 Wooden double 30 minutes Fire door 1495x2020 including all associated ironmogery,panic bar & signage	Nr	1.00		
TOTAL CARRIED FORWARD TO GRAND SUMMARY					

	TITLE: Seed For Resilience Project: ZAMBIA				
ITEM No.	DESCRIPTION	UNIT	QTY	RATE (Euro)	AMOUNT (Euro)
Bill No.5: MECHANICAL WORKS					
	Preamble: <u>The relevant drawings are the DRAWING SFR-ZM-E-01 (including references made there-in to other drawings provided at tender)</u>				
5.1	<u>Chamber</u>				
5.1.1	Thermal insulated panels 80mm	m ²	81.00		
5.1.2	Floor vapor barrier	m ²	28.00		
5.1.3	Double sealing of panels	m ²	210.00		
5.1.4	Cold room door	nr	2.00		
5.1.5	Assembly accessories	m ²	81.00		
5.2	<u>Equipment</u>				
5.2.1	Condensing Unit	nr	2.00		
5.2.2	Evaporator	nr	2.00		
5.2.3	Dehumidifier	nr	2.00		
5.2.4	Equipment installation	LS	2.00		
5.2.5	Electrical installation	LS	1.00		
5.2.6	Ducting installation	LS	1.00		
5.2.7	Electrical control panel 1	nr	1.00		
5.2.8	Electrical control panel 2	nr	1.00		
5.2.9	Electrical control panel 3	nr	1.00		
5.3	<u>Installation</u>				
5.3.1	Engineering, transportation, insurances, administration and utility.ETC	LS	1.00		
5.4	<u>Electrical works</u>				
5.4.1	Supply & Installation of electrical works in the drying room	PS	1.00		
TOTAL CARRIED TO GRAND SUMMARY					

TECHNICAL PROPOSAL

(TO BE PROVIDED BY BIDDER)

- Site Organization and Method Statement
- Construction Schedule
- Personnel proposed
- Equipment proposed

Qualification Information

*[The information to be filled in by **bidders** in the following pages shall be used for purposes of qualification as provided for in ITB 5. This information shall not be incorporated in the Contract. Attach additional pages as necessary. Pertinent sections of attached documents should be translated into English].*

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 Annual amounts of construction works performed during the last *[insert number pursuant to BDS sub clause 4.5(a)]* years *[insert amounts in the national currency equivalent]*
- 1.3 Number *[insert number pursuant to BDS sub clause 4.5 (b)]* of works of a nature and amount similar to the Works performed as prime Contractor over the last *[insert number pursuant to BDS 4.5(b)]* years. *[The amounts 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(s).]*

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

- 1.4 Major items of Contractor's Equipment proposed for carrying out the Works. *[List all information requested below. Refer also to ITB Sub-Clause 5.3 (d).]*

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)			

- 1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. *[Attach biographical data. Refer also to ITB Sub-Clause 5.3 (e) and GC Sub-Clause 9.1.]*

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

1.6 Proposed subcontracts and firms involved. Refer to GC Clause 7.

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

1.7 Financial reports for the last *[insert number; usually 5] 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(s) in which the Bidder is involved.

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

1.11 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 - 1.10 above shall be provided for each partner of the joint venture.
 - 2.2 The information in 1.11 above shall be provided for the joint venture.
 - 2.3 Attach the power of attorney of the signatory(ies) of the Bid authorizing 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 shall be nominated as being in charge, authorized 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 BDS.

Section V. Eligibility Criteria

Eligibility in KfW-Financed Procurement

1. Consulting Services, Works, Goods, Plant and Non-Consulting Services are eligible for KfW financing regardless of the country of origin of the Contractors (including Subcontractors and suppliers for the execution of the Contract), except where an international embargo or sanction by the United Nations, the European Union or the German Government applies.
2. Applicants/Bidders (including all members of a Joint Venture and proposed or engaged Subcontractors) shall not be awarded a KfW-financed Contract if, on the date of submission of their Application/Offer or on the intended date of Award of a Contract, they:
 - 2.1 are bankrupt or being wound up or ceasing their activities, are having their activities administered by courts, have entered into receivership, or are in any analogous situation;
 - 2.2 have been
 - (a) convicted by a final judgement or a final administrative decision or subject to financial sanctions by the United Nations, the European Union and/or the German Government for involvement in a criminal organisation, money laundering, terrorist-related offences, child labour or trafficking in human beings; this criterion of exclusion is also applicable to legal Persons, whose majority of shares are held or factually controlled by natural or legal Persons which themselves are subject to such convictions or sanctions;
 - (b) convicted by a final court decision or a final administrative decision by a court, the European Union or national authorities in the Partner Country or in Germany for Sanctionable Practice during any Tender Process or the performance of a Contract or for an irregularity affecting the EU's financial interests, unless they provide supporting information together with their Declaration of Undertaking (Form available as Appendix to the Application/Offer which shows that this conviction is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction;
 - 2.3 have been subject within the past five years to a Contract termination fully settled against them for significant or persistent failure to comply with their contractual obligations during Contract performance, unless this termination was challenged and the dispute resolution is still pending or has not confirmed a full settlement against them;
 - 2.4 have not fulfilled applicable fiscal obligations regarding payments of taxes either in the country where they are constituted or the PEA's country;
 - 2.5 are subject to an exclusion decision of the World Bank or any other multilateral development bank and are listed in the respective table with debarred and cross-debarred firms and individual available on the World Bank's website or any other multilateral development bank unless they

provide supporting information together with their Declaration of Undertaking which shows that this exclusion is not relevant in the context of this Contract or

2.6 have given misrepresentation in documentation requested by the PEA as part of the Tender Process of the relevant Contract.

3. State-owned entities may compete only if they can establish that they (i) are legally and financially autonomous, and (ii) operate under commercial law. To be eligible, a state-owned entity shall establish to KfW's satisfaction, through all relevant documents, including its charter and other information KfW may request, that it: (i) is a legal entity separate from their state (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to their state, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt.

Section VI. KfW Policy – Sanctionable Practice – Social and Environmental Responsibility

1. Sanctionable Practice

The PEA and the Contractors (including all members of a Joint Venture and proposed or engaged Subcontractors) must observe the highest standard of ethics during the Tender Process and performance of the Contract.

By signing the Declaration of Undertaking the Contractors declare that (i) they did not and will not engage in any Sanctionable Practice likely to influence the Tender Process and the corresponding Award of Contract to the PEA's detriment, and that (ii) in case of being awarded a Contract they will not engage in any Sanctionable Practice.

Moreover, KfW requires to include in the Contracts a provision pursuant to which Contractors must permit KfW and in case of financing by the European Union also to European institutions having competence under European law to inspect the respective accounts, records and documents relating to the Tender Process and the performance of the Contract, and to have them audited by auditors appointed by KfW.

KfW reserves the right to take any action it deems appropriate to check that these ethics rules are observed and reserves, in particular, the rights to:

- (a) reject an Offer for Award of Contract if during the Tender Process the Bidder who is recommended for the Award of Contract has engaged in Sanctionable Practice, directly or by means of an agent in view of being awarded the Contract;
- (b) declare misprocurement and exercise its rights on the ground of the Funding Agreement with the PEA relating to suspension of disbursements, early repayment and termination if, at any time, the PEA, Contractors or their legal representatives or Subcontractors have engaged in Sanctionable Practice during the Tender Process or performance of the Contract without the PEA having taken appropriate action in due time satisfactory to KfW to remedy the situation, including by failing to inform KfW at the time they knew of such practices.

KfW defines, for the purposes of this provision, the terms set forth below as follows:

Coercive Practice	The impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of the person with a view to influencing improperly the actions of a person.
Collusive Practice	An arrangement between two or more persons designed to achieve an improper purpose, including influencing improperly the actions of another person.

Corrupt Practice	The promising, offering, giving, making, insisting on, receiving, accepting or soliciting, directly or indirectly, of any illegal payment or undue advantage of any nature, to or by any person, with the intention of influencing the actions of any person or causing any person to refrain from any action.
Fraudulent Practice	Any action or omission, including misrepresentation that knowingly or recklessly misleads, or attempts to mislead, a person to obtain a financial benefit or to avoid an obligation.
Obstructive Practice	Means (i) deliberately destroying, falsifying, altering or concealing evidence material to the investigation or the making of false statements to investigators, in order to materially impede an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice, or threatening, harassing or intimidating any Person to prevent them from disclosing their knowledge of matters relevant to the investigation or from pursuing the investigation, or (ii) any act intended to materially impede the exercise of KfW's access to contractually required information in connection with an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice.
Sanctionable Practice	Any Coercive Practice, Collusive Practice, Corrupt Practice, Fraudulent Practice or Obstructive Practice (as such terms are defined herein) which is unlawful under the Financing Agreement.

2. Social and Environmental Responsibility

Projects financed in whole or partly in the framework of Financial Cooperation have to ensure compliance with international Environmental, Social, Health and Safety (ESHS) standards (including issues of sexual exploitation and abuse and gender based violence) Contractors in KfW-financed projects shall consequently undertake in the respective Contracts to:

- (a) comply with and ensure that all their Subcontractors and major suppliers, i.e. for major supply items comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the respective Contract and the fundamental conventions of the International Labour Organisation⁷ (ILO) and international environmental treaties and;

⁷In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

- (b) implement any environmental and social risks mitigation measures, as identified in the environmental and social impact assessment (ESIA) and further detailed in the environmental and social management plan (ESMP) as far as these measures are relevant to the Contract and implement measures for the prevention of sexual exploitation and abuse and gender-based violence.

PART 2 – WORKS REQUIREMENTS

Section VII. Works Requirements

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1. Specifications

- a) Technical Specifications
- b) Specifications for Project Area Environmental, Social, Health and Safety Management (ESHS)

2. Drawings

1. Specifications

a) Technical Specifications

**REHABILITATION AND UPGRADE OF SEEDBANK FACILITIES IN
CHILANGA MT MAKULU**

BMZ No.: 2018 01141

PROJECT SPECIFICATION

Prepared by: GOPA Infra GmbH

Revision History:

Rev.	Date	Revision	Purpose
0	05/05/2025	1 st Issue	Issued for Approval

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BUILDING WORKS

1 GENERAL

1.1 LAYOUT OF BUILDINGS

The layout of all building work to be carried out under this Contract shall be as detailed on the drawings.

1.2 DEFINITIONS

- 1) **“Project”** refers to the Seeds for Resilience Project.
- 2) **“Employer”** refers to The Crop Trust.
- 3) **“Engineer”** refers to GOPA Infra GmbH.
- 4) **“Contractor”** refers to the implementing entity.
- 5) **“Sub-Contractor”** refers to any Sub-Contractor or supplier appointed by the Contractor.

1.3 STANDARDS

Except where otherwise specified or implied the contract work and equipment supplied shall comply with the latest revisions of the standard specifications listed, including generally:

American National Standard Specifications

ANSI A137.1(1) Ceramic tile.

International Organisation for Standardisation

ISO 13007 Ceramic tiles -- Grouts and adhesives

ISO 10545-4 Ceramic tiles

South African Bureau of Standards

SANS 22 Glazed ceramic wall tiles and fittings

SANS 32 Internal and/or external protective coatings for steel tubes - Specification for hot dip galvanized coatings applied in automatic plants

SANS 62 Steel pipes Part 1: Pipes suitable for threading and of nominal size not exceeding 150 mm

SANS 460 Plain-ended solid drawn copper tubes for potable water

SANS 543 Fire hose reels

SANS 545 Wooden doors

SANS 581 Semi-flexible vinyl floor tiles

SANS 680 Glazing putty for wooden and metal window frames

SANS 727	Windows and doors made from rolled mild steel sections
SANS 967	Unplasticized poly(vinyl chloride) (PVC-U) soil, waste and vent pipes and pipe fittings
SANS 10005	The preservative treatment of timber
SANS 1090	Aggregates from natural sources - Fine aggregates for plaster and mortar
SANS 1099	Hardwood furniture timber
SANS 1200 HC	Standardized specification for civil engineering construction Section HC: Corrosion protection of structural steelwork
SANS 1215	Concrete masonry units
SANS 1783	Sawn softwood timber
SANS 10005	The preservative treatment of timber
SANS 10064	The preparation of steel surfaces for coating
SANS 10109	Concrete floors
SANS 10145	Concrete masonry construction
SANS 10252	Water supply and drainage for building
SANS 10400	The Application of the National Building Regulations
SANS 10112	The installation of polyethylene and poly(vinyl chloride)(PVC-U and PVC-M) pipes
SANS 15874	Polypropylene Pressure Pipes
SANS 50197-1	Cement Part 1: Composition, specifications and conformity criteria for common cements

1.3.1 Primer

i) For timber:

SANS 678 Type I for exterior use and Type III for internal work.

ii) For steel:

SANS 1319 Zinc phosphate for application to clean rust-free surfaces.

iii) For plastered walls:

SANS 1586 Emulsion paints, acrylic PVA plaster primer.

iv) Galvanised iron primer:

SANS 912

1.3.2 Under-coats

All surfaces, except emulsion paint:

SANS 681 Type I, to be used with quick-drying primers and glossy, mat or eggshell top-coats.

1.3.3 Paint top-coats

i) Aluminium paint :

SANS 682 Aluminium paint

ii) Structural steel paint :

SANS 684

iii) Emulsion paints for interior and exterior use:

SANS 1586 Emulsion paints

1.3.4 Varnish

i) Varnish for interior use :

SANS 887 Varnish for interior use

1.3.5 Piping Specifications

SANS 62 Steel Pipes and Fittings

SANS 460 Copper Tubes for Domestic Plumbing

SANS 509 Malleable Cast Iron Pipe Fittings

SANS 1067 Copper-Based Fittings for Copper Tubes

SANS 1315 Polypropylene Pressure Pipes

1.3.6 Drainage Pipe Specifications

SANS 746 Cast Iron Pipes and Fittings for use above Ground

SANS 791 uPVC Sewer and drain Pipes and Fittings

SANS 967 uPVC Soil, Waste and Vent Pipes and Fittings

1.3.7 Installation Specifications

SANS 791 Appendix C: Notes and Uses of uPVC Pipes

SANS 10112 The Installation of Polyethylene and uPVC Pipes

SANS 10252 Part 1 - Water Supply

1.4 COMPLIANCE WITH REGULATIONS

All building work must be carried out in full compliance with the Labour Code Order, and the National Building Regulations SABS 10400 except where required otherwise by the requirements of the pertinent local authority.

2 BRICKWORK, BLOCKWORK, AND PLASTERING

2.1 CONCRETE BLOCKS

Concrete masonry units (blocks) shall comply with SANS 1215 and shall be either solid or hollow as called for in the Bill of Quantities or shown on the drawings.

The preferred dimensions of units where not otherwise called for, are as follows:

TABLE 1: CONCRETE MASONRY UNIT DIMENSIONS

Unit	Dimensions
Solid Units	400 x 200 x 200 mm
Hollow Units	400 x 200 x 200 mm

The nominal compressive strength of solid units or hollow blocks shall be at least 4 MPa except where shown otherwise on the drawings or the Bill of Quantities

The average drying shrinkage of units shall not exceed 0,06% and the average expansion on rewetting shall not exceed 0.02% in excess of the actual drying shrinkage obtained from manufacturer's tests.

Sample units shall be taken at random by the Engineer, should be consider that tests are necessary to satisfy himself that there are no deficiencies in any consignment. Should deficiencies occur when tested in accordance with SANS 1215 the complete consignment may be rejected.

2.2 BONDING OF BRICKWORK AND BLOCKWORK

2.2.1 Blockwork Bonds

Bonding of blockwork shall comply with SANS 10145.

2.3 BRICKLAYING AND BLOCKLAYING

2.3.1 Laying Concrete Blocks

Concrete blocks shall be laid in compliance with SANS 10145.

Blocks shall not be wetted prior to laying in a wall. The drying shrinkage of the blocks to be laid shall be available to the Engineer in the form of a directive from the manufacturer of each type of masonry unit. The average annual humidity shall likewise be made available to the Engineer.

Blocks shall be laid on a full bedding of mortar. All joints are to be nominally 10 mm thick and both vertical and horizontal joints shall be completely filled. Blocks shall be laid with the thicker shell face outermost. They shall be laid in stretcher bond with the horizontal distance between vertical joints in adjacent course equal to at least one quarter of the length of the block. All blockwork shall be built true and plumb with the perpend vertically in line.

Corners and other work where the blocks are necessarily laid to a higher level than the general progress of work shall be stepped back and not raised above the level of the remaining blockwork by more than one metre.

Blocks below damp-proof course level shall be concrete filled using concrete having the same mix proportions as the concrete in the strip foundations. The concrete shall be struck off flush at damp proof course level.

Horizontal reinforcement shall be placed at 600 mm (or every third course) vertical spacings unless shown otherwise on the drawings and bond beams shall be incorporated in the structure as shown on the drawings.

2.4 BUILDING IN PIPES, FRAMES, STEELWORK, VENTS, ETC

Where indicated on the Drawings or ordered by the Engineer, openings for louvre vents shall be formed through walls, and vents supplied by an approved manufacturer shall be fitted therein and neatly finished off.

Where indicated on the Drawings, openings shall be formed through walls for extraction fans, air filters and the filters. The required equipment, complete with bird proof weather cowls, shall be supplied, and fitted therein by an approved specialist firm. Making good around the fan unit shall be carried out by the Contractor.

All window and door frames and wall vents are to be set up and built-in as the brickwork proceeds. Window and door frames are to be set, bedded, and pointed in 4:1 sand cement mortar and the tendered unit rates are to include for any cutting and fitting of brickwork and for making good thereafter. The unit rates are also to include for attending to windows, doors, and vents etc, in order to leave them in perfect working order. The Contractor will be held liable for the repair of any damage done to such items during progress of the work.

Where pipes, frames, brackets or other such parts pass through or have to be set into brickwork, the bricks shall be carefully cut and fitted around the parts so as to maintain regularity of courses and uniformity of joints, the shaped bricks being bedded and pointed to conform with the surrounding brickwork. Where such parts have to be set into position after brickwork is built, holes shall be left wherever possible, in preference to cutting out bricks, and the work shall be subsequently made good in the manner described.

2.5 DAMP PROOFING

2.5.1 Damp Proof Course

Where indicated on the Drawings, a damp proof course is to be embedded into the work, consisting of a bituminous sheeting of mass not less than 1,3 kg/m² or PVC sheeting of 0,375 mm thickness laid over the full width of the wall, lapped and sealed at all joints. Where shown on the Drawings, the damp proof course is to be stepped up one course of brickwork in the inner skin. Proper returns are to be made at all door frames.

Damp proof courses in blockwork shall be laid strictly in accordance with SANS 10145 at all places indicated in that Code or Practice.

2.6 WINDOW SILLS

Window sills shall be manufactured and installed as shown on the drawings including items such as damp proof course and expanded metal reinforcement where called for.

2.7 PRECAST CONCRETE LINTELS

Precast concrete lintels over doors and windows shall be E-type supplied by an approved manufacturer and suitable for the thickness of the walls being constructed. Shoring of soffits of lintels shall be fixed on spans exceeding 2,5 m and left in place for as long as the Engineer considers necessary. The length of lintels shall be such as to give at least 200 mm of bearing at each end.

2.8 WALL CHASING

Where directed by the Engineer the Contractor shall chase brickwork to accommodate electrical conduit. The Contractor's rates for chasing shall include for making good the brickwork after the conduit has been fixed.

Chasing in masonry units shall be carried out in compliance with SANS 10145 and where possible, as directed by the Engineer, shall be cut prior to laying the blocks.

In the case of unplastered concrete walls electrical conduit shall either be cast into the concrete during pouring or surface mounted as indicated on the drawings or in the Bill of Quantities.

2.9 CEMENT MORTAR

Mortars to be used for block laying are to be in accordance with either Classes I, II or III as specified in SANS 10145 as called for in the Bill of Quantities or on the drawings. Should no specific strength be specified then Class II mortar having a compressive strength of 5 MPa at 28 days shall be used.

2.10 REINFORCEMENT

Reinforcement to blockwork shall comprise galvanised welded mesh supplied in rolls. The mesh shall be of suitable width to suit the blockwork thickness and the minimum cover from any external face shall be at least 20 mm. The number of courses where reinforcement is to be built in shall be at 600 mm (maximum) vertical spaces, except where shown otherwise on the drawings.

2.11 HOOP IRON TIES AND ANCHORS

Galvanised hoop iron ties shall be provided for securing roof timbers to brick walls and shall be built-in to a vertical depth of not less than six courses of brickwork with bottom ends bent square to form an anchor. The upper ends shall project at least 450 mm above the brickwork for attachment to roof timberwork.

Anchoring of roofs and floors in blockwork shall be carried out in accordance with SANS 10145 except where shown otherwise on the drawings.

2.12 PLASTERING

Plastering shall be composed of one part Portland cement CEM 42.5 plus one tenth part lime to four parts fine plaster sand from an approved source. An equivalent mortar comprising other cementitious materials may be approved by the Engineer, after testing. Plaster shall be applied to walls in one coat 12 mm thick and well worked into brickwork or blockwork joints, which shall have been previously raked out to form a key. The surface of the work shall be finally smoothed with a wooden float or steel trowel, as may be called for, depending upon the nature of the surface required. Angles and are to be carefully plumbed or levelled, as the case may be, and corners shall be rounded.

In the case of plastering to edges concrete work, the surface of the concrete shall first be hacked sufficiently to afford proper bond and the plaster applied as a thin skimming coat, or coats. V-joints shall be formed at the junction of concrete and brickwork. Plaster adhesive supplied by a reputable manufacturer may be used on the concrete faces in lieu of hacking, subject to approval by the Engineer.

Where scheduled or shown on the drawings, the external faces of brickwork, blockwork and/or concrete shall be cement mortar plastered.

Should any plaster show signs of cracking, blowing or other defects at any time before or during the Defects Liability Period, the defective work shall, either be stripped and re-plastered or locally repaired by the Contractor, all at his own expense, as directed by the Engineer. The defective areas shall be cut out to a rectangular shape unless otherwise permitted, with edges undercut to form a key and the joint carefully smoothed off flush with the surrounding plaster. Plasterwork should in all cases be commenced at the top and proceed downwards and every care must be taken to prevent staining of face brickwork and other finished parts with plaster droppings. Such droppings shall not be allowed to harden, but shall be cleaned off continuously as plastering proceeds. Plaster droppings in sumps must be removed to the approval of the Engineer. Plastering must be carried out from ceiling to floor and from wall to wall without any breaks in the plastered surface.

2.13 PAYMENT FOR BLOCKWORK

2.13.1 Blockwork

Payment for blockwork will be made by area of finished blockwork of various thicknesses and types, measured in elevation. Unit: m²

Prices shall be inclusive of the provision of all materials, plant and labour necessary for completing the work including the building in of wire ties, all plumbing of corners and faces, lining, levelling, forming reveals and openings, cutting where necessary and plastering where specified. The measurement of the work will be taken nett with window and door openings deducted, but no deductions from the measurements will be made for lintels, air bricks, pipes up to and including 150 mm diameter or fittings up to 150 mm square built into the work. Small openings of area up to 0.05 m² will not be deducted.

PB2.16.2 BLOCKWORK CONCRETE INFILL

Payment for infilling of blockwork with concrete shall be extra over the payment item 2.13.1 above, for various thickness and types, measured in elevation.

The rate shall include the provision of expanded metal mesh where indicated. Unit: m²

PB2.16.3 WATERPROOF COATING

Payment for waterproof coating of external faces shall be by the surface area actually treated.
Unit: m²

2.14 PAYMENT FOR PLASTERING

Payment for plastered finish to walls will be made by area of finished plaster, measured in elevation, for each surface finish specified. Prices shall be inclusive of the provision of all materials, plant, and labour necessary for carrying out the plastering work, including the plumbing of corners and faces and forming reveals and openings. The measurement of the work will be taken net with window and door openings deducted. Small openings of area up to 0.05 m² will not be deducted.

Unit: m²

3 FLOOR FINISHES AND WALL TILING

3.1 GRANOLITHIC FINISH

3.1.1 Materials

Granolithic paving shall consist of one part Portland cement CEM 42.5, one part sand and two parts 5 mm stone chippings, thoroughly mixed as for concrete and applied to the surface of the underlying concrete in a layer not less than 20 mm thick, levelled or graded and trowelled to a smooth uniform surface. Granolithic shall be either untainted or tinted, as called for in the Bill of Quantities.

3.1.2 Laying

The laying of the granolithic finish shall be in full compliance with the relevant clauses of SANS 10109 Part 2. To ensure thorough bond, the granolithic should, where possible, be applied before the concrete below has become properly set and preferably while it is still green, and every precaution must be taken to keep the concrete damp and clean until the granolithic is placed. If this is not possible, then the underlying concrete must be chipped or otherwise roughened to the approval of the Engineer, flushed with clean water and then coated with cement grout before the granolithic is laid.

Granolithic pavings are to be V-jointed in squares of approximately 1.25 metres side length, the V-joint being formed while the surface is still soft.

Where floor cables are not covered by chequered plate or other steel flooring, any cable ducts shall be filled with clean river sand to a depth of 70 mm from the finished granolithic level after all cables are in position and have been tested. A 50 mm thick layer of Grade 20 concrete shall be placed on top of the sand, which in turn shall be covered with granolithic. V-joints shall be formed at both sides of all cable ducts, the joints being accurately positioned.

V-joints are to be formed in straight lines and extend to 75% of the full depth of the granolithic layer.

Where shown or directed by the Engineer, 100 mm high granolithic skirtings are to be formed. They shall include rounded top edges, and radiused corners and a 38 mm radius coving at junctions with the floor. The tendered rates shall include for forming all internal and external mitres, returns, stopped ends, etc, all finished smooth with a steel trowel. At steps a sloping skirting shall be formed, 100 mm high above the noses of the steps. Where ordered, the treads risers and sides of steps, shall also receive a granolithic finish

and at the edge of steps and slabs rounded nosing and reeded treads shall be provided. A sunk and weathered threshold shall be provided in the granolithic at all doors.

The sides and exposed top parts of plinths, drainage channels in concrete, sumps in false floors and all benching in manholes shall also receive a granolithic finish.

3.1.3 Payment for Granolithic Finish

3.1.3.1 Granolithic Finish

Payment for granolithic finish shall be by area of finished surface irrespective of whether it is horizontal, vertical (except for skirting) or on the slope. The price shall include for all the work specified including treating the underlying concrete surface.

Unit: m²

3.1.3.2 Granolithic Skirting

Payment for granolithic skirting shall be per linear metre of completed skirting, for each height scheduled.

Unit: m

Price shall be inclusive of the provision of all materials, plant, and labour necessary to complete the granolithic work and for any material which is wasted.

3.2 VINYL (PVC) FLOOR TILING

3.2.1 General

Where indicated on the drawing vinyl (PVC) semi-flexible floor tiles shall be installed.

3.2.2 Materials

The tiles shall comply with SANS 10109-1977. Unless otherwise indicated the tiles shall be 300 mm x 300 mm x 2.5 mm thick and of an approved light colour chosen from the manufacturer's standard range. Vinyl cove skirtings shall be of similar quality and colour to the floor tiles and 70 mm in height unless otherwise stated.

3.2.3 Laying and Fixing

Floors to receive vinyl tiles shall be covered with a mortar screed comprising 4 parts sand to one part Portland cement CEM 42.5 and of 25 mm average thickness and minimum of 20 mm thick except where laid on an unbonded damp-proof membrane, in which case the screed shall be 50 mm thick. The screed shall be finished with its upper surface perfectly level and continuous without voids or float marks. The screed materials and methods of laying shall be in full compliance with SANS 10109 Part 2. The screed shall be at least 7 days old and perfectly dry, to the approval of the Engineer, prior to laying the vinyl tiles. The underlying concrete shall be thoroughly cleaned to the Engineer's approval prior to laying the screed.

The tiles shall be laid, strictly in accordance with the manufacturer's instructions onto the screed using the recommended adhesive. This adhesive shall be spread with a Vee notched trowel 1.5 x 1.5 x 1.5 mm

triangular notches at 4 mm centres. The coverage of adhesive shall be between 5.0 and 5.5 m² per litre. After laying, the tiles are to be rolled with a suitable roller to ensure complete adhesion. The floor tiles shall be cut where required and nearly fitted against adjoining walls, floors, thresholds, etc. Vinyl skirtings shall be close fitted to floors and walls, butted and end jointed, neatly mitred at internal angles and dressed around external angles, and fixed with adhesive as for the flooring.

Finished floors and skirtings shall be protected from damage during the progress of the remaining work, and at completion shall be cleaned and handed over in a perfect condition. The work shall be carried out by skilled workmen experienced in laying this type of floor finish.

3.2.4 Payment for Vinyl Floor Tiling

Payment for vinyl tile flooring shall be per net area of completed floor surface. The rate shall include for all the work specified above including the cement mortar screed and the preparation of the surface of the concrete structural floor.

Unit: m²

Payment for skirting shall be by length of the completed skirting of each height scheduled.

Unit: m

Prices shall be inclusive of the provision of all materials, plant, and labour necessary to complete the required work and for any material wastage.

3.3 TEXTILE FLOOR COVERING

3.3.1 Materials

Textile floor coverings shall be of the type scheduled, including an underlay where called for, and laid in full compliance with SANS 10186.

3.3.2 Substrate

The substrate on which textile floor coverings are to be laid shall be as shown on the drawings, and where textile floor coverings are laid on a concrete screed, the screed shall comply with Clause 3.1 above.

3.3.3 Payment for Textile Floor Coverings

Payment for textile floor coverings shall per net area of completed floor surface. The rate shall include for all work specified including the preparation of the structural surface, the cement mortar screed, the underlay where called for and the laying of the textile floor covering.

Unit: m²

Payment for skirting shall be by length of completed skirting for each height scheduled. Unit: m

Prices shall be inclusive of the provision of all materials, plant, and labour necessary to complete the required work and for any material wastage.

3.4 WALL TILING

3.4.1 General

In all cases, tiles shall be selected bearing in mind the need for textured surfaces (where surfaces may be wet or damp), the chemical resistance required and stain resistance (due to the conditions to which they will be exposed) and whether tiles should be glazed or unglazed.

The minimum PEI rating for wall tiles shall be 2 and for floor tiles it shall be 4.

3.4.2 Tiles for Interior Work

Glazed ceramic tiles and fittings shall comply with the requirements of SANS 22 and, unless otherwise called for on the drawings or Bill of Quantities, shall be of the type and size specified. 6.5 mm thick minimum, to ANSI A137.1(1) for ceramic tiles.

PB3.4.2 FIXING OF TILES

The tiles shall be fixed to previously sand/cement rendered walls with an approved cementitious tile adhesive. Horizontal and vertical joints in the tiling shall be continuous and at least 2 mm wide. After fixing and setting for at least 12 hours the joints shall be filled in completely with an approved white cement grout. Tiles shall not be soaked in water before fixing except where recommended by the tile manufacturer. The finished work shall be thoroughly cleaned off after grouting is completed.

Unless otherwise specified, the wall tiling shall project approximately 4 mm beyond the face of adjoining plaster with all exposed edges finished with glazed edge tiles.

Tiling shall be returned into reveals of openings and on to window sills, and shall be butted at internal angles and provided with glazed edged tiles to external angles, unless otherwise specified. All necessary cutting of tiles shall be properly performed.

Unless otherwise specified on drawings, tiles are to be fixed outwards from the centre of the walls and upwards from approx. 140 mm above the floor, with cut tiles at the extremities of the wall face and floor areas. Exposed external edges must be finished with a full glazed edge tile. The 140 mm of height below the bottom tiles shall be filled in with the same type of tile cut to fit where no special skirting tile is schedule or shown on the drawings.

Provision must be made for any pipework or protrusions through the walls. Tiles must be finished off around the protrusion and take the necessary shape to accommodate any pipework, etc.

Joints around such protrusions are to be similar in width to joints in the rest of the tiling, unless the Engineer instructs otherwise.

Expansion joints for wall tiles, unless otherwise specified by the manufacturers are to be provided in areas that are in excess of 6.0 metres, measured horizontally along floor and 3.0 metres, measured vertically along wall, or as indicated on drawings. These joints are to have a maximum width of 4 mm and be filled with white silicone.

3.5 GROUTING MATERIALS

Appropriate grouting material must be chosen in compliance with ISO 13007 specifications and suitable for the specified application. Grout shall in all cases be water proof and stain resistant.

3.5.1 Payment for Wall Tiling

Payments for tiling will be by area of completed tiling including exposed tiled ledges, window and door returns, etc, but the area of window and door openings will be excluded. Unit: m²

Expansion joints will be paid for separately per linear metre. Unit: m

Tendered rates shall include for the provision of all materials (including waste and all special tiles, e.g. stair treads, skirting tiles, external and internal angle tiles and cover base skirting tiles) and for all labour and plant necessary to complete the work shown on the drawings or schedule.

Payment for skirting will be measured separately by length only where a special skirting tile is called for. Unit: m

4 CARPENTRY, JOINERY, TIMBERWORK, AND CEILINGS

4.1 TREATMENT OF TIMBER

Timber shall be treated in accordance with the requirements of the local building regulations.

The preservative to be used shall be covered by relevant SANS specifications and shall be to the approval of the Engineer.

4.2 WROUGHT FACE

All exposed woodwork, unless otherwise described, is to be wrought and for each wrought face 1.5 mm will be allowed off the specified sizes. All wrought faces are to be finished smooth and free from tool marks.

4.3 STRUCTURAL AND ENGINEERING TIMBER

All timber to be used in general structural work shall conform to the requirements of SANS 1783 for stress Grade V.4 with a density of at least 360 kg/m³, unless otherwise scheduled.

Where a stress grade other than V.4 is called for, the timber used shall conform to SANS 1783 for engineering timber. Where reference is made to SANS 1783 for Engineering Timber, the strength grade shall be V.6 with a density of at least 450 kg/m³, unless otherwise scheduled or shown on the drawings.

4.4 SHRINKING, WRAPPING, AND TWISTING

Should any timber member shrink or warp more than 3 mm, or twist more than 2° over its full length, the same shall be removed and new timber re-fixed in its place at the Contractor's expense, together with any other member which may thereby be affected.

4.5 PREFABRICATED ROOF TRUSSES

Prefabricated timber roof trusses shall be made from South African pine complying with 4.3 above, having a stress grading of V.6 and bearing the SANS mark. The joints shall be butted and joined with suitably sized "gangnail" or similar approved galvanised connector plates. Each joint shall be capable of withstanding a loading at least 50% in excess of that imposed by the maximum design load for the truss.

Drawings of the prefabricated trusses the Contractor proposes to use shall be submitted to the Engineer for approval in good time prior to the Contractor placing orders for such trusses. The drawings shall show the following minimum information for each type of truss required.

- a) The design span.
- b) The overall height from underside of cross beam to apex.
- c) An elevation of the truss showing the size of all the members, the position of the purlins and the spacing of the trusses along the line of the roof.
- d) The “gangnail” plate sizes at every joint.
- e) The type of roof covering material and the design loading.

4.6 ROOF TIMBER WORK

4.6.1 Bolted Roof Trusses

These trusses including the tie beams shall be made from timber having a stress grading of V.4 and shall be constructed to the dimensions shown on the drawings or as scheduled. The trusses shall be strongly framed, halved, checked, and bolted together in the best manner and in accordance with acceptable practice. The work is to be soundly secured and accurately lined and set to conform with the overall sizes given. The timber shall be wrought where exposed to view.

Bolts unless otherwise specified or scheduled shall be 12 mm diameter, of adequate length and provided with a pair of 50 mm diameter x 2,0 mm thick circular washers.

4.6.2 Timber Wall Plates, PURLINS, and Other Members

Timber roof members shall be manufactured from timber complying with 4.3 above and shall be cut to the dimensions shown in the drawings, mitred and jointed where necessary. Joints in straight runs of timber shall be spliced and nailed, with the length of splice being at least 5 times the depth of the member and the nail centres equal to the depth. The number of joints shall be minimised to the approval of the Engineer.

All members which are built into brickwork or blockwork and all faces of members exposed to the weather shall receive a suitable approved wood treatment.

4.7 CEILINGS

4.7.1 Normal Sheeted Ceilings

The underside of roof ties shall be lined with the ceiling material shown on the Drawings or as scheduled. Ceiling materials shall be nailed to the brander with galvanised clout nails in countersunk holes and stopped with putty where not covered with cover strips. Brander shall be of at least 38 x 38 mm square section and shall be provided at not more than 560 mm centres to suit ceiling panels and with cross brander where required at not more than 1 200 mm centres, cut in flush at joints and side nailed. All joints in the brander shall be scarfed joints. The ceiling panels which shall not exceed the sizes recommended by the manufacturer shall be nailed every 150 mm along the panel edges and at a distance of 10 mm in from the edge. Suitable metal strips covering the joints and returned around cornice lines shall

be provided. Special serrated ceiling nails shall be used in accordance with the manufacturer's recommendations.

Ceilings shall be fitted only after completion, testing, and acceptance of all electric wiring required to be laid in the roof space above, except where ordered to the contrary by the Engineer.

A trapdoor 600 mm x 600 mm covered, framed and supported in accordance with acceptable practice, shall be provided in the ceilings.

Formed cove cornice 75 mm x 75 mm shall be fixed to the ceiling, plugged to walls, and neatly mitred at all corners. Coving shall extend for the full peripheral length of all ceiling to wall junctions.

4.7.2 Patented Ceilings

Where the ceiling shown on the drawings or schedule is of a patented type, the materials supplied and the workmanship of fixing shall be strictly in accordance with the manufacturer's specification.

4.7.3 Thermal Insulation to Ceilings

Thermal insulation materials shall comply with SANS 1381 and be of the required thickness, but not less than 50 mm. The insulation shall fully cover the total ceiling area to be insulated as indicated on the drawings.

4.8 WOODEN DOOR FRAMES

All wooden door frames shall be manufactured from hardwood (meranti or better), rebated, and grooved if required for plaster, and dowelled into the floor with 16 mm diameter x 125 mm long steel dowels. Hardwood quadrant fillets, neatly mitred at angles, are to be fitted around all frames where abutting on concrete, plaster or brickwork. Door frames shall be secured to brickwork and concrete work with an approved type of fastening, spaced at not more than 600 mm centres.

4.9 TIMBER DOORS

4.9.1 Hardwood Exterior Doors

Hardwood exterior doors shall be heavy duty doors, framed, ledged, braced, and battened solid wood doors of meranti or similar approved hardwood manufactured in compliance with SANS 545, for Class 2 (semi-interior) exposure. The timber shall comply with SANS 1099 without any laminations and the finished door shall be 44 mm thick for use with solid timber frames. Door edges shall be of the concealed edge type.

Where steel frames are specified on the drawings or scheduled, the doors shall be 40 mm thick.

Double leaf doors shall be one way opening with rebated meeting stiles.

All exterior doors shall be of standard dimensions except where scheduled to the contrary.

4.9.2 Interior Timber Doors

Interior timber doors shall be medium duty veneered doors in compliance with SANS 545 and suitable for Class 4 (dry interior) exposure. Door edges shall be of the concealed type.

The veneer shall be of the natural finish suitable for varnishing, except where painting of the doors is required by the drawings or Bill of Quantities in which case the veneer shall be suitable for such painting.

All interior doors shall be of standard dimensions and 40 mm thick.

PB4.10 EAVES CLADDING

Eaves shall be constructed and covered as scheduled and/or as shown on the Drawings.

PB4.11 WOOD PRESERVATION

Wall plates, and other timber work to be built into or set against brickwork, shall receive two coats of an approved wood preservative on all faces which will not be exposed to view after installation. The preservation shall comply with the applicable clauses of SANS 10005.

4.10 PAYMENT FOR CARPENTRY, JOINERY, TIMBERWORK, AND CEILINGS

4.10.1 Carpentry and joinery

Carpentry and joinery the work will be paid for in accordance with the units and rates scheduled. The Contractor is to include for all beads, fillets, stops, grounds and all rebating, tenoning, grooving, housing, morticing, framing and planing and all other necessary work to complete the whole of the carpentry and joinery work in the best manner according to details on the drawings and / or Bill of Quantities.

4.10.2 Timber Work

Prices for timber work, where scheduled separately, shall include for all necessary working, cutting, trimmings, application of preservative to built-in portions of the work, etc, and for providing all necessary cleats, spikes, bolts, nails, etc. Measurement of the various members shall be taken as that of each size of timber from which the member can be cut, taken to the nearest length of 150 mm in excess of the actual required length.

Unit m

4.10.3 Roof trusses

Factory made roof trusses shall be paid for by number of each type of building scheduled.

Unit: No

4.10.4 Ceilings

Prices for ceilings shall include the provision of all materials (including waste and fastenings) and for all labour and plant required to complete the ceilings as shown on the drawings.

Payment shall be made by the actual surface area of finished ceiling taking into account whether the ceiling plane is horizontal or sloping.

Unit: m²

Payment for ceiling brandering shall be made by area of ceiling to be attached thereto but only where scheduled separately. Unit: m²

Payment for thermal insulation to ceilings shall be made on the same basis as for the ceiling and for each specified thickness of insulation layer but only where scheduled separately. Unit: m²

Prices for coved cornices shall be per linear metre. Unit: m

4.10.5 Eaves cladding

Payment for eaves cladding shall be made on the same basis as for ceilings (see clause 4.10.4 above). Unit: m²

4.10.6 Wood preservation

Payment for wood preservation shall not be made separately (except when so scheduled) the cost being deemed to be included in the rates tendered for timberwork.

4.10.7 General

All prices tendered for payment under clauses 4.10.1 to 4.10.6 as applicable shall include for the provision of all labour, plant and materials (including waste) required to complete the respective items of work.

5 STEEL DOORS AND WINDOWS, GLAZING AND FIRE PROTECTION EQUIPMENT

5.1 STEEL DOORS AND FRAMES

5.1.1 Pressed Steel Door Frames

Pressed steel door frames shall be of welded one piece construction or of an approved knock-down type for assembly on site, and constructed of mild steel sheet, pressed or rolled to the required shapes.

Frames for walls one brick thick shall have a single rebate profile and the frame material shall be at least 1,6 mm thick.

All other frames, unless otherwise specified, shall be double rebated and manufactured from metal at least 1,2 mm thick.

Frames shall be of widths required to suit the thickness of walls into which they are to be built, and shall be fitted with suitable tie-bars and braces at bottom, and lugs for building in three to each jamb of frames without fanlights, and four to each jamb of frames with fanlights. Where fanlights are shown over doors the frame shall be fitted with transoms of pressed or rolled steel sheet as above rebated for fanlights and for doors if required and shall have a nominal thickness of at least 1,2 mm thick metal. The rebates in frames and transoms for doors and fanlights shall be of width required to suit the thickness of doors and fanlights.

Frames shall have holes as and where required for screws for fixing fanlight openers, keeps of spring catches, etc. Where fanlights are shown to be fixed into frames, the frames shall be holed and tapped in the rebates suitable for screws for fixing the top centres.

Frames for single doors shall be fitted with an approved chromium plated, or stainless steel (unless otherwise specified) adjustable striking plate keep, boxed in at the back of the frame with a sheet metal box welded on, and not less than two rubber buffers.

All welding shall be cleaned off smooth and flush on exposed surfaces and frames shall be cleaned and primed as described for steel windows, before leaving the manufacturer's works.

5.1.2 Steel Doors, Sidelights, and Fanlights

5.1.2.1 General Requirements

Steel doors, sidelights, and fanlights shall, in the case of stock types, comply with the requirements of SANS specification 727, and in the case of purpose made types with the constructional and other requirements of the above specification and the drawings.

All doors, sidelights and fanlights, shall, in addition, comply with the following requirements:

- ii) Suitable weather bars shall be provided to render external doors, etc, perfectly watertight.
- iii) Frames of doors, etc. where fixed to concrete columns, beams, etc, shall be provided with suitable lugs for fixing to plugs in the concrete at same spacing as the standard fixing lugs.
- iv) Doors, sidelights, fanlights and components except where specified to be hot dip galvanised, shall be clean and primed as described for steel windows.
- v) Door, sidelights and fanlights unless otherwise shown shall be of "one piece" construction, but where shown to be in two or more "one piece" units, the units shall be coupled together with standard coupling mullions and/or transoms.
- vi) Bottom openings in doors and sidelights shall be fitted with kicking plates of one thickness of 1,6 mm thick mild steel sheet fixed with metal beads.
- vii) Frames for outward opening doors shall be fitted at bottom with sills of door framing section (stepped sills) and frames for inward opening doors with metal ties, welded to frames, for embedding in thresholds (flush sills).
- viii) After doors, sidelights, and fanlights have been built in and before being glazed, they shall be checked for alignment, adjusted as necessary, and left in a satisfactory state and in good working order.

5.1.2.2 Stock Doors Units

Stock doors, sidelights, and fanlights shall be of the type shown on the drawings, the doors constructed of not less than 33 mm universal steel sections, and sidelights and fanlights of 25 mm sections as described for windows.

Each leaf of a double door and each single door shall be hung on three steel hinges having brass pins. Hinges shall be of the parliament type where frames are set back from wall faces and where doors are shown to fold back against these faces.

Doors shall be fitted with mortice locks having not less than three levers and heavy brass or chromium plated brass bolts. Handles and bolts are to have a polished finish, unless otherwise specified.

Fanlights shall be hung and fitted as described for steel windows.

5.1.2.3 Purpose made Doors Units

Purpose made doors, sidelights and fanlights shall be as described in clause above but constructed to the forms and sizes shown on the drawings. Unless otherwise specified, the doors shall be of not less than 33 mm universal sections and the sidelights and fanlights to standard 25 mm sections.

5.1.3 Payment for Door Units

Door units shall be supplied and installed complete with frame, hinge, locks, and bolts as scheduled or detailed on the Drawings. Each size and type shall be measured separately. Unit: No

5.2 STEEL WINDOWS

5.2.1 Materials

Stock residential and industrial type steel windows shall comply with the requirements of SANS Specification 727, and all other types shall comply with the constructional and other requirements of the above specification wherever applicable.

All windows shall in addition, comply with the following additional and/or amended requirements, viz.:

- i) Suitable weather bars shall be provided to bottom of inward opening and vertically pivot hung ventilators and also to the bottom of all outward opening ventilators where they occur above other ventilators and elsewhere as may be required to render the windows perfectly watertight.
- ii) Frames for windows where fixed to concrete columns, beams, etc, shall be provided with suitable lugs for fixing to plugs in the concrete, or with holes for screwing to plugs in the concrete, all at the same spacing as the standard fixing lugs.
- iii) Windows and components, except where specified to be hot dip galvanised, shall, before leaving the manufacturer's works, be cleaned by acid pickling, rinsing and drying, as laid down in SANS 10064, or by other approved means, to remove all scale, rust, grease, oil and foreign matter, and then primed with red oxide zinc chromate primer. The primer shall be applied by dipping or by means of spray gun.
- iv) Ventilators hung at one side to open outwards for windows above ground floors and not accessible for cleaning from an adjoining opening ventilator in the same window or from verandas, balconies and the like, shall be hung on projecting hinges.
- v) Windows, unless otherwise specified, shall be of one piece construction but where shown to be in two or more "one piece" units, the units shall be coupled together with standard coupling mullions and/or transoms.
- vi) Windows shall be fitted with brass handles, stays, catches and other fittings as later described. Those for windows constructed of universal sections shall have a polished finish whereas all other windows shall have a tumbled finish. The fittings shall be fixed in such a way as to be removable after windows are glazed.
- vii) After the windows have been built in, but before being glazed they shall be checked for alignment adjusted as necessary and left in a satisfactory state and in good working order.

5.2.2 Construction

The various type of windows shall be constructed as follows:

i) Stock Residential Type Windows

Stock residential windows shall be of the types shown on drawings, constructed of standard 25 mm steel sections with metal not less than 3 mm thick.

Side hung ventilators shall be hung on steel hinges having brass pins, and shall each be fitted with a casement fastener and sliding stay.

Top hung ventilators shall be hung on hinges as above, and shall each be fitted with combined fanlight stay and fastener size 200 mm for one pane high ventilator and size 250 mm for two panes with ventilators.

Bottom hung ventilators shall be hung on hinges as above, and shall each be fitted with approved concealed friction side arms and a spring catch and keep.

Pivot hung ventilators shall be hung on friction pivots and shall each be fitted with a spring catch and keep.

Projected out ventilators shall slide on approved spring loaded brass shoes, sliding in the channels of the fixed frame, and shall be balanced on steel arms, pivoted at ends and housed within the vertical frames; ventilators shall each be fitted with an approved casement fastener at the bottom.

ii) Purpose Made Residential Type Windows

Purpose made residential type windows shall be as described in (i) above, but constructed to the forms and sizes shown on the drawings.

iii) Stock Industrial Type Windows

Stock industrial type windows shall be of the types shown on the drawings, constructed with main frames of not less than 33 mm steel sections with metal not less than 3 mm thick, and with ventilators of standard 25 mm sections with metal not less than 3 mm thick.

Pivot hung ventilators shall be hung on friction pivots and shall each be fitted with a spring catch and keep.

Bottom hung ventilators shall be hung on steel hinges having brass pins, and shall each be fitted with approved concealed friction arms and a spring catch and keep.

iv) Purpose Made Industrial Type Windows

Purpose made industrial type windows shall be as described in iii) above, but constructed to the forms and sizes shown on drawings.

5.2.3 Payment for Windows

Window units shall be supplied and installed complete as specified, scheduled and detailed on the Drawings, including for glazing. Payment will be by number for each type and size. Unit: No

The tendered rates shall include for the provision for all materials (including fastenings, hinges, ironmongery, glass etc) except where scheduled separately, and for all labour and plant required to build the windows into the structures.

5.3 IRONMONGERY

All ironmongery shall be of best quality, and shall be approved before fixing with screws or bolts of similar metal. No key shall pass a second lock. All screws, nails, bolts, etc, required for completion of the work, shall be supplied by the Contractor.

Prices for all ironmongery where scheduled separately are to include the provision of all materials, plant and labour necessary for fixing to softwood, hardwood or steel door frames as the case may be including all notches, grooves, sinkings, etc, where required. If not scheduled separately the cost of ironmongery shall be included in the price quoted for the parent body.

At junctions of differing floor finishings provide and build in 25 mm x 3 mm brass strips with top edges flush with the adjoining finishings. The cost of the brass strips shall be included in the floor materials and not paid for separately.

5.4 GLAZING

5.4.1 Glass Material

Glass panes not exceeding 0,65 m² surface area shall be clear float glass of "CG" glazing quality and of 3 mm minimum thickness or as specified.

Glass exceeding 0.65 m² and up to 1,0 m² surface area of glass pane, shall be clear float glass of "CG" glazing quality and of at least 4 mm thickness or as specified.

Safety glass for stainless steel frames over inspection chambers shall be clear, wire reinforced, safety glass.

5.4.2 Fixing of Glass Panes

Glazing to windows shall be well bedded at both back and front with putty and sprigged or otherwise mechanically located in the window frames. All putty shall be carefully trimmed and cleaned off and finished to neat straight lines.

Glazing putting shall be in accordance with SANS 680 suitable for use with metal or wooden window frames as appropriate and shall be of the self-setting type unless shown otherwise on the drawings.

The window frames shall be primed with an appropriate and approved wood or metal primer before glazing is commenced.

5.4.3 Payment for Glazing

Glazing will not be paid for separately (except where otherwise scheduled) as the prices scheduled for windows and glazed doors will be deemed to include all costs associated with the glazing. If scheduled separately, payment will be made by number of each size and type installed. Unit: No

5.5 FIRE PROTECTION EQUIPMENT (SMALL BUILDINGS)

5.5.1 General

Unless otherwise specified, all materials will comply with the relevant SANS specifications relating to Fire Protection.

5.5.2 Fire Hose Reels

Each fire hose reel is to be an approved type complying with SANS 543 and constructed with 580 mm diameter pressed steel side discs, red enamelled with chromium plated centre. Each reel is to be provided with a 25 mm chromium plated gunmetal control valve fixed separately from the reel, a 30 m length of 20 mm rubber and canvas, or reinforced plastic, non-kinkable hose terminating in a 5 mm chromium plated shut-off nozzle and chromium plated swivelling pulley and nozzle bracket.

The Contractor must fix the fire hose reels to walls where indicated on drawings with 10 mm diameter hook or rag bolts, not less than 150 mm long built into walls in 3:1 cement mortar. The centre of each fire hose reel, unless otherwise specified, is to be approximately 1600mm above floor level.

5.5.3 Fire Extinguishers

Fire Extinguishers shall comply with the relevant SANS specification and shall be the 9 kg dry powder chemical type, supplied by an approved reputable company and maintained by that company.

Extinguishers are to be mounted to walls, where indicated on drawings and fixed as per the manufacturer's specifications.

5.5.4 Signage

Escape routes and the locations of fire fighting equipment are to be clearly indicated throughout the building and all signage is to comply with SANS 10400 and its relevant amendments.

5.5.5 Payment for Fire Protection Equipment

Payment shall be by number of each item installed as scheduled.

Unit: No

Prices shall include for the provision of all materials, plant, and labour necessary to complete the required installations.

6 PAINTING (OTHER THAN STRUCTURAL STEELWORK)

6.1 SCOPE

This painting specification covers the normal work required for small to medium size buildings. It does not include for the painting of steelwork (which is the subject to SANS 1200HC), apart from galvanised iron for roof sheeting, gutters, downspouts, etc.

This specification should be adhered to, but as the formulation of paints is subject to continual modification the specification for a particular material may be amended should the paint manufacturer recommend an improvement thereto and provided such amendment is agreed by the Engineer.

A change of specification purely to reduce costs by using less suitable materials will not be accepted, except with the specific approval of the Engineer in special circumstances.

6.2 MATERIALS

6.2.1 General

All materials which are to be used for painting under this contract shall be from the same approved manufacturer (except in special cases which have had prior approval from the Engineer) and shall be supplied in unopened cans. Thinning will be permitted only in conformity with the applicable manufacturers recommendations.

All materials for paintwork shall comply with the requirements of the applicable SANS standard specifications and shall bear the standard SANS mark on the container. Materials for paintwork where no SANS specification has been published, shall be subject to the approval of the Engineer. All materials for paintwork must be brought on site in unopened containers and no imitations will be allowed.

Prime coats shall be as specified by the manufacturer of the paint used in the final coats.

Primers, paints, and distempers shall comply with the standard SANS specifications listed hereafter. The latest edition of the relevant standard shall be applicable.

6.2.2 Primer

- i) For timber: SANS 678 Type I for exterior use and Type III for internal work.
- ii) For steel: SANS 1319, zinc phosphate for application to clean rust-free surfaces.
- iii) For plastered walls: SANS 1586, emulsion paints, acrylic PVA plaster primer.
- iv) Galvanised iron primer: SANS 912.

6.2.3 Under-coats

All surfaces, except emulsion paint: SANS 681 Type I, to be used with quick-drying primers and glossy, mat or eggshell top-coats.

6.2.4 Paint top-coats

- i) Matt and eggshell finishes for interior and exterior use : SANS 515.
- ii) High-gloss enamel paint for interior and exterior use : SANS 630.
- iii) Aluminium paint : SANS 682.
- iv) Roof paints: SANS 683.
- v) Structural steel paint : SANS 684.
- vi) Emulsion paints for interior and exterior use: SANS 1586.

6.2.5 Varnish

- i) Varnish for interior use : SANS 887

6.3 APPLICATION

6.3.1 Surface Preparation

All surfaces to be painted must be thoroughly degreased, clean and dry prior to commencement of painting. The local environs are to be free from dust whilst painting is in progress.

Ironmongery and fittings not to be painted shall either be removed and subsequently replaced or be suitably masked to prevent paint spots or streaks adhering to the surfaces.

All cracks are to be filled with the paint manufacturer's recommended filler suitable for the purpose and for the location (i.e. interior or exterior work). After drying, the filler is to be rubbed down to a smooth surface, flush with the adjacent surfaces.

Porous surfaces must be sealed in accordance with the paint manufacturer's recommendations.

Timber work shall be knotted and stopped as necessary prior to commencing painting.

All surface preparation shall be in accordance with the paint manufacturer's specifications.

6.3.2 Painting Interior Surfaces

6.3.2.1 PVA Emulsion System

i)	Cement plaster Concrete	apply one coat of acrylic filler coat followed by two coats of PVA emulsion paint
ii)	Gypsum plaster Hardwall plaster Gypsum board	apply one coat of alkali resistant primer followed by two coats of PVA emulsion paint
iii)	Hardboard	apply one coat hardboard primer followed by two coats of PVA emulsion paint

6.3.2.2 Gloss Enamel System

i)	Cement plaster Gypsum plaster Hardwall plaster Gypsum board	apply one coat of alkali resistant primer followed by one coat universal undercoat and one coat of gloss enamel
ii)	Hardboard	apply one coat hardboard primer followed by one coat of universal undercoat and one coat of gloss enamel
iii)	Softwood timber	apply one coat of oil based wood primer followed by one coat of universal undercoat and one coat of gloss enamel

6.3.2.3 Stain and Varnish System

- | | | |
|-----|-----------------|---|
| i) | Softwood timber | apply one coat of stain followed by two coats of varnish (matt or gloss as ordered) |
| ii) | Hardwood timber | apply two coats of varnish (matt or gloss as ordered) |

6.3.3 Painting Exterior Surfaces

6.3.3.1 Acrylic PVA System

- | | | |
|-----|----------------------------|--|
| i) | Cement plaster
Concrete | apply one coat of acrylic filler coat followed by two coats of acrylic PVA paint |
| ii) | Asbestos board | apply one coat of undercoat followed by two coats of acrylic PVA paint |

6.3.3.2 Texture Coating System

- | | | |
|----|----------------------------|--|
| i) | Cement plaster
Concrete | apply two coats of texture coating paint |
|----|----------------------------|--|

6.3.3.3 Gloss Enamel System

- | | | |
|----|-----------------------------------|--|
| i) | Cement plaster
Softwood timber | as per cl. 6.3.2.2 i) for interior surfaces
as per cl. 6.3.2.2 iii) for interior surfaces |
|----|-----------------------------------|--|

6.3.3.4 Varnish System

- | | |
|----------|--|
| Hardwood | apply two coats of ultra violet resistant varnish (matt or gloss as ordered) |
|----------|--|

6.3.4 To Roof Areas (Other than Galvanised Iron)

6.3.4.1 Acrylic PVA System

- | | |
|----------------------------|---|
| Cement tiles
Clay tiles | apply one coat of bonding liquid followed by two coats of acrylic emulsion roof paint |
|----------------------------|---|

6.3.5 To Ferrous Metal Surfaces

6.3.5.1 Galvanised Iron Roofs

- apply one coat G.I metal primer followed by one coat micaceous iron ore roof paint

6.3.5.2 Galvanised Iron Tubes etc

apply one coat G.I metal primer followed by one coat universal undercoat and one coat gloss enamel

6.3.5.3 Aluminium Surfaces

apply one coat of aluminium primer followed by one coat of universal undercoat and one coat of gloss enamel.

6.4 MEASUREMENT AND PAYMENT

Measurement and payment for paintwork will generally not be made separately except where so scheduled in the Bill of Quantities. In the latter case, the prices tendered are to cover for the provision of all materials, plant, and labour necessary to prepare the surfaces and complete the work as specified. Payment will be made by lump sum for the entire painting work, or by individual sum for each unit scheduled, or by area.

7 ROOF COVERINGS

7.1 STEEL SHEET ROOF COVERINGS

For steel sheet roof coverings refer to Specification 'SANS 1200HB Cladding and Sheeting'.

7.2 CONCRETE TILE ROOF COVERINGS

7.2.1 General

Concrete roof tiles, which are to be of the interlocking type, may be laid with or without underlying sheeting as required by the drawings. Generally tiles with an underlay may be laid to a flatter pitch (minimum 17,5°) than those without (minimum 26°).

7.2.2 Materials

Concrete roof tiles shall be manufactured in accordance with SANS 542 and be supplied by an approved manufacturer to the type, size, and colour called for by the drawings or Bill of Quantities. Fittings and accessories shown on the drawings or scheduled are to be supplied by the same manufacturer from his standard range, where applicable.

Purpose-made fittings shall be approved by the tile manufacturer for use with his products and shall conform with the requirements shown on the drawings. Such purpose-made fittings shall be ordered by the Contractor sufficiently early to ensure delivery to suit his roof construction programme.

7.2.3 Construction of Concrete Tiled Roofing

7.2.3.1 Safety

The laying of concrete tiles shall be carried out only by workmen authorised by the Contractor and who have had previous experience of such work. No other person, except those authorised for supervision and inspection, shall be permitted either onto the roof area being constructed or onto the floor vertically below that area at any time until such work has been completed.

No unfastened materials shall be left on the roof at any time, to avoid any possible dislodgement by wind or other natural force over which the Contractor has no control.

7.2.3.2 Laying Operations

In addition to complying with the aforesaid safety requirements the laying of concrete tiles, fittings, and accessories shall be carried out fully in accordance with the manufacturer's specifications. A copy of such specifications shall be available on site at all times.

Where underlay sheeting is called for it shall be laid in accordance with the drawings with sufficient overlap at all joins. Care must be taken to avoid cutting or tearing the underlay during subsequent operations and no rubbish or debris shall be left between the top of the sheeting and the underside of the tiles.

Handling concrete tiles, fittings, and accessories shall at all times be such as to cause no damage to the products and such handling shall be to the manufacturer's approval.

Walking on complete sections of the roof shall be permitted only in accordance with the tile manufacturer's recommendations.

7.3 TESTING ROOFS FOR WEATHERTIGHTNESS

After laying operations have been completed the Engineer shall have the right to test the roof for tightness against penetration by rain or other weather condition by any means he considers necessary to simulate natural conditions. Should any part of the roofing be shown to be defective due to faulty workmanship or the use of sub-standard materials, the Contractor shall repair such defective parts at his own cost. The repairs shall be of the extent necessary to satisfy the Engineer that the roof is weathertight.

7.4 PAYMENT FOR ROOF COVERINGS

7.4.1 Roof covering

Payment for roof coverings will be made for the exposed surface area of the finished roof where ancillaries are measured separately. Unit: m²

7.4.2 Ancillaries

Payment for ancillaries such as flashing, ridging, ventilator openings, fascias, barge boards, eaves cladding, etc where scheduled separately, will be paid for by length or number of each item concerned.

Unit: m or No

7.4.3 Roof coverings including ancillaries

Payment for roof coverings where scheduled complete with all ancillaries as shown on the drawings, will be made either by roof surface area or by lump sum (small roofs only).

Unit: m² or Sum

7.4.4 Weather testing

Payment for weather testing of completed roof shall be made if such tests are ordered by the Engineer and the roof is thereby proved to be weathertight. No payment for testing will be made should the roof be found to be defective. Payment where called for by the foregoing shall be made at a lump sum mutually agreed by the Engineer and Contractor.

Unit: Sum

The Tendered rates shall cover for the supply, delivery, storage, and handling of all materials including waste, plant, and labour necessary for the complete construction of the roof covering in accordance with the drawings.

8 PLUMBING WORK

8.1 SCOPE

8.1.1 Pressure Piping

Pressure piping for water supply and distribution covered by this Particular Specification comprises galvanised steel, polypropylene, and copper piping together with the associated fittings, for medium pressure duty and for installation within buildings.

8.1.2 Drainage Piping

Drainage piping for domestic wastewater comprises galvanised steel, cast iron, black polyethylene, and uPVC piping with the associated fittings, for installation within buildings.

8.1.3 Applicable Specifications

Except where otherwise specified or implied the contract work and equipment supplied shall comply with the latest revisions of the standard specifications listed, including generally:

8.1.3.1 Pressure Piping Specifications

SANS 14 Malleable cast iron fittings threaded to ISO 7-1

SANS 62 Steel Pipes and Fittings

SANS 460 Copper Tubes for Domestic Plumbing

SANS 1067 Copper-Based Fittings for Copper Tubes

SANS 15874 Polypropylene Pressure Pipes

8.1.3.2 Drainage Pipe Specifications

SANS 746 Cast Iron Pipes and Fittings for use above Ground

SANS 791 Unplasticized poly(vinyl chloride) (PVC-U) sewer and drain pipes and pipe fittings

SANS 967 uPVC Soil, Waste and Vent Pipes and Fittings

SANS 1321 Non-Metallic Waste Traps

8.1.3.3 Installation Specifications

SANS 791 Appendix C: Notes and Uses of uPVC Pipes

SANS 10112 The installation of polyethylene and poly(vinyl chloride)(PVC-U and PVC-M) pipes

SANS 10252 Part 1 - Water Supply

8.2 MATERIALS

8.2.1 Pressure Pipework

8.2.1.1 Steel Pipes and Fittings

Steel pipes shall comply with SANS 62 Part I and shall be of the nominal bore stated in the Bill of Quantities or shown on the drawings and be of medium class except where scheduled to the contrary. Exact length pipes are not required. The pipe ends shall be screwed (or plain-ended if scheduled) and all piping irrespective of the class scheduled shall be galvanised inside and outside in accordance with SANS 32 for general applications. The screw threads shall not be coated. Each pipe shall be supplied complete with a screw-on socket at one end. A certificate of workmanship as specified under Sub-Clause 3.14 of SANS 62 Part I shall be provided if requested by the Engineer.

Pieces and pipe fittings made from steel pipe shall comply with SANS 62 Part II and shall be of the nominal bore stated in the Bill of Quantities. The class and surface treatment shall correspond to those for the pipes with which they are to be used. Ninety degree bends shall be Type 1 bends, except where Type 2 are specifically called for in the schedule.

Malleable cast iron fittings shall comply with SANS 14 which are suitable for working pressures up to 1 400 kPa in the case of water. The types and sizes of fittings to be provided are as scheduled and all fittings shall be galvanised.

The piping layout shall be as shown on the drawings.

8.2.1.2 Polypropylene Pipes and Fittings

Polypropylene pipes shall comply with SANS 10252 and shall be of the classes and nominal sizes stated in the Bill of Quantities or shown on the drawings. The extrusion polymer (either homo-polymer Type PP or co-polymer Type PPC) shall be the most suitable for pipe runs to be installed within buildings.

Fittings shall be manufacturer's standard fittings to suit the size and classes of pipe with which they are to be used, all as detailed in the Bill of Quantities or shown on the drawings. Special fittings shall be scheduled or detailed on the drawings.

The piping layout shall be as shown on the drawings.

8.2.1.3 Copper Tubes and Fittings

Copper tubes shall comply with SANS 460 and shall be of the nominal outside diameter and of Classes 2 or 3 (as detailed hereunder) or as scheduled or shown on the drawings.

Class 2 (Medium)	For pipework having a maximum working pressure of 2 000 kPa chased into walls and floors.
Class 3 (Heavy)	For pipework having a working pressure over 2 000 kPa up to a maximum of 3 250 kPa, surface mounted internally or externally to buildings.

Tubes shall be supplied in standard lengths of 5,5 m except that Class 2 tubes of 15 mm diameter may be provided in standard annealed copper coils, subject to them not being kinked or deformed in the coils.

Fittings shall comply with SANS 1067 and be the manufacturer's standard fittings to suit the sizes and classes of pipes with which they are to be used. Fittings shall be of the capillary type where a permanent joint is required and the compression type where it may be necessary to occasionally disconnect the joint.

The piping layout shall be as shown on the drawings.

8.2.2 Drainage Pipework

8.2.2.1 Steel Pipes and Fittings

Steel piping shall comply with SANS 62 Part 1 and shall be of the nominal bore stated in the schedules or shown on the drawings and be of light class except where indicated to the contrary. Exact length pipes are not required. The pipe ends shall be screwed and all piping shall be galvanised inside and outside in accordance with SANS 32 for general applications. The screw threads shall not be coated. A screw-on socket shall be provided at one end of each pipe.

Pieces, pipe fittings and malleable cast iron fittings shall comply with Sub-Clause 8 2.1.1 above.

The piping layout shall be as shown on the drawings.

8.2.2.2 Cast Iron Pipes and Fittings

Cast iron pipes and fittings for use above ground shall comply with SANS 746 and shall be supplied without a socket anti-siphon vent and without ears, except where called for to the contrary on the drawings or in the schedule.

Pipes and fittings shall be primed with a bituminous coating and lining.

Alternative primers and/or uncoated and lined pipes shall be provided where specifically called for.
The piping layout shall be as shown on the drawings.

8.2.2.3 uPVC Soil Waste and Vent Pipes and Fittings

uPVC pipes and fittings shall comply with SANS 967 and shall be of the nominal sizes and effective lengths scheduled or shown on the drawings. Plain ends shall not be chamfered and sockets shall be suitable for use with rubber ring seals.

Standard fittings shall be provided as shown on the drawings and shall be of a size to suit the pipes with which they are to be used. Inspection openings and covers shall be provided on all bends 45° and over. Vent horns are not required except where specifically called for.

8.2.3 Sanitary Ware, etc

Sanitary ware, etc shall be of the types indicated on the drawings or scheduled. The quality of items such as washbasins, baths, shower fittings, lavatory cisterns, water closets, hot water geysers, etc shall be consistent with the prime cost price allowed for in the documents or indicated on the drawings.

All stopcocks and valves to be used shall bear the SANS mark and shall be of brass or gunmetal and be suitable for the application in all respects. All other fitments which are the subject to a SANS specification shall comply with such specification and bear the appropriate mark.

8.3 INSTALLATION

8.3.1 General

Installation of plumbing pipework, both pressure and drainage pipes, shall generally be chased into the walls and/or floors of the building and only where specifically called for on the drawings, or elsewhere, shall it be surface mounted. All plumbing work shall be carried out by suitably registered firms and by suitably qualified plumbers.

8.3.2 Installation Work

8.3.2.1 General

The method of carrying out the installation shall be in accordance with the best practice and in the case of water piping in accordance with the relevant sections of SANS 10252; Part 1.

8.3.2.2 Pipework in Chases

Chases in walls and floors shall be wide enough and deep enough to contain the full diameter of the pipework and jointing sockets, etc. No part of any pipe run shall extend into the finishing plaster work. Fastenings shall be adequate to hold pipes firmly in position and all pipework shall be tested for possible leakage prior to being grouted in.

8.3.2.3 Surface Mounted Pipework

Surface mounted pipework shall be adequately and suitably fixed in position in accordance with the best practice and in accordance with the best practice and in accordance with the applicable SANS specifications. The pipework shall be able to withstand, without movement or damage, the normal wear and tear to be expected within the building.

8.3.2.4 Sanitary Ware, etc

All items of sanitary ware shall be firmly fixed to withstand expected normal usage without movement. The items shall be fixed truly plumb and/or horizontal as the case may be. Any article damaged after acceptance from the supplier up to the time of completion of the work shall be replaced by the Contractor at his own expense.

No electrical connections to hot water geysers and the like may be made by the plumber but shall be carried out by a suitably qualified electrician.

8.4 TESTING

All pipework and fittings including stopcocks, valves, taps, etc shall be tested for operation and for watertightness. Any malfunction or leak shall be rectified by the Contractor at his own expense.

8.5 MEASUREMENT AND PAYMENT

Measurement and payment for the provision of all materials, plant and labour necessary to complete the required installation and testing shall be in accordance with the method of scheduling in the Bill of Quantities.

Unit: Sum or: m or: No

b) Specifications for Environmental, Social, Health and Safety Management (ESHS) of the Works

In these ESHS Specifications, General Requirements, the Bidder is required to sign each paragraph in the space provided if he is compliant and committed to implement the requirements. The Bidder thereby declares that he has read the requirements and that he is willing and able to implement them.

In Specific Requirements, the Bidder is required to enter "Yes" in the space provided if he is compliant and committed to implement the requirements. In case the Bidder enters "No" he should explain his reason for doing so.

A. General Requirements for ESHS Management		
<i>[Employer: Please do not delete]</i>		
Topic / Potential Impact	Requirements for Mitigation, Management and Enhancement	Bidder's signature
1. Responsibilities and liabilities	1.1. In conjunction with his obligations defined under the Contract, the Contractor will plan, execute and document construction works pursuant to the present Environment, Social, Health and Safety specifications (ESHS).	
	1.2. The Contractor is liable for all damages to the environment and people caused by the execution of the works or the methods used for execution, unless it is established that the execution or methods were necessary, according to the provisions of the Contract or an Engineer's instruction.	
	<p>1.3. Under the Contract and as introduced by the present ESHS Specifications, the term "Project Area" means:</p> <ul style="list-style-type: none"> a) The land where work will be carried out; or b) The land necessary for the implantation of construction facilities (work camp, workshops, offices, storage areas, concrete production plants) and including special access roads; or c) Quarries for aggregates, rock material and riprap; or d) Borrow areas for sand and other selected material; or e) Stockpiling areas for backfill material or other demolition rubble; or f) Any other location, specifically designated in the Contract as a Project Area. <p>The term "Project Area" encompasses any individual Project Area or all Project Areas.</p> <p>For the sake of clarity, Project Area is a different concept than Site under CC Sub-Clause 1.1.17.</p> <p>Project Area defines an area within which the Contractor is to comply with environmental, social, health and safety obligations defined in the present ESHS Specifications.</p>	

A. General Requirements for ESHS Management		
<i>[Employer: Please do not delete]</i>		
Topic / Potential Impact	Requirements for Mitigation, Management and Enhancement	Bidder's signature
	<p>Site is the places where the Permanent Works are to be executed and to which Plant and Materials are to be delivered, and where right of access to, and possession of, is to be given by the Employer to the Contractor. The Employer is under no similar obligation for any area located outside the Site, even if within the Project Area, where access is at Contractor's risk.</p> <p>In term of physical footprint, the CC Sub-Clause 1.1.17 Site is included in the Project Area. The Project Area is then of greater geographical extent than the Site.</p>	
	<p>1.4. The ESHS Specifications refer to:</p> <ul style="list-style-type: none"> a) Protection of the natural environment (water, air, soil, vegetation, biological diversity) in areas within any Project Area and its surroundings, i.e. including but not limited to access roads, quarries, borrow areas, stockpiling of backfill material, camps or storage areas; b) Health and safety conditions to be maintained for the Contractor's personnel and any other person present on the Project Areas, or along access routes; c) Working practices and the protection of people and populations living near the Project Area but exposed to the general disturbance caused by works. 	
	<p>1.5. Subcontractors</p> <p>The Contractor shall ensure that all Subcontractors and Suppliers (in particular those for major supply items) are familiar with the ESHS requirements and guidelines valid on Site and Project Area.</p>	
	<p>1.6. Applicable regulations</p> <p>The Contractor must comply with all applicable national laws, permits and regulations and the World Bank Group's Environmental and Social Health and Safety Standards in relation to the protection of the environment and people during construction (e.g. management of impacts and disturbances related to water, air, soils,</p>	

A. General Requirements for ESHS Management		
<i>[Employer: Please do not delete]</i>		
Topic / Potential Impact	Requirements for Mitigation, Management and Enhancement	Bidder's signature
	noise, vibration, vegetation, fauna, flora, waste, groundwater, national labour standards, if relevant indigenous populations, standards on occupational exposure, other). For identifying the applicable regulations, the Contractor may seek external support from a specialist.	
	1.7 Notwithstanding the Contractor's obligation under the above clauses, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements.	
3. Management of Non-conformities	3.1 Non-conformities detected during inspections carried out by the Supervisor, shall be addressed through measures adapted to the severity of the situation and which may include deductions from Interim Payments in accordance with GC 11.3.	
4. Resources allocated to ESHS management	<p>4.1 Environment, Social, Health and Safety Officer</p> <p>4.1.1 The Contractor appoints at least one or several Environment, Social, Health and Safety persons in charge, who is/are fully or in part, time in charge of implementing the ESHS requirements. The ESHS person in charge speaks fluently the language of communication of the Contract. The Contractor informs all staff and workers of the name and authority of the ESHS person in charge.</p> <p>4.1.2 The ESHS person in charge holds the power within the Contractor's organization to escalate non-conformities, and in the event of severe ESHS non-conformities and in agreement with the Employer, suspend the works if considered necessary, and allocate all resources, personnel and equipment required to take any corrective action considered necessary.</p>	

A. General Requirements for ESHS Management		
<i>[Employer: Please do not delete]</i>		
Topic / Potential Impact	Requirements for Mitigation, Management and Enhancement	Bidder's signature
	<p>4.2 Personnel in charge of relations with stakeholders</p> <p>4.2.1 If applicable, the Contractor nominates a Stakeholders Relations Officer (or Community Liaison Officer if appropriate) who is responsible for relations and engagement with local communities, administrative authorities, and other stakeholders and representatives of economic activities. For contracts with a low level of ESHS risks and impacts, this could also be the Contractors site staff. The Community Liaison Officer must speak the language of the local population in the Project Area. The Stakeholder Relation Officer speaks fluently the language of the local population.</p> <p>4.2.2 The Stakeholders Relations Officer will be located onsite or within reasonable travelling time from the Project Area.</p> <p>4.2.3 Local authorities will be informed of the existence of this person as of the start of works and will be provided with telephone contact details so as to be able to contact this person if a problem arises during the execution of works, or concerning the behaviour of the Contractor's Personnel, inside or outside the Project Area or any other public disturbances caused by the works.</p>	
	4.3 Both the ESHS and Stakeholder Relations Officer [Community Liaison Officer] will be equipped with the necessary resources to operate independently and get to all location of the Project Area without delay.	
5. Inspections	5.1 The Employer will regularly inspect the Project Area and Project sites for adherence to the contract conditions including the ESHS requirements. State environmental authorities may carry out similar inspection duties. The Contractor shall comply with directives from such inspectors to implement the required measures.	

A. General Requirements for ESHS Management		
<i>[Employer: Please do not delete]</i>		
Topic / Potential Impact	Requirements for Mitigation, Management and Enhancement	Bidder's signature
6. Reporting	6.1 The Contractor prepares regular ESHS progress reports as part of the contractually agreed reporting requirements to the Employer. This will include reporting of accidents and incidents in line with Paragraph 24.	
7. Code of Conduct	<p>7.1. The Contractor establishes a Code of Conduct and displays it clearly within the Project Area. The Contractor will regularly make personnel and workers aware of the Code of Conduct and the associated provisions.</p> <p>The Code of Conduct addresses the following issues:</p> <ol style="list-style-type: none"> 1. Compliance with applicable laws, rules, and regulations 2. Compliance with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the Employer's personnel and the Contractor's personnel, including sub-contractors and day workers (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment) 3. The use of illegal substances 4. Non-Discrimination in dealing with the local community (including vulnerable and disadvantaged groups), the Employer's personnel and the Contractor's personnel, including sub-contractors and day workers (for example on the basis of family status, ethnicity, race, gender, religion, language, marital status, age, disability (physical and mental), sexual orientation, gender identity, political conviction or social, civic, or health status) 5. Interactions with the local community(ies), members of the local community(ies), and any affected person(s) (for example to convey an 	

A. General Requirements for ESHS Management		
<i>[Employer: Please do not delete]</i>		
Topic / Potential Impact	Requirements for Mitigation, Management and Enhancement	Bidder's signature
	<p>attitude of respect, including to their culture and traditions)</p> <p>6. Sexual harassment</p> <p>7. Violence including sexual and/or gender-based violence</p> <p>8. Exploitation including sexual exploitation and abuse</p> <p>9. Protection of children (including prohibitions against sexual activity or abuse, or otherwise unacceptable behavior towards children, limiting interactions with children, and ensuring their safety in the Project Area).</p> <p>10. Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer and not open areas)</p> <p>11. Avoidance of conflicts of interest</p> <p>12. Respecting reasonable work instructions (including regarding environmental and social norms)</p> <p>13. Protection and proper use of property (for example, to prohibit theft, carelessness or waste)</p> <p>14. Duty to report violations of this Code</p> <p>15. Non-retaliation against workers who report violations of the Code, if that report is made in good faith.</p>	
8. ESHS training	The Contractor provides ESHS inductions and trainings to the workforce, in particular regarding Health and Safety risks and mitigation measures tailored to the project scope. The Contractor makes personnel aware about the importance to protect species, habitats, fauna and flora and the safety and rights of neighbouring communities.	
9. Standards	The Contractor complies with all applicable national norms, standards and discharge, emission etc. limit values defined in the national regulations.	

B. Specific Requirements for ESHS Management

B 1 Protection of the Environment and People

Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Comp- liance Yes/No	Please explain in case of No
10. Protection of adjacent areas	10.1 Establish means of protection to avoid or minimise adverse effects on vegetation, soils, groundwater and surface water, biodiversity, natural drainage and the water quality within the works area. Use construction methods to minimise impacts to the extent possible.		
	10.2 Restrict excavation activities during periods of intense rainfall. Use temporary bunding to reduce the risk of sediment, oil or chemical spills to the receiving waters.		
	10.3. Carry out excavation works in cut off ditches to prevent water from entering excavations.		
	10.4 Bring work site boundaries and limits in accordance with plans agreed upon in advance. All construction activities should be carried out within boundaries.		
	10.5 Stay out of surrounding wetland areas.		
	10.6 Keep distances in compliance with national regulations and as appropriate: a) from any permanent water course and outside of floodable areas; b) from sensitive urban services and buildings (health centre, school, water supply for populations); c) from any housing; cultural sites, archaeological areas, sensitive wetlands, forest reserves or any other valued ecosystem component, or on high or steep ground or in areas of high scenic value. d) Where it is not possible to keep distances, permission shall be obtained from the appropriate authorities.		
	10.7 Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, and collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.		

B 1 Protection of the Environment and People			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
	10.8 After construction, form reshaped land so that it is inherently stable, adequately drained and suitable for the desired long-term land use and allows natural regeneration of vegetation.		
	10.9 Minimize long-term visual impacts.		
11. Selection of borrow areas, backfill material stockpile sites and access road	11.1 Prevent and minimize the impacts of borrow areas or areas to be excavated, backfill material stockpile locations and access roads, quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands; local communities and their settlements. After termination of the works, in as much as possible restore/rehabilitate all sites to acceptable standards.		
	11.2 Locate stockpile areas in areas where trees can act as buffers to prevent dust pollution. Build perimeter drains around stockpile areas. Locate sediment and other pollutant traps at drainage exits.		
	11.3 Obtain appropriate licenses/permits from relevant authorities, including traditional authorities if appropriate, to operate quarries or borrow areas.		
	11.4 Deposit any excess material in areas approved by local authorities.		
	11.5 Take measures to avoid that stagnant water in uncovered borrow pits creates breeding grounds for mosquitoes.		
	11.6 If disposal sites for clean spoil are necessary, locate them in areas approved by the Employer, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, place spoil materials in low-lying areas, compact and plant with species indigenous to the locality.		
12. Pollution prevention	12.1 For all works minimize pollution risk (e.g. liquid effluents; air emissions; noise and vibration management; vehicle and equipment maintenance and selection; fuel, oil and chemical storage and handling).		

B 1 Protection of the Environment and People			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
	12.2 Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.		
	12.3 Use in as much as possible, local materials to avoid importation of foreign material and long-distance transportation.		
13. Effluents	13.1 Contain and store construction wastewater appropriately, including sanitary water. Do not discharge untreated effluents.		
14. Emissions and dust	14.1 Comply with national requirements for emissions.		
	14.2 Minimise the effect of dust on the surrounding environment resulting from earth mixing sites, asphalt mixing sites, dispersing coal ashes, vibrating equipment, temporary access roads, etc. to ensure safety, health and the protection of workers and communities living in the vicinity of dust producing activities. Use best practice to ensure minimisation of dust emissions (e.g. proper stockpiling, watering etc.) during dry and windy conditions and transportation.		
	14.3 Use vehicles in appropriate technical conditions and provide emissions control equipment where applicable (e.g. filters).		
	14.4 Switch off vehicles when not in use.		
	14.5 Keep speed limits on site.		
	14.6 Sensitise drivers with regards to all measures with regards to avoiding dust and emissions and safe driving.		
15. Noise and vibration	15.1 Avoid operations and vehicle movements at night. Sensitise drivers.		
	15.2 Set traffic speed limits. Sensitise drivers.		
	15.3 Locate stationary equipment (such as power generators) as far as possible from nearby receptors (e.g. worker resting areas, populated areas and environmentally sensitive areas).		

B 1 Protection of the Environment and People			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
	15.4 Keep noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation, blasting) at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.		
16. Waste	16.1 If not otherwise instructed by the Employer, identify waste management facilities and waste management contractors. Ensure disposal through waste contractors, licensed for treatment/removal/recycling of each of the waste types, if existent.		
	16.2 Properly collect all wastes produced including containers, litter and any other waste generated during the construction and dispose and segregate at designated disposal sites in line with applicable government waste management regulations.		
	16.3 Minimise the waste production to the extent possible.		
	16.4 Check that areas for depositing hazardous materials such as contaminated liquid and solid materials are approved by the Employer and appropriate local and/or national authorities before the commencement of work. Use existing, approved sites over the establishment of new sites.		
	16.5 Bund all vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals in order to contain spillage.		
	16.6 Remove construction waste left in stockpiles along the road, and reuse or dispose of on a daily basis.		
17. Vegetation clearing	17.1 Limit vegetation clearing to areas within the site boundary where it is strictly necessary.		
	17.2 Avoid clearing mature trees and endangered species.		
	17.3 Do not clear vegetation more than two months in advance of operations.		

B 1 Protection of the Environment and People			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
18. Biodiversity management	18.1 Avoid to the extent possible areas of ecological value.		
	18.2 Avoid disturbances on flora and fauna and natural habitats.		
	18.3 Avoid forest fires.		
19. Erosion and sediment transport	19.1 If construction takes place on inclined surfaces/slopes, take appropriate erosion control measures (e.g. retain trees and other vegetation, use of natural contours for roads and drainage networks, excavated drainage channels).		
	19.2 Appropriately store removed topsoil. After construction, use topsoil as backfill for restoration of the area.		
	19.3 Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2 m high are recommended.		
	19.4 Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.		
	19.5 Re-vegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.		
20. Site rehabilitation	20.1 To the extent practicable, reinstate construction working areas and natural drainage patterns where they have been altered or impaired after construction activities are completed. Rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction. Revegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. If appropriate, for larger revegetation areas consult experts.		
	20.2 Avoid that rehabilitated areas pose health and safety risks (such as holes, ponds).		

B 1 Protection of the Environment and People			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
	20.3 Rehabilitate borrow areas, backfill material stockpile sites and access roads, where applicable.		
	20.4 Re-establish existing water flow regimes in rivers, streams and other natural or irrigation channels where they have been disrupted due to works being carried out.		

B 2 Health and Safety			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
22. Health and safety plan	<p>22.1 Develop an Occupational Health and Safety (OHS) Plan, appropriate to the ESHS impacts and risks level of the works to be carried out. Set a minimum of OHS Standards for each task. Implement prevention, protection and monitoring measures as described in the OHS Plan.</p> <p>The OHS Plan shall include at least:</p> <ul style="list-style-type: none"> • Provisions to guarantee a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the work areas, including physical, chemical, biological, and radiological hazards; • Provisions of preventive and protective measures, including management and safety of hazardous materials; • Training of workers; • Documentation and reporting of occupational accidents, diseases, and incidents; • Emergency preparedness and response arrangements; • Provisions for appropriate securing of the sites and work-places (e.g. fencing, signage); • If appropriate: Appointment of site security personnel; • Road safety measures; • First aid and medical assistance; 		

B 2 Health and Safety			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
	<ul style="list-style-type: none"> ESHS measure at community level to avoid community exposure to health issues (see also Paragraph 47). 		
23. Occupa- tional Health and Safety (OHS) Reporting	23.1 Document in a structured and transparent system, (e.g. a Site Accident record sheet) all accidents, dangerous occurrences and investigations.		
	23.2 Produce an OHS report documenting OHS performance and progress (e.g. statistics: month, number of workers, number of health and safety staff on site, number/type of OHS trainings); number of near misses, first aid cases, incidents with more than three days of absence, fatalities; summary of all accidents resulting in more than three days of absence (accident details to be enclosed in the Annex); third party incidents (e.g. community members, road traffic etc.).		
24. Accident reporting procedure	24.1 Record all health and safety related incidents (e.g. observations, accidents, witness statements) on site and follow up immediately and properly. A reportable incident includes any accident to any person on site requiring medical attention or resulting in the loss of working hours or that resulted, or could have resulted in injury, damage or a danger to the works, persons, property or the environment. If applicable, the Contractor will also notify and report of incidents of subcontractors and suppliers (in particular those for major supply items).		
	24.2 Inform the Employer immediately of any accident involving serious bodily injury to a member of personnel, a visitor or any other third party, caused by the execution of the works or the behaviour of the personnel of the Contractor.		
	24.3 Inform the Employer as soon as possible of any near-accident (or near misses) relating to the execution of the works, which, in slightly different conditions, could have led to bodily injury to people, or damage to private property or the environment.		

B 2 Health and Safety			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
28. Personal protective equipment	28.1 Make sure that all workers wear Personal Protective Equipment (PPE) (hardhats, masks, safety glasses, safety boots etc. depending on project type).		
31. Emergency scenarios prevention	31.1 Provide necessary prevention equipment on site in line with applicable regulations to respond to emergency scenarios, e.g. fire, explosion, floods, natural hazards, etc.		
	31.2 Immediately clean any spills and remediate contaminated areas.		
	31.3 Maintain high standard in housekeeping on site to avoid emergencies. Properly store construction materials and light equipment.		
	31.4 Train the workers to handle emergency situations.		
33. First-aid	33.1 Keep minimum first aid equipment and provisions on site (e.g. suitably stocked first-aid kits; a person, respectively an adequate number of trained first-aid helpers, inform staff and workers about first-aid arrangements).		
37. Access to health care and training	37.1 Organize for the workforce access to medical treatment within or in the vicinity of the Project Area.		
	37.2 Make contingency arrangements for transporting injured persons to a hospital as quickly as possible.		
40. Hygiene, accommodation and food	40.1 Provide clean and functional hygienic and sanitary facilities and, if applicable accommodation and food, at the site, including shaded welfare areas, bathrooms, toilets, changing rooms and potable water. Ensure toilets and changing rooms are separated between male and female employees.		
	40.2 Organize for the workforce adequate accommodation if applicable, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, fire and disease-carrying animals, adequate sanitary and washing facilities, adequate lighting, and basic medical services, in accordance with all applicable health and safety regulations and norms.		

B 3 Local labour and relations with local communities			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
42. Labour conditions	42.1 The Contractor complies with labour standards as both per national laws and ILO Fundamental Conventions (e.g. prohibit child labour under minimum age; forced labour; sexual assault; discrimination; ensure non-discrimination and equal opportunities of workers; provide information to workers that is clear and understandable regarding their terms and conditions of employment; respect their rights related to hours of work, wages, overtime, benefits at the beginning of the work; ensure payment on a regular basis etc.). Grant the same rights to contracted workers, community workers and primary supply workers.		
	42.2 Develop and implement labour management procedures which set out the way workers will be managed in accordance with the standards mentioned above in Paragraph 42.		
	42.3 Establish a simple but functional complaints mechanism that all workers have access to (e.g. letter boxes which are emptied regularly) and are aware of so that they can raise workplace relevant complaints anonymously (e.g. about unfair treatment, unsafe driving).		
43. Local recruitment	43.1 Prioritise local employment and staff from local communities for the supply of goods and services to the works and local workforce, where appropriate.		
	43.2 Provide additional specialised training to local workforce in skills required by contractor (i.e. administrator, driving etc.).		
44. Transport	44.1 Organise carpools/buses for worker transportation where needed.		

B 3 Local labour and relations with local communities			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Com- pliance Yes/No	Please explain in case of No
45. Workers accommo- dation	45.1 If workers campsites need to be installed, ensure that accommodations provide separate toilets and locker rooms for women and men; hygiene and electrical/fire safety standards are maintained; workers have access to an adequate and convenient supply of free potable water; there are no triple deck bunks; mattresses and linens are provided.		
46. Meals	46.1 If applicable, provide for at least two meals per shift to local personnel pursuant to proper hygiene conditions. If no canteen is available, pay workers at least for a minimum of 2 meals per day per shift.		
47. Community interaction and safety	47.1 Engage, communicate with and inform communities and local authorities about the works. Obtain local knowledge regarding chance finds and land acquisition matters.		
	47.2 Initiate an efficient grievance mechanism and timely grievance redress to allow potentially affected individuals to raise their concerns regarding damages and disturbances caused by the Contractor or sub-contractors.		
	47.3 Undertake all measures necessary to avoid conflicts with local communities regarding water demands.		
	47.4 Abstract both surface and underground water only after consultation with the local communities and after obtaining a permit from the relevant water authority.		
	47.5 In order to avoid accidents in particular related to the creation of water reservoirs/ ponds or construction site dumps, excavation areas: <ul style="list-style-type: none"> • Take necessary precaution measures to protect children/residents/workers from falling into ponds, excavation areas, etc. • Restrict access to these areas; install climbing ladders in ponds; install signs and rescue ropes and lifebuoys. • Prepare for emergencies and response arrangements. • Sensitise the population including local primary schools 		

B 3 Local labour and relations with local communities			
Topic/ Potential Impact	Requirements for Mitigation, Management and Enhancement	Compliance Yes/No	Please explain in case of No
48. Damage to people and property	48.1 Train workers and drivers to respect the safety and rights of neighbouring people, communities and their properties to avoid disturbances. Supervise that they respect communities' houses, cultures, animals, properties, customs and practices.		
	48.2 Appropriately fence, protect, light and sign-post site areas. Use hazard notices/signs/barriers to protect children and other vulnerable people from harm and prevent access to the sites to non-workers.		
49. Land acquisition and land take	49.1 Check if permissions for building or storing/stocking material have been obtained, including if relevant from local authorities or private landholders. Obtain confirmation that in case of necessary resettlements, people have been compensated and if applicable, have been resettled.		
50. Traffic management	50.1 Establish signage and create public awareness of increased traffic and of potential hazards caused by construction equipment near the Project Area and laydown areas.		
	50.2 Reduce accidents, by minimizing vehicle movements; train drivers for driving and security and check that they have the appropriate permits for driving vehicles.		
51. Fossils/ Archaeological Chance Finds	51.1 If applicable, establish specific procedures to manage the protection of archaeological and historical sites, chance finds and fossils.		
	51.2 Report all finds of cultural heritage (e.g. graves, old ceramic, old building fragments) immediately to the relevant authority and avoid construction in the vicinity of a chance find, fence the chance find and await instructions from the competent authority.		

2. Drawings



Seeds for Resilience Project

**Tender for the Procurement, Installation and Construction Works for the Rehabilitation of
the National Seedbank**

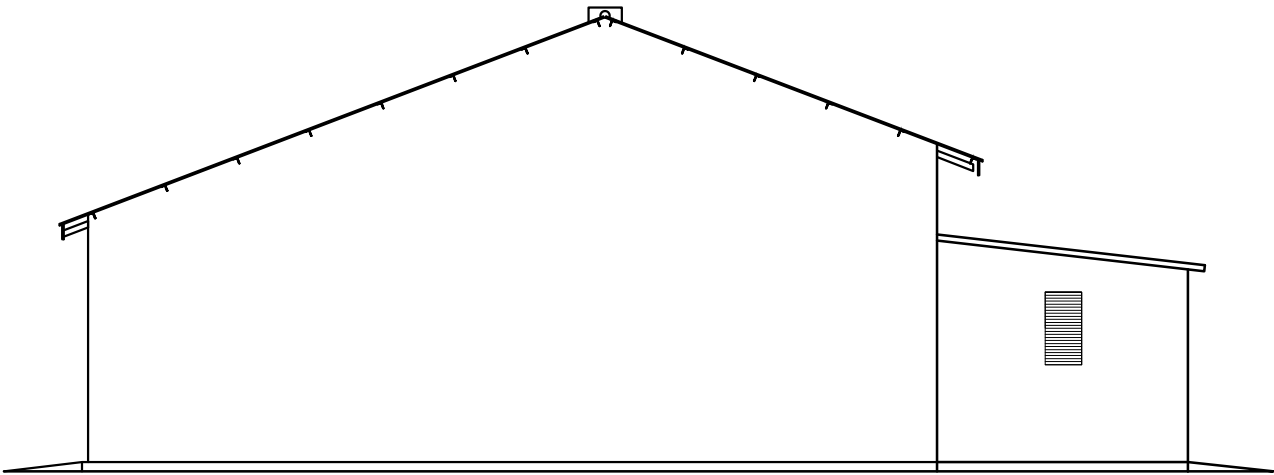
LOT 1 - ZAMBIA

DRAWINGS

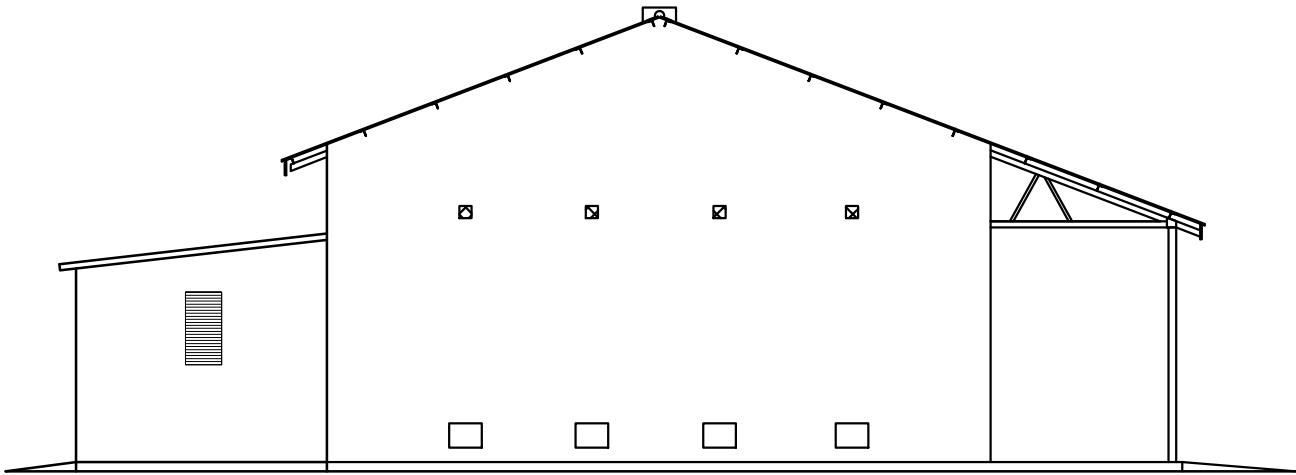
March 2025

Drawing Numbers	Drawing Title	Sheet	Paper Size	Revision Number
SFR-ZM-P-01	Proposed Seed Bank Site Layout	1 of 1	A3	00
SFR-ZM-C-01	Walkway Floor, Foundation and Roof Plan	1 of 2	A3	00
SFR-ZM-C-01	Walkway Sections, Details and Spoon Drain Details	2 of 2	A3	00
SFR-ZM-C-02	Equipment Room	1 of 1	A3	00
SFR-ZM-C-02	Equipment Room Plan & Details	1 of 2	A3	00
SFR-ZM-E-01	Proposed Electrical Diagram	1 of 1	A3	00
SFR-ZM-E-01	Proposed Electrical Diagram (Distribution Boards)	1 of 2	A3	00
SFR-ZM-EM-01	Chamber Dimensions, Equipment, Ducts and Refrigeration Pipes	1 of 3	A3	00
SFR-ZM-EM-02	Chamber Construction Details	2 of 3	A3	00
SFR-ZM-EM-03	Electrical and Control Diagrams	3 of 3	A3	00

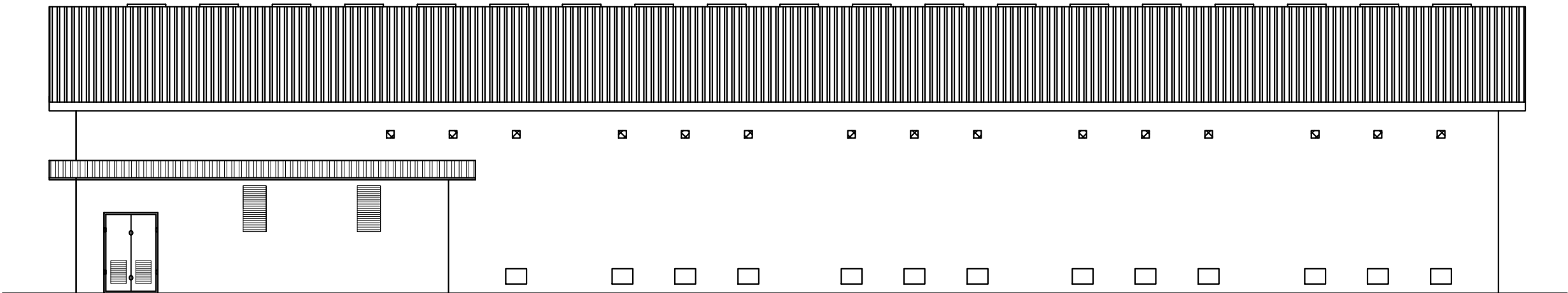
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(Layout: Sheet 1 (2)) - Munasanga, Brands



ELEVATION D
SCALE 1:125



ELEVATION C
SCALE 1:125



ELEVATION B
SCALE 1:125

DRAWING REFERENCE		
No	Drg No	Title


NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
OTHERWISE STATED


2. REINFORCEMENT COVER 30MM

00	Original GOPA Drawing	Sept 2024
Rev	Description	Date

REVISIONS



Designed: B.M.M	Drawn: M.C
Approved: S.D	Sheet No: 2 OF 2
Scale: AS SHOWN	Date: SEP, 2024



Hindenburgergring 18
61348 Bad Homburg
Germany
T: +49 (0)6172 68 17-0
F: +49 (0)6172 930 100
Email: info@gopa-infra.de

176A Kasangula Road
P.O. Box 32817
Lusaka, Zambia
T: (+260 211) 290-709
F: (+260 211) 290-860
Email: Infra-Lusaka@gopa-infra.de

Project

ZAMBIA
SEEDS FOR RESILIENCE
GENEBANK INFRASTRUCTURE
WORKS

Title

EQUIPMENT ROOM
PLANS & DETAILS

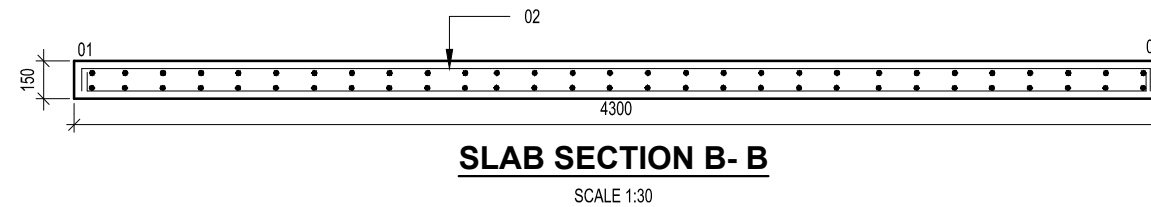
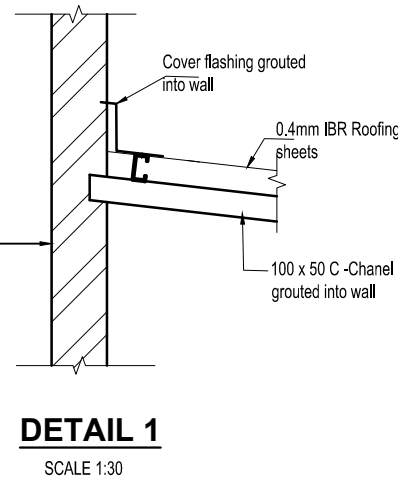
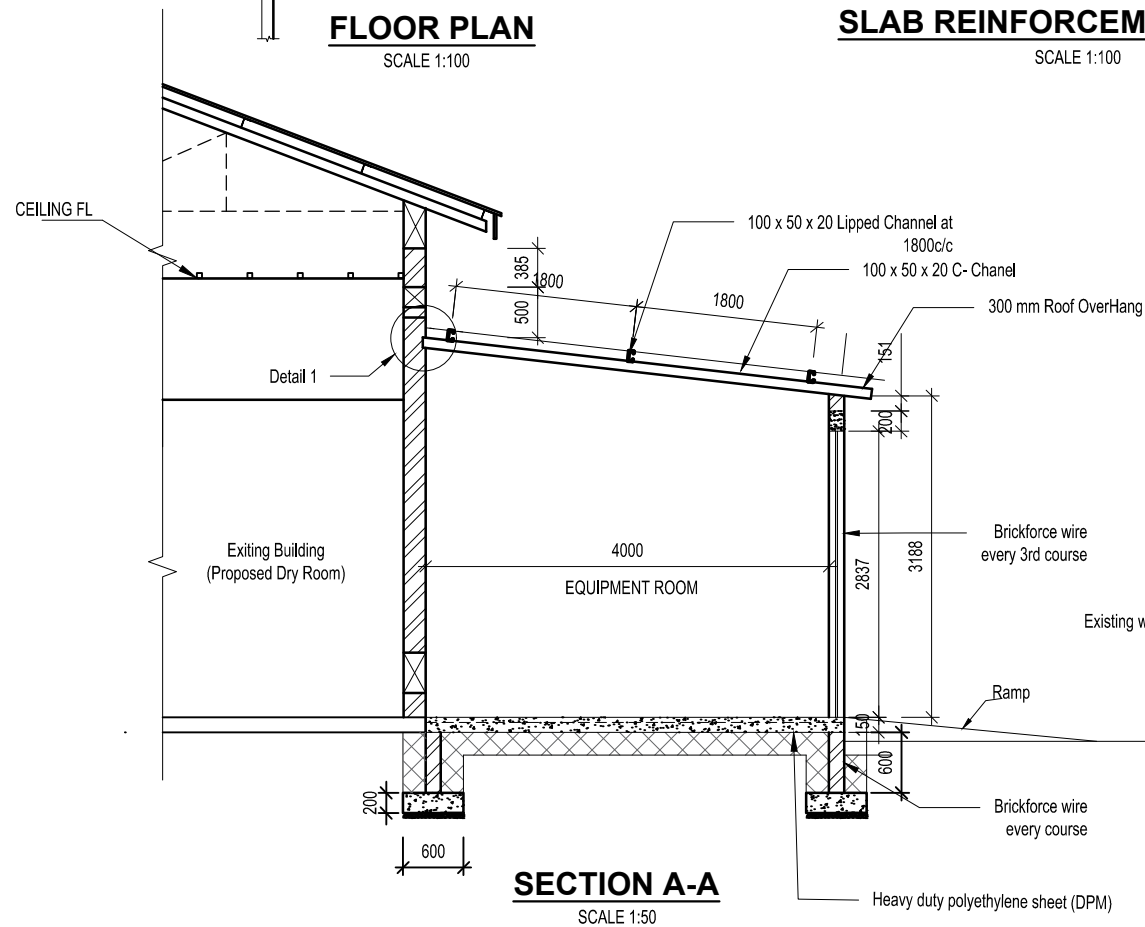
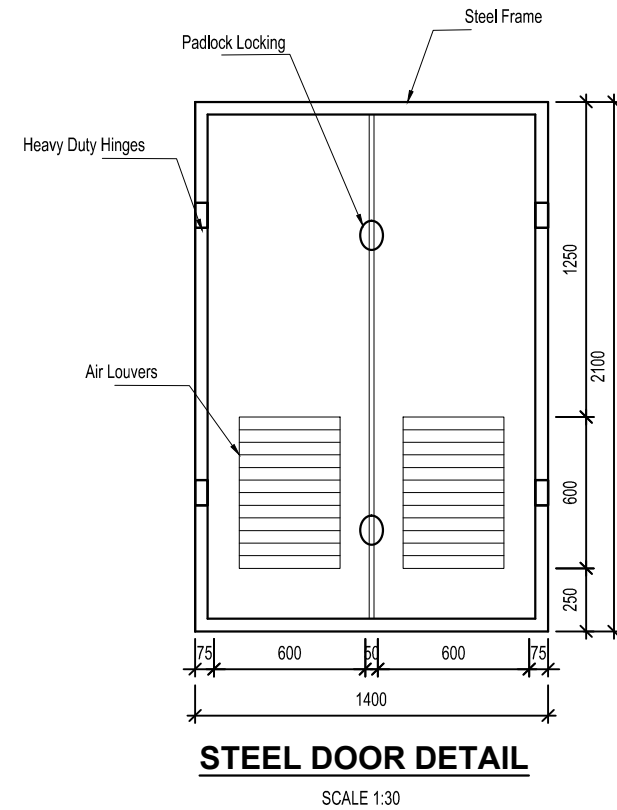
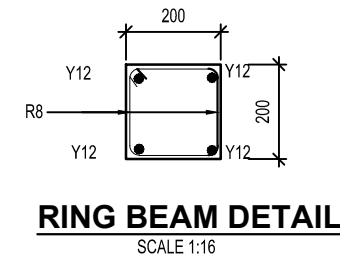
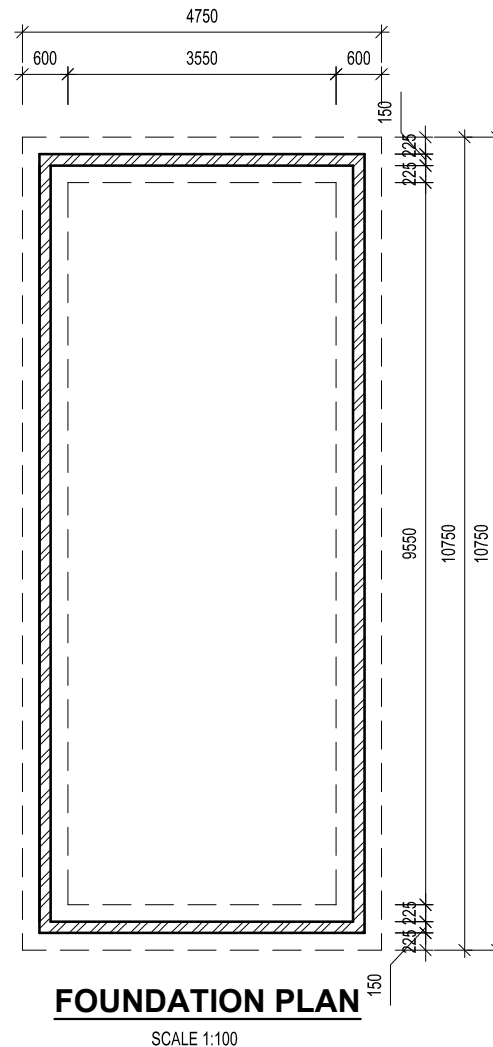
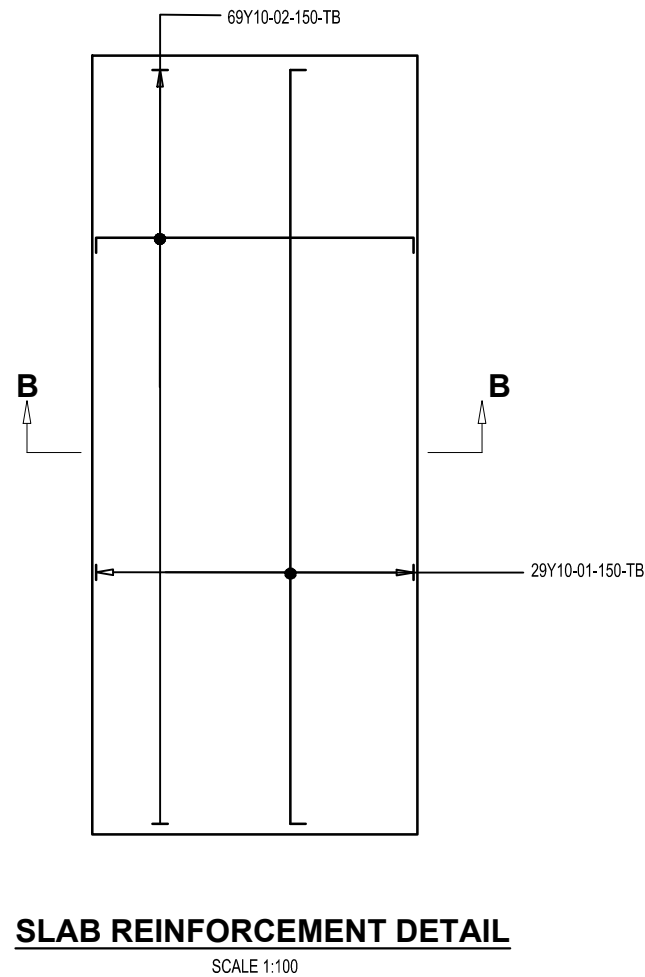
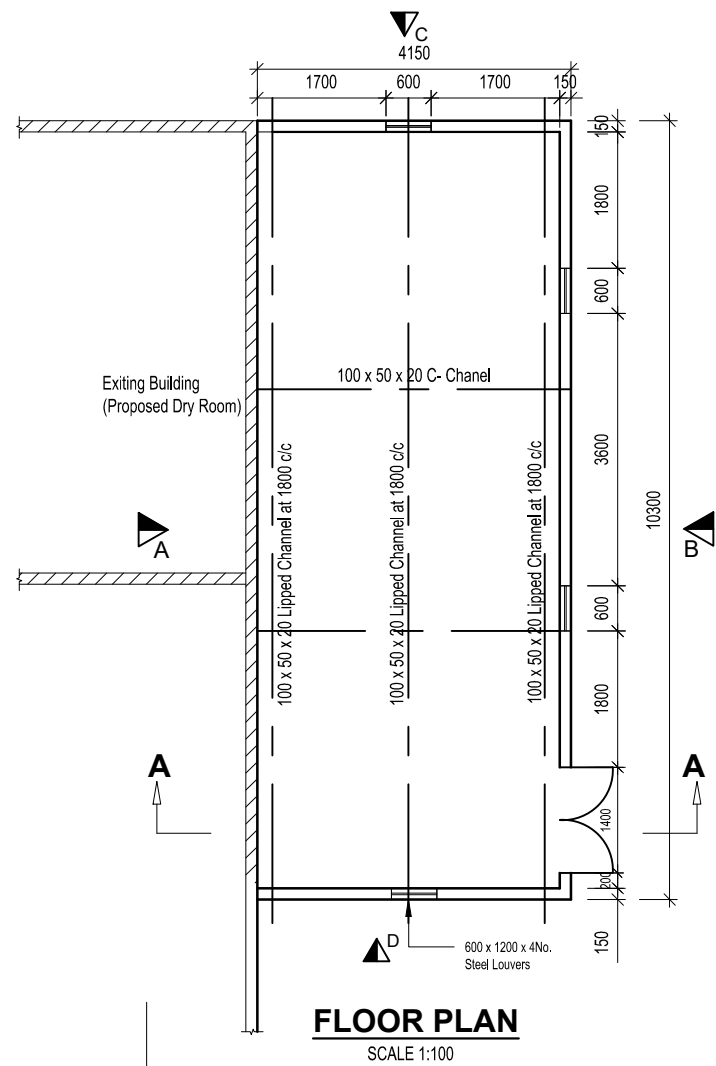
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SFR-ZM-C-02

Rev No

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(Layout: Sheet 1) - hmanasangu, Brandon



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	02	Y10	1	138	69	10420	35	10240			

BAR BENDING SCHEDULE SCALE 1:100

DRAWING REFERENCE		
No	Drg No	Title

NOTES		
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2. REINFORCEMENT COVER 30MM		

REVISIONS		
00	Original GOPA Drawing	Sept 2024
Rev	Description	Date

CROP TRUST

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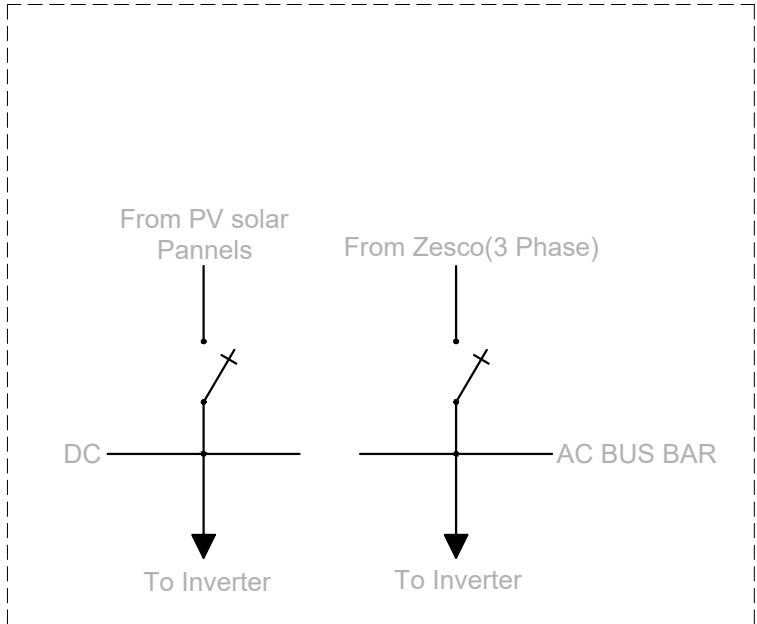
GOPAInfra

Hindenburg 18
61348 Bad Homburg
Germany
T: +49 (0)6172 88 17-0
F: +49 (0)6172 930 100
Email: info@gopa-infra.de

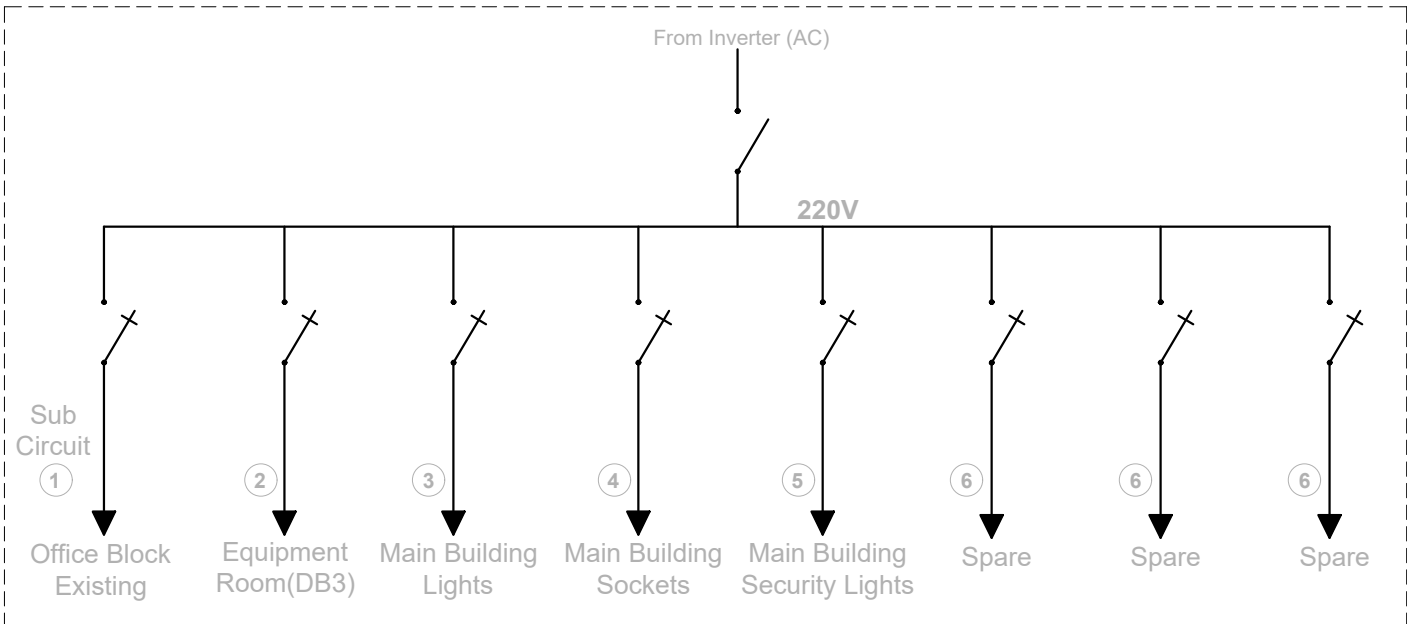
176A Kasangula Road
P.O. Box 32817
Lusaka, Zambia
T: (+260 211) 290-709
F: (+260 211) 290-860
Email: Infra-Lusaka@gopa-infra.de

Project	
ZAMBIA SEEDS FOR RESILIENCE GENEBANK INFRASTRUCTURE WORKS	
Title	
EQUIPMENT ROOM ELEVATIONS	
Drawing No	SFR-ZM-C-02
Rev No	00

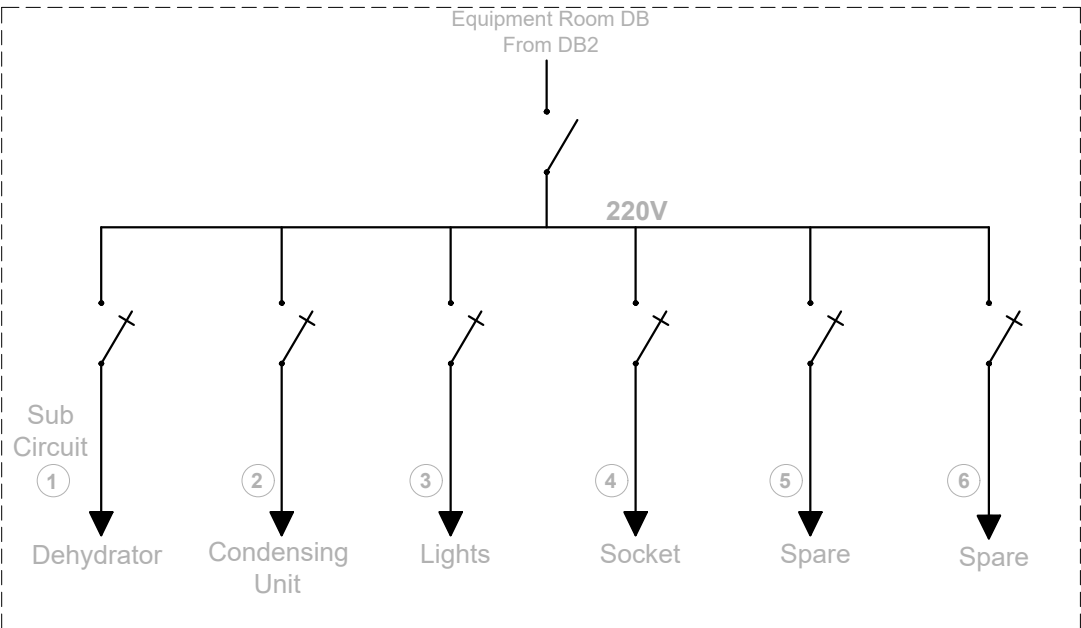
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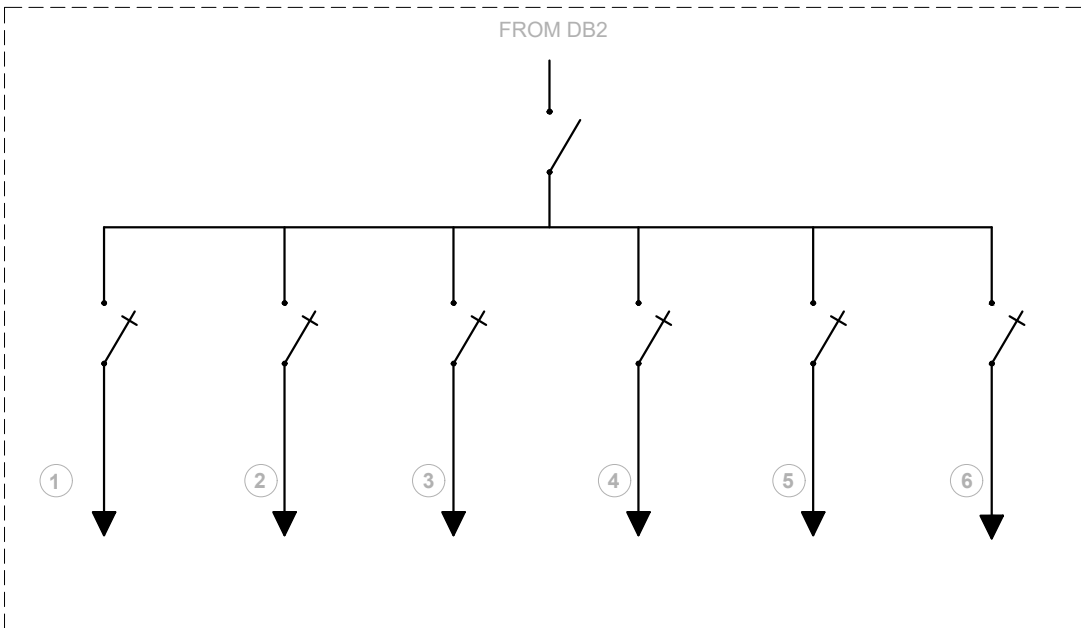
DB1



DB2



DB3



EXISTING DB

DRAWING REFERENCE		
No	Drg No	Title

NOTES		

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Rev.	Description	Date

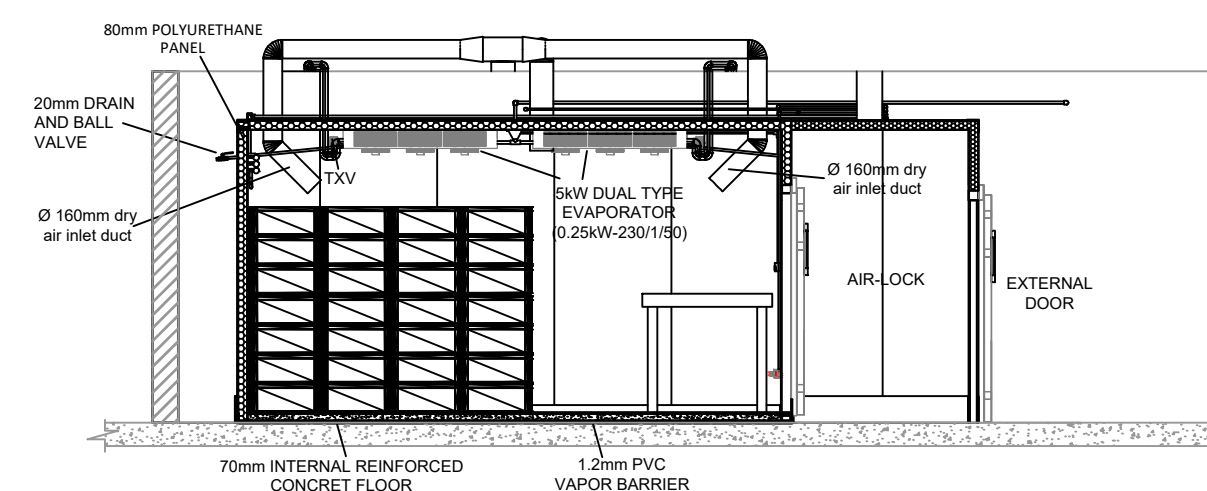
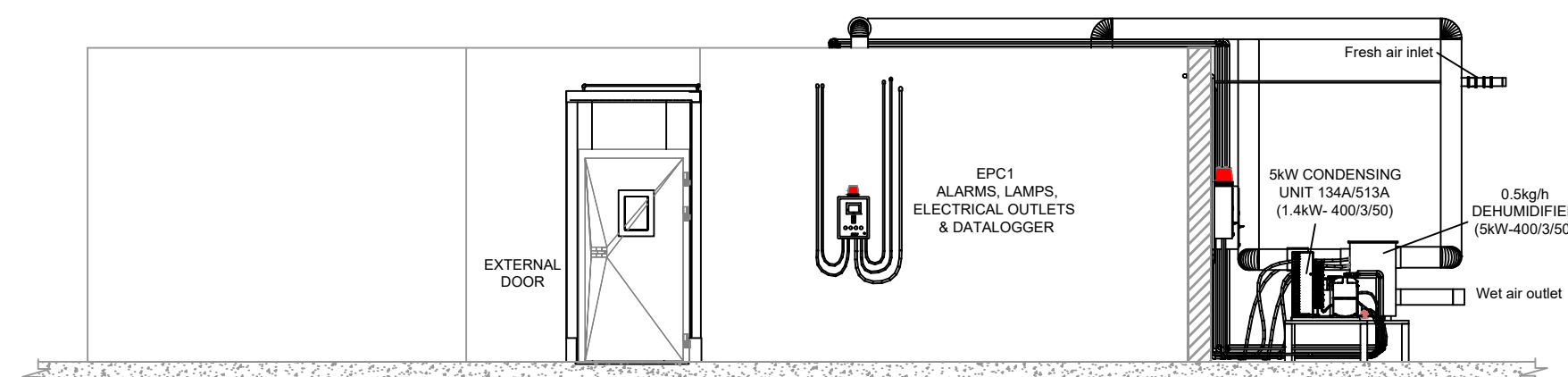
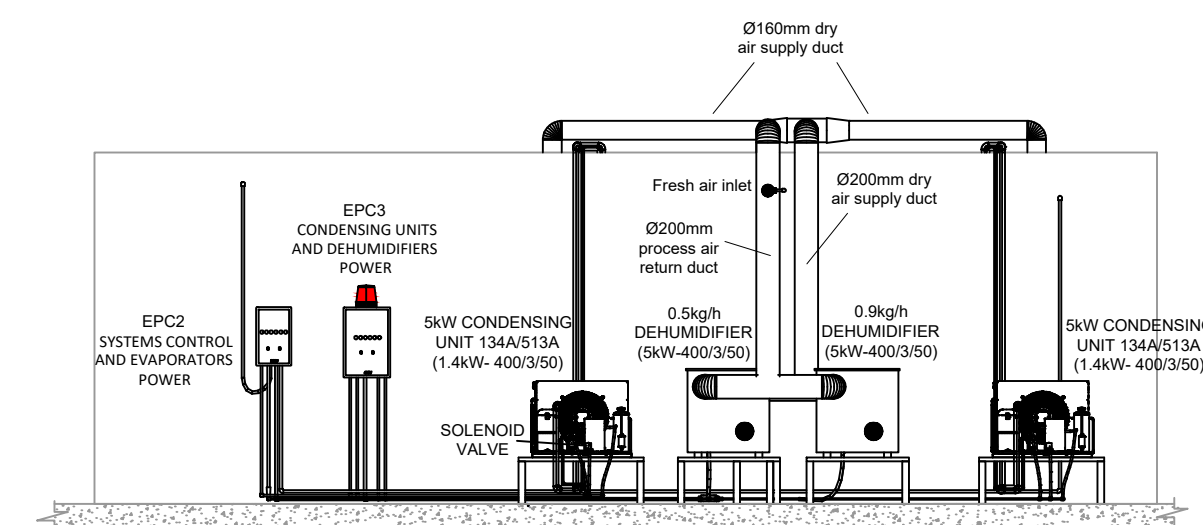
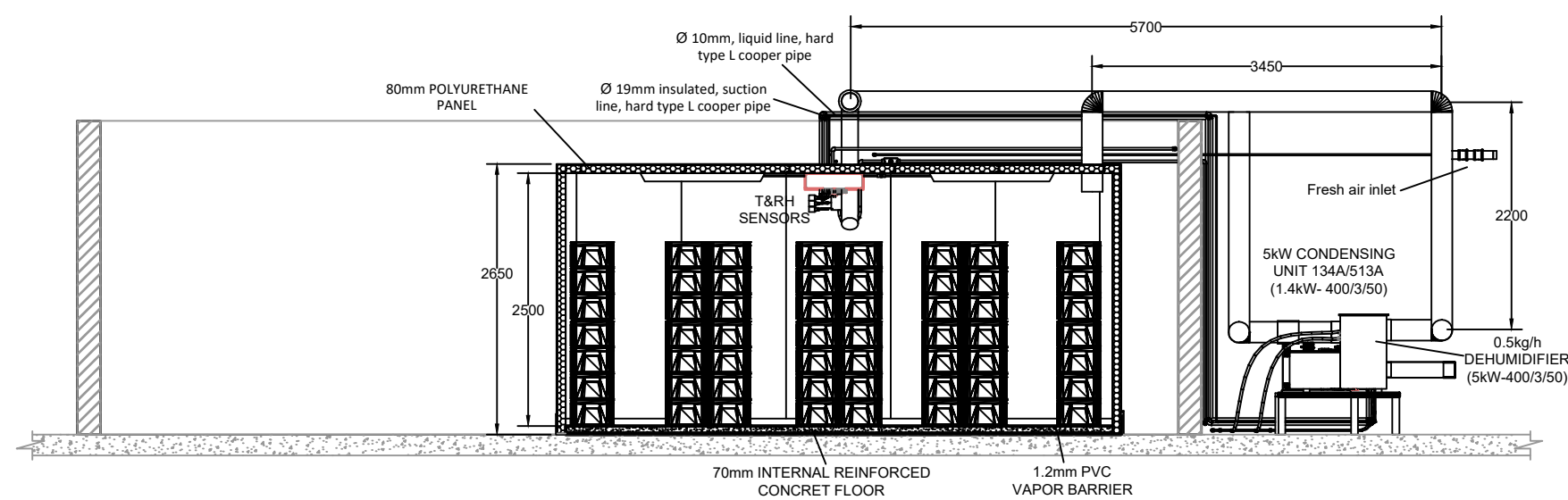
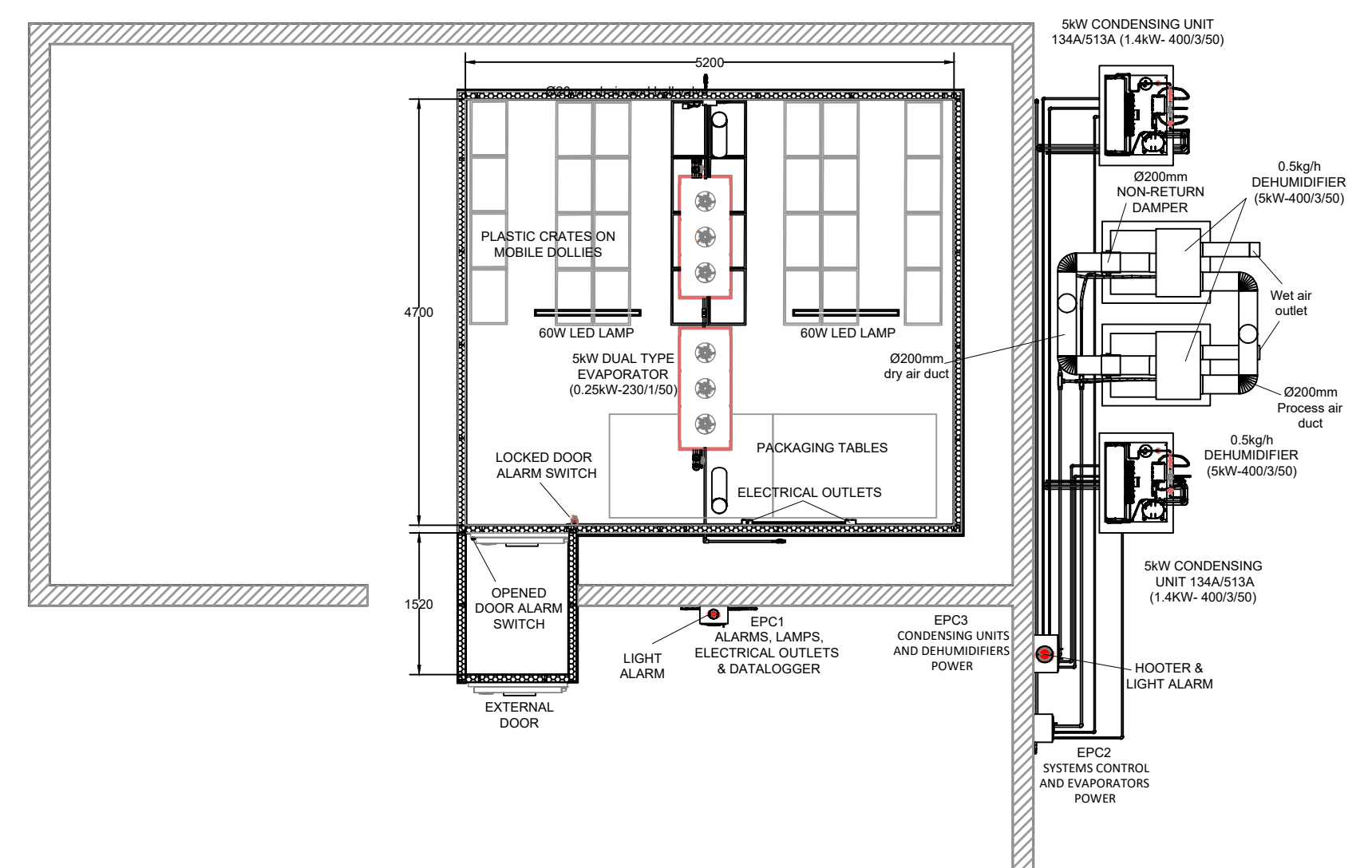
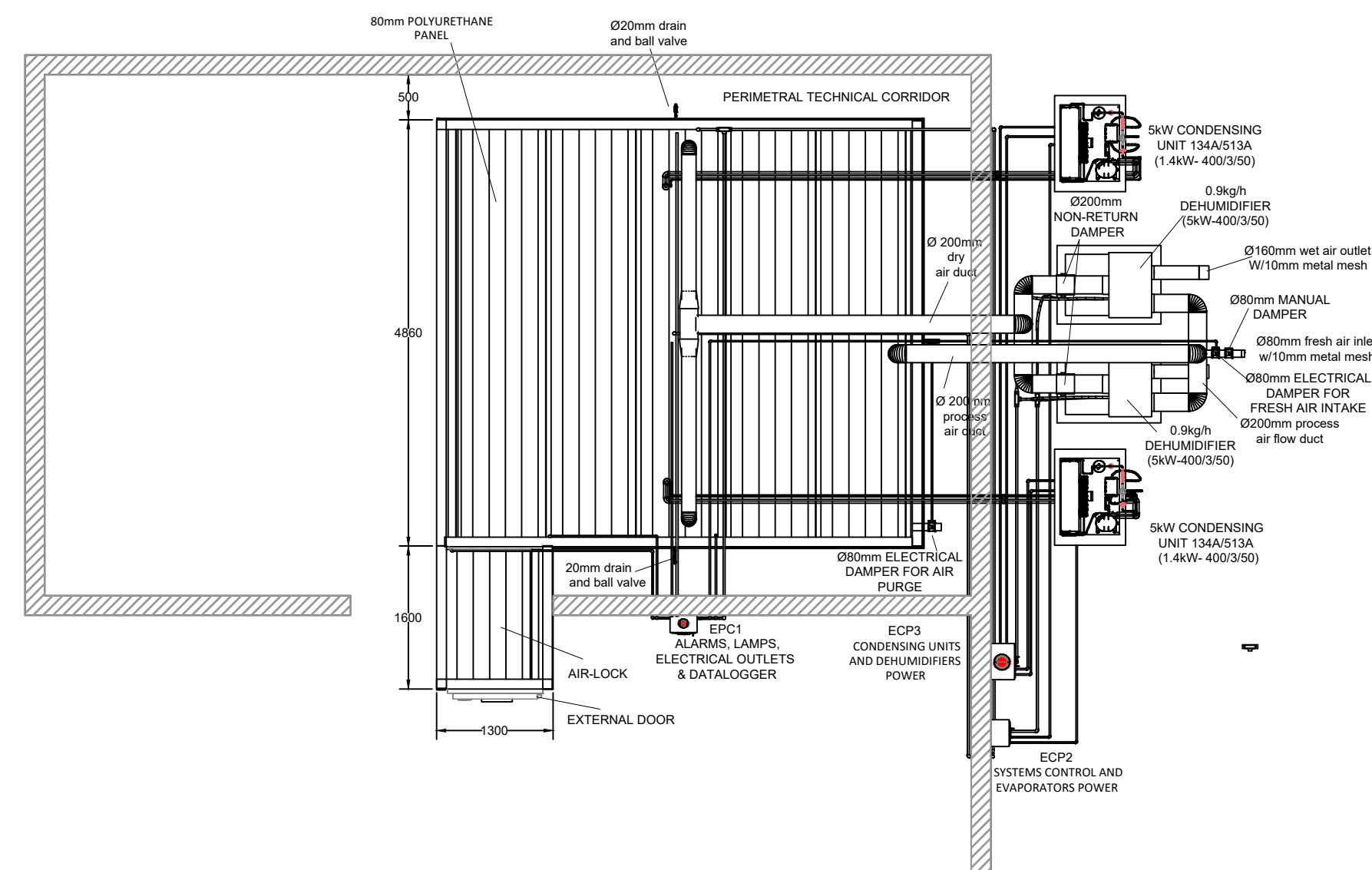
REVISIONS		



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GOPALInfra MEMBER OF GOPA CONSULTING GROUP Hindenburgring 18 61348 Bad Homburg Germany T: +49 (0)6172 68 17-0 F: +49 (0)6172 930 100 Email: info@gopa-infra.de	178A Kasungula Road P.O. Box 32817 Lusaka, Zambia T: (+260 211) 290-709 F: (+260 211) 290-860 Email: infra@lusakagopa-infra.de
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Project
ZAMBIA SEEDS FOR RESILIENCE GENE BANK INFRASTRUCTURE WORKS
Title
PROPOSED ELECTRICAL DIAGRAM (DISTRIBUTION BOARDS)
Drawing No SFR-ZM-E-01
Rev No 00



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Cel: 316-7409046
www.ingetermica.com

PROYECT
ZARI DRYING AND
PACKAGING ROOM

LOCATION
CHILANGA, ZAMBIA

DEVELOPMENT LEVEL
FOR CONSTRUCTION

CONTAINS
CHAMBER DIMENSIONS,
EQUIPMENT, DUCTS, AND
REFRIGERATION PIPES

SCALE N/A

DRAW

C. MENESES

DATE

AUGUST 3, 2024

OBSERVATIONS

SEE DETAILS IN DRAWING #2

DETAIL

REVISED

M. ROJAS

VERIFIED

VALIDATED

DRAWING

1/3

[illegible]

NOMENCLATURA

VERSIÓN

CODIGO
SFR-ZM-EM-01

WALL-FLOOR JOIN DETAIL

80

POLYURETHANE PANEL 80mm

CONCRET BASEBOARD

SLIP SHEET

INTERNAL REINFORCED CONCRETE FLOOR

70

CONCRET SUBFLOOR

0.5mm POLYETHYLENE FILM

1.2mm PVC VAPOR BARRIER

40X82X0mm, 0.5mm GL U BASE CHANNEL

6x50mm DRIVE PINS @ 1000mm O.C.

#12x25mm SELF DRILLING SCREW @ 1000mm O.C.

1.2mm PVC VAPOR BARRIER

0.5Mmm GL EXTERNAL TRIM

#12x25mm SELF DRILLING SCREW UNDER VAPOR BARRIER

90° PANEL-PANEL JOIN DETAIL

This technical cross-section diagram illustrates the assembly of a 90-degree corner joint between two panels. The panels are made of 80mm thick polyurethane with a hexagonal core. The joint is sealed with polyurethane silicone sealant and reinforced with 3mm diameter x 12mm aluminum pop rivets at 200mm on center. A PVC vapor barrier is applied to the exterior, with field-installed expanding foam filling the gap between the panels. A thermal break, indicated by a red line, is shown at the corner. The joint is finished with inside and outside corner trim.

80mm POLYURETHANE PANEL

3mm \varnothing X 12mm
ALUMINUM POP RIVET
@ 200mm O.C.

POLYURETHANE
SILICONE SEALANT

PVC VAPOR BARRIER

FIELD INSTALLED
EXPANDING FOAM

THERMAL BREAK
(FIELD CUT)

INSIDE CORNER TRIM

OUTSIDE CORNER TRIM

3mm \varnothing X 12mm
ALUMINUM POP RIVET
@ 200mm O.C.

3mm \varnothing X 12mm
ALUMINUM POP RIVET
@ 200mm O.C.

180° PANEL-PANEL JOIN DETAIL

3mmØ X 12mm ALUMINUM
POP RIVET @ 1000mm O.C.

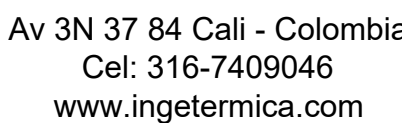
The diagram shows a cross-section of two panels meeting at a 180-degree joint. The panels have a honeycomb core. A vertical aluminum pop rivet is shown passing through the joint. A red line indicates the location of the 100mm butyl tape sealant. A black line indicates the location of the polyurethane silicone sealant. The word 'OUTSIDE' is written at the bottom.

POLYURETHANE
SILICONE SEALANT

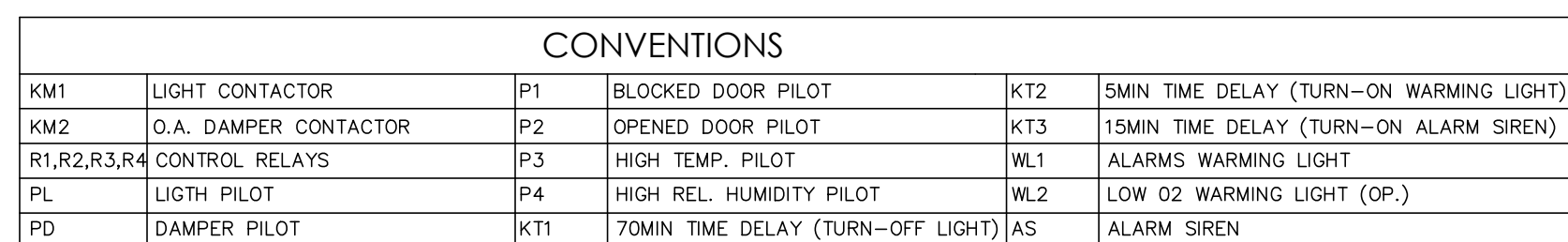
100mm BUTYL
TAPE SEALANT

OUTSIDE

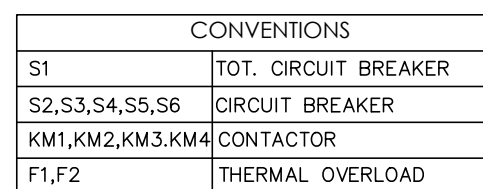




LIGHT, DAMPER AND ALARMS 230/1/50



ELECTRICAL POWER 380-400/3/50

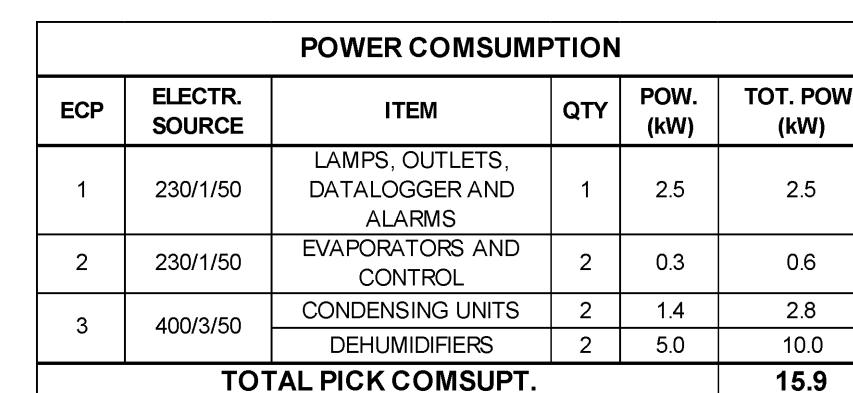


CONVENTIONS	
KM1	COMPRESSOR CONTACTOR
F1	THERMAL OVERLOAD RELAY
PS1	PRESSURE CONTROL
P1	TURN-ON PILOT
P2	OVERLOAD ALARM
P3	HIGH PRESSURE ALARM

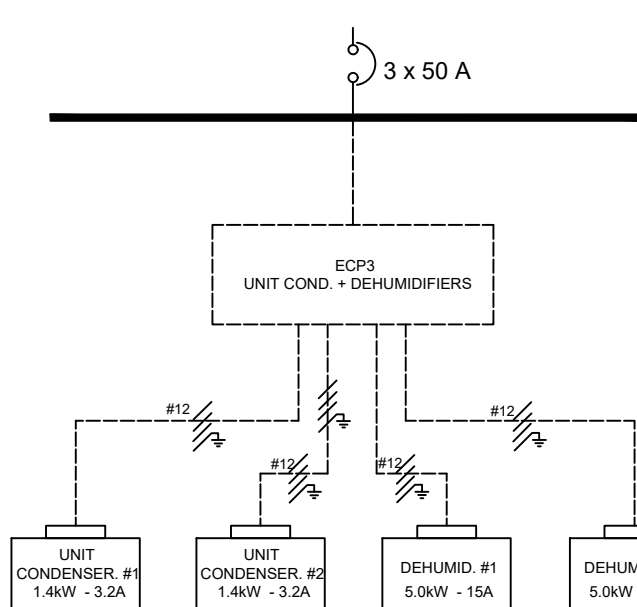
CONVENTIONS	
S1	TOT. CIRCUIT BREAKER
S2,S3,S4,S5,S6	CIRCUIT BREAKER
KM1,KM2	CONTACTOR

CONVENTIONS	
TS	TOGGLE SWITCH – EVAP. & SOLENOID
KM2	EVAPORATOR CONTACTOR
KM4	DEHUMIDIFIER CONTACTOR
P1	SOLENOID GREEN PILOT
P2	EVAPORATOR GREEN PILOT
P3	DEHUMIDIFIER GREEN PILOT
S	REFRIGERATION SOLENOID

230/1/50



380-400/3/50



SFR-ZM-EM-03

Drawing Numbers	Drawing Title	Sheet	Paper Size	Revision Number
SFR-ZM-P-01	Proposed Seed Bank Site Layout	1 of 1	A3	00
SFR-ZM-C-01	Walkway Floor, Foundation and Roof Plan	1 of 2	A3	00
SFR-ZM-C-01	Walkway Sections, Details and Spoon Drain Details	2 of 2	A3	00
SFR-ZM-C-02	Equipment Room	1 of 1	A3	00
SFR-ZM-C-02	Equipment Room Plan & Details	1 of 2	A3	00
SFR-ZM-E-01	Proposed Electrical Diagram	1 of 1	A3	00
SFR-ZM-E-01	Proposed Electrical Diagram (Distribution Boards)	1 of 2	A3	00
SFR-ZM-EM-01	Chamber Dimensions, Equipment, Ducts and Refrigeration Pipes	1 of 3	A3	00
SFR-ZM-EM-02	Chamber Construction Details	2 of 3	A3	00
SFR-ZM-EM-03	Electrical and Control Diagrams	3 of 3	A3	00

PART 3 – CONDITIONS OF CONTRACT (CC) AND CONTRACT FORMS

Section VIII. General Conditions (GC)

These Standard Bidding Documents have been designed for use with the Fédération Internationale des Ingénieurs-Conseils (FIDIC) General Conditions of the Short Form of Contract, 1st edition, 1999. Due to the FIDIC copyrights, these FIDIC General Conditions are not included in these Tender Documents which contain instructions on how these conditions can be acquired.

[name of Employer]

[name of Contract]

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The conditions of Contract are the “General Conditions” which form part of the Short Form of Contract first edition 1999 published by the Federation Internationale des Ingenieurs-Conseils (FIDIC) and the following “Particular Conditions” which are the Employer created amendments and additions to such General Conditions.

Copies of the FIDIC Short Form of Contract can be obtained from:

International Federation of Consulting Engineers

World Trade Centre II

P.O. Box 311

CH-1215 Geneva 15

Switzerland

Phone: +41 22 799 49 00

Fax: +41 22 799 49 01

email: fidic@fidic.org

www: <http://www.fidic.org>

Section IX. Particular Conditions

Note	It is intended that the Short Form of Contract will work satisfactorily without any Particular Conditions. However, if the requirement of the project makes it desirable to amend any Clause or to add provisions to the Contract, the amendments and additions should be set out on pages headed Particular Conditions. Care should be taken with the drafting of such Clauses especially in view of the high priority given to the Particular Conditions by Sub-Clause 1.3.
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Appendix 1 to Particular Conditions of Contract

KfW Policy – Sanctionable Practice – Social and Environmental Responsibility

1) Sanctionable Practice

The PEA and the Contractors (including all members of a Joint Venture and proposed or engaged Subcontractors) must observe the highest standard of ethics during the Tender Process and performance of the Contract.

By signing the Declaration of Undertaking the Contractors declare that (i) they did not and will not engage in any Sanctionable Practice likely to influence the Tender Process and the corresponding Award of Contract to the PEA's detriment, and that (ii) in case of being awarded a Contract they will not engage in any Sanctionable Practice.

Moreover, KfW requires to include in the Contracts a provision pursuant to which Contractors must permit KfW and in case of financing by the European Union also to European institutions having competence under European law to inspect the respective accounts, records and documents relating to the Tender Process and the performance of the Contract, and to have them audited by auditors appointed by KfW.

KfW reserves the right to take any action it deems appropriate to check that these ethics rules are observed and reserves, in particular, the rights to:

- (a) reject an Offer for Award of Contract if during the Tender Process the Bidder who is recommended for the Award of Contract has engaged in Sanctionable Practice, directly or by means of an agent in view of being awarded the Contract;
- (b) declare misprocurement and exercise its rights on the ground of the Funding Agreement with the PEA relating to suspension of disbursements, early repayment and termination if, at any time, the PEA, Contractors or their legal representatives or Subcontractors have engaged in Sanctionable Practice during the Tender Process or performance of the Contract without the PEA having taken appropriate action in due time satisfactory to KfW to remedy the situation, including by failing to inform KfW at the time they knew of such practices.

KfW defines, for the purposes of this provision, the terms set forth below as follows:

Coercive Practice	The impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of the person with a view to influencing improperly the actions of a person.
Collusive Practice	An arrangement between two or more persons designed to achieve an improper purpose, including influencing improperly the actions of another person.
Corrupt Practice	The promising, offering, giving, making, insisting on, receiving, accepting or soliciting, directly or indirectly, of any illegal payment or undue advantage of any nature, to or by any person, with the intention of influencing the actions of any person or causing any person to refrain from any action.

- Fraudulent Practice** Any action or omission, including misrepresentation that knowingly or recklessly misleads, or attempts to mislead, a person to obtain a financial benefit or to avoid an obligation.
- Obstructive Practice** Means (i) deliberately destroying, falsifying, altering or concealing evidence material to the investigation or the making of false statements to investigators, in order to materially impede an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice, or threatening, harassing or intimidating any Person to prevent them from disclosing their knowledge of matters relevant to the investigation or from pursuing the investigation, or (ii) any act intended to materially impede the exercise of KfW's access to contractually required information in connection with an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice.
- Sanctionable Practice** Any Coercive Practice, Collusive Practice, Corrupt Practice, Fraudulent Practice or Obstructive Practice (as such terms are defined herein) which is unlawful under the Financing Agreement.

2) Social and Environmental Responsibility

Projects financed in whole or partly in the framework of Financial Cooperation have to ensure compliance with international Environmental, Social, Health and Safety (ESHS) standards (including issues of sexual exploitation and abuse and gender based violence) Contractors in KfW-financed projects shall consequently undertake in the respective Contracts to:

- (a) comply with and ensure that all their Subcontractors and major suppliers, i.e. for major supply items comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the respective Contract and the fundamental conventions of the International Labour Organisation⁸ (ILO) and international environmental treaties and;
- (b) implement any environmental and social risks mitigation measures, as identified in the environmental and social impact assessment (ESIA) and further detailed in the environmental and social management plan (ESMP) as far as these measures are relevant to the Contract and implement measures for the prevention of sexual exploitation and abuse and gender-based violence.

⁸In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

Section X. Contract Forms

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Notification of Award

Letter of Acceptance

[Letterhead paper of the Employer]

[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 identification number, as given in the Contract Data]* for the Contract Price *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted by our institution.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section X, Contract Forms, of the Bidding Documents.

Authorized Signature:

Name and Title of Signatory:

Name of institution:

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made the _____ day of _____, _____, between _____ of _____ (hereinafter "the Employer"), of the one part, and _____ of _____ (hereinafter "the Contractor"), of the other part:

WHEREAS the Employer desires that the Works known as _____ should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein, in the sum of [*insert Contract Price or Ceiling in words and figures, expressed in the Contract currency(ies)*] (hereafter called "the Contract Price").

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - (i) The Letter of Acceptance;
 - (ii) The Letter of Bid and Appendix to Bid (including the signed Declaration of Undertaking);
 - (iii) The addenda Nos _____ (if any);
 - (iv) The Particular Conditions (if any);
 - (v) The General Conditions;
 - (vi) The Specifications;
 - (vii) The Drawings;
 - (viii) The completed Schedules; and
 - (ix) The Contractor's Bid and any other documents forming part of the contract.
3. In consideration of the payments to be made by the Employer to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy 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 therein, 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 hereto have caused this Agreement to be executed in accordance with the laws of _____ on the day, month and year specified above.

Signed by _____ (for the Employer)

Signed by _____ (for the Contractor)

Bid Security - "Not Applicable"

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

BID GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of the bidder, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its bid (hereinafter called "the Bid") for the execution of *[Insert project, object of the contract/brief description of the works]* under Invitation for Bids No. *[Insert National Competitive Bidding number]* ("the NCB").

We, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary, waiving all objections and defences, any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]* upon receipt by us of the Beneficiary's first demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

- (a) Has withdrawn its Bid during the period of bid validity set forth in the Applicant's Bid Submission Form (the Bid Validity Period); or
- (b) Having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period, (i) has failed to sign the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee shall expire not later than *[Insert expiry date]*⁹.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

[As preferred option regarding guarantee rules insert¹⁰: This guarantee is subject to the Uniform Rule for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.]

Place, date

Guarantor's authorized signature(s)

⁹ Pursuant to ITB Clause 19.3 the guarantee must be valid for at least 42 days beyond the bid validity.

¹⁰ In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.

Advance Payment Security

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of contractor, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called “the Applicant”) has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the execution of *[Insert object of the contract and brief description of Works]* (hereinafter called “the Contract”). Furthermore we understand that, according to the conditions of the Contract, an advance payment in the sum of *[Insert amount and currency in words and figures]*¹¹, representing *[Insert percentage in words and figures]* % of the contract price, is to be made against an advance payment guarantee.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary, any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]* upon receipt by us of the Beneficiary’s first demand, supported by the Beneficiary’s statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for the demand or the sum specified therein.

The advance payment guarantee shall come into force and effect as soon as the advance payment has been credited to the Applicant on its account. Minor deductions of the above mentioned amount notably due to bank fees shall have no effect on the entry into force.

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser’s country]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) per cent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the *[Insert date]*, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date, by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

[As preferred option regarding guarantee rules insert¹²: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]

¹¹This guarantee must be issued in the contract currency only.

¹²In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank’s branch issuing the guarantee is physically located.

Performance Security

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of contractor, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the execution of *[Insert object of the contract and brief description of Works]* (hereinafter called "the Contract"). Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required for *[Insert percentage in words and figures]* % of the contract price.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary, any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]*¹³ upon receipt by us of the Beneficiary's first demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for the demand or the sum specified therein.

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser's country]*.

This guarantee shall expire not later than *[Insert expiry date]*¹⁴.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

[As preferred option regarding guarantee rules insert¹⁵: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]

Place, date

Guarantor's authorized signature(s)

¹³This guarantee shall be issued in the contract currency only.

¹⁴The guarantee shall be valid for at least 28 days from the date of contractual contract completion (including warranty obligations).

¹⁵In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.

Retention Money Security

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

RETENTION MONEY GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of contractor, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the execution of *[Insert object of the contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, payment of *[insert the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security]* is to be made against a Retention Money guarantee.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert guarantee amount and currency in words and figures]*¹⁶ upon receipt by us of the Beneficiary's first demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or show grounds for the demand or the sum specified therein.

The retention money guarantee shall come into force and effect as soon as the second half of the Retention Money has been credited to the Applicant on its account. Minor deductions of the above mentioned amount notably due to bank fees shall have no effect on the entry into force.

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser's country]*.

This guarantee shall expire not later than *[Insert expiry date]*¹⁷.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

[As preferred option regarding guarantee rules insert¹⁸: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]

Place, date

Guarantor's authorized signature(s)

¹⁶The Guarantor shall insert an amount representing the amount of the second half of the Retention money or if the amount guaranteed under Performance Guarantee when the Taking-Over Certificate is issued, is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security and denominated in the contract currency(ies) only.

¹⁷Insert the same expiry date as set forth in the performance security, representing the date twenty-eight days after the completion date described in the Appendix to Bid. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

¹⁸ In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.