

**REPUBLIC OF KENYA**



**KISII COUNTY GOVERNMENT**



**ARAB BANK FOR ECONOMIC  
DEVELOPMENT IN AFRICA**



**SAUDI FUND FOR  
DEVELOPMENT**



**MINISTRY OF HEALTH**

**BIDDING DOCUMENTS**

**For Procurement of**

**PROPOSED CANCER CENTRE AT  
THE KISII TEACHING AND REFERRAL HOSPITAL  
Mechanical Works  
(LP GAS INSTALLATIONS)**

**TENDER NO.: MOH/NCCP/ICB/014/2023-2024**

**5 OF 5**

**CLOSING DATE: 5TH APRIL 2024 AT 10.00 A.M. LOCAL TIME**

**SCHON ASSOCIATES**



**NARCO ENGINEERING  
CONSULTANTS**



DR. NABEEL ABDUL-RAHEEM CONSULTANTS

**Issued on: 20th February 2024**

**PROPOSED KISII CANCER CENTER – AT KISII COUNTY**  
**TECHNICAL SPECIFICATION AND BILLS OF QUANTITIES**

**FOR**

**LP GAS INSTALLATIONS**

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# INVITATION FOR TENDER

<b>COUNTRY:</b>	<b>KENYA</b>
<b>PROJECT NAME:</b>	<b>CONSTRUCTION AND EQUIPPING OF A NEW CANCER DIAGNOSTIC AND TREATMENT CENTRE AT KISII TEACHING AND REFERRAL HOSPITAL</b>
<b>TENDER NO:</b>	<b>MOH/NCCP/ICB/014/2023-2024</b>
<b>TENDER NAME:</b>	<b>LP GAS INSTALLATIONS</b>
<b>CLOSING DATE:</b>	<b>5<sup>TH</sup> APRIL 2024 AT 10:00 A.M. KENYAN TIME</b>

1. The Government of the Republic of Kenya has obtained a loan from the Arab Bank for Economic Development in Africa and the Saudi Fund for Development to finance the Construction, Equipping and Commissioning of a new Cancer Diagnostic and Treatment Centre at Kisii Teaching and Referral Hospital and it is intended that part of the proceeds of the said loan will be applied towards the costs of the Works.
2. The Ministry of Health invites sealed Tenders from eligible Tenderers for the Construction, Equipping and Commissioning of a new Cancer Diagnostic and Treatment Centre at Kisii Teaching and Referral Hospital (hereinafter called the Works) and the remedying of any defects therein.
3. Eligible interested Tenderers may obtain further information, addendums or clarifications in respect to this Tender from the Ministry website [www.health.go.ke](http://www.health.go.ke). All eligible Tenderers are advised to regularly check the website during the bidding period.

4. A complete set of the Tender documents may be downloaded from the Ministry's website [www.health.go.ke](http://www.health.go.ke) or public procurement information portal: [www.tenders.go.ke](http://www.tenders.go.ke), free of charge. Eligible Tenderers downloading the Tender document MUST forward their company's details to [procurement@health.go.ke](mailto:procurement@health.go.ke) so that any addendum/ clarifications can be sent to their email address.

Requests for clarification to be sent either by mail to Principal Secretary, Ministry of Health P. O Box 30016 Nairobi, Kenya or through email address [procurement@health.go.ke](mailto:procurement@health.go.ke), at any time, but not later than 14 days before the closing date for submittal of bids.

The Tender is comprised of the following:

Tender	Tender Number	Name of Tender
5.	MOH/NCCP/ICB/014/2023-2024	LP Gas Installations

Interested bidders may participate on their own or as a joint venture. All partners of the joint venture shall be liable jointly and severally for the execution of the contract in accordance with the contract terms. A copy of the agreement entered into by the joint venture partners shall be submitted with the tender.

5. A Pre-Tender site visit will be held at the *site located opposite Kisii School along Kericho-Kisii Highway on **Monday, 11<sup>th</sup> March 2024 at 09:00 a.m.** The site has a conspicuous signpost that reads "Proposed Kisii Cancer Centre".*
6. The **original** and **one copy** of the Tender Document shall be placed inside of a sealed envelope, clearly marked with, "[Name of the TENDER] ", reference number with a warning "**Do Not Open until [5<sup>th</sup> April 2024 at 10.00 a.m. (Kenyan Time)]**".
7. If the envelopes and packages with the tenders are not sealed and marked as required, the Client will assume no responsibility for the misplacement, loss, or premature opening of the tender.
8. Every Tender must be accompanied by a **Tender Security of 2% of the Total Tender Amount** or equivalent amount in the currency of the Tender.
9. Tenders must be delivered to the address below,

The Principal Secretary,  
Ministry of Health,  
Afya House Building, Cathedral Road,  
P.O. Box 30016-00100,  
NAIROBI.

or be deposited in the Tender Box located on 1<sup>st</sup> Floor of Afya House, Ministry of Health, Cathedral Road, Nairobi, so as to be received on or before **10:00 a.m. on 5<sup>th</sup> April 2024**.

Electronic bidding will *not* be permitted. Late tenders will be rejected.

10. Tenders will be opened immediately thereafter at the GTZ Boardroom located at Afya House Ground Floor.

**Head Supply Chain Management Services**

**For: Principal Secretary**

**SECTION 1:**

**SIGNATURE PAGE & SPECIAL NOTES**

**PROPOSED KISII CANCER CENTER, KISII COUNTY, KENYA**

## **SUB-CONTRACTOR QUALIFICATION INFORMATION**

### **BID ELIGIBILITY AND QUALIFICATION CRITERIA**

The following criteria will be used in the evaluation of all bids. The submission of the required documents will be used in the determination of the Completeness and Suitability of the Bid. Bids that do not contain all the information required will be declared non-responsive and shall not be evaluated further.

#### **A. MANDATORY EVALUATION**

<b>ITEM</b>	<b>MANDATORY REQUIREMENT</b>	<b>YES</b>	<b>NO</b>
1	Copy of Certificate of Registration/Incorporation		
2	Copy of Valid Tax Compliance Certificate from Country of Residence		
3	Copy of valid business permit or International equivalent		
4	Copy of Valid Registration with National Construction Authority (NCA) for Mechanical (Class 1) or equivalent International standard, include relevant licenses, registration, and certifications		
5	Attach copies of Recommendation letters from three of your major clients having undertaken similar assignment		
6	Show proof of Local/Regional presence		
7	Certified copy of valid contractor's annual NCA practicing license for Mechanical works or equivalent International Standard		
8	Certified copy of Company Record showing shareholders (CR12 or Equivalent)		
9	Audited Accounts for the last three years		
10	Proof of having completed at least one relevant project valued at 100,000 USD and above for LP Gas Installation completed in the last 10 years. Attach relevant project documents to show proof of project completion.		
11	Technical specifications of all the equipment proposed as laid out in the Specifications and Drawings. Include Brochures and Catalogues.		
12	The Bidder shall provide details of line(s) of credit available to the bidder, including amount(s) and name of bank(s) making available such line(s) of credit		
13	The Bidder shall provide letter(s) authorizing the Employer to seek references from the bidder's bankers		
	<b>PASSED (RESPONSIVE)</b>		
	<b>FAILED (NON-RESPONSIVE)</b>		

**NOTE:** Failure to comply with Mandatory requirements will lead to automatic disqualification.

**Only bidders who are successful at this stage will proceed to the next stage of evaluation.**



**PROPOSED KISII CANCER CENTER – AT KISII COUNTY**

**TECHNICAL SPECIFICATION AND BILLS OF QUANTITIES**

**FOR**

**LP GAS INSTALLATIONS**

**Preamble**

**Supplied as part of the Main Tender for LP Gas Installations at PROPOSED KISII CANCER CENTER – AT KISII COUNTY**

.

**ISSUED BY:**

The Principle Secretary  
Ministry of Health  
P.O. Box 30016 - 00100,  
Nairobi, Kenya.

**PREPARED BY:**

Schon and Associates,  
P.O. BOX 38601-00100,  
Nairobi, Kenya.

The Tender for the above-mentioned works dated this \_\_\_\_\_ day of \_\_\_\_\_ 2024 by the undersigned parties refers to the Bills of Quantities consisting of the pages numbered on contents page.

.....

SUB-CONTRACTOR

.....

MAIN CONTRACTOR

Date .....2024

Date ..... 2024

SIGNATURE PAGE

## PROPOSED KISII CANCER CENTER – AT KISII COUNTY

### TENDER FOR LP GAS INSTALLATIONS

#### **SPECIAL NOTES**

1. The Tenderer shall tender for the above Works in accordance with the appended drawings, Technical Specification and Bills of Quantities.
2. The Tenderer is required to check the numbers of the pages of these Bills of Quantities against the contents stated on Page 1-i and should he find any missing, in duplicate or illegible he must inform the Engineer at once and have the same rectified.
3. Should the Tenderer be in doubt about the precise meaning of any item or figure, for any reason whatsoever, he must inform the Engineer in order that the correct meaning may be decided before the date for submission of the tenders.
4. No liability will be admitted or claim allowed in respect of errors in the Tenderer's tender due to mistakes in the Bills of Quantities that should have been rectified in the manner described above.
5. The annexed Bills of Quantities must be fully priced in ink. The Tenderer shall not alter or otherwise qualify the text of these Bills of Quantities. Any alteration or qualification made without authority will be ignored and the text of the Bills of Quantities as printed will be adhered to.
6. **Fully priced Bills of Quantities must be accompanied by brochures and technical literature for the major mechanical and electrical items.**
7. The Tenderer shall be deemed to have made allowance in his prices generally to cover items of Preliminaries or additions to Prime Cost Sums or other items, if the Tenderer has not priced these where appropriate.
8. All items of measured work shall be priced in detail and tenders containing lump sums to cover trades or groups of work must be broken down to show prices of each item before they will be accepted. Lump sums to cover items of Preliminaries shall be likewise broken down if so required.
9. This tender shall be exempted from **all taxes and duties** as imposed by Kenya Revenue Authority or any other Statutory Authority in Kenya having jurisdiction over the works.
10. Under no circumstances will any expense incurred by Tenderers in preparation of this tender be allowed.
11. The copyright of these Bills of Quantities is vested in the Engineer and no part thereof may be reproduced without express permission given in writing by the Engineer.
12. The Tenderer is solely responsible for the accurate ordering of materials in accordance with the Drawings and Engineer's instructions and no claim for any loss or expense will be entertained for orders for materials based upon the Bills of Quantities.
13. The successful tenderer shall be appointed as a **NOMINATED SUB – CONTRACTOR under the FIDIC Conditions of sub-contract for construction for building and engineering works designed by the employer**

## PROPOSED KISII CANCER CENTER – AT KISII COUNTY

### TENDER FOR LP GAS INSTALLATIONS

#### CONDITIONS OF TENDERING

- 1.01 Each Tenderer must submit, enclosed in a plain sealed envelope clearly marked, "TENDER FOR LP GAS INSTALLATIONS FOR THE PROPOSED KISII CANCER CENTRE – KISII COUNTY". The Tenderer shall enter his tender sum on the prescribed Tender Form.
- 1.03 Each Tenderer must submit the name of a Surety who shall be an established Bank, willing to be bound to the Tenderer in the sum equal to ten per cent (10%) of the tender sum for due performance of the Contract and must submit together with his tender the form attached thereto duly filled in and signed by the proposed Surety agreeing to sign a Bond to that effect when and if called upon to do so. **A Surety from an insurance company will not be accepted.**
- 1.04 Tenders and all the Documents in connection therewith as specified above must reach the Address as advised and on the date stated in the covering letter accompanying these documents.
- 1.05 In the case of a tender not being delivered by hand, the Tenderer must arrange for his tender and other documents to be posted in time to reach the above office not later than the stipulated time.
- 1.06 Any tender delivered after the stipulated time, from whatever cause arising, will be disqualified.
- 1.07 In no case will any expense incurred by the Tenderer in the preparation of his tender be allowed.
- 1.08 Tenders shall remain valid for One Hundred and Twenty (120) days from the final date of submission of tenders stipulated in Paragraph 2.01 above, and no Tenderer may withdraw his tender after that period.
- 1.09 The Employer shall not be bound to accept the lowest or any tender and shall not be bound to give reasons for his decision.
- 1.10 The Engineer shall notify the accepted approved Tenderer (if any) of such acceptance by letter within One Hundred and Twenty (120) days during which, by Paragraph 3.01 thereof, the tender is to remain valid and the said Tenderer shall then within the time stated in the Form of Tender first execute the formal Contract Agreement and then on the same day his approved Surety shall sign the Bond. The Engineer however, reserves the right to extend the period for executing the formal Contract Agreement if satisfied that adequate reasons exist for so doing.
- 1.11 Every notice to be given to a Tenderer may be posted to the Tenderer's address as given in his tender and such posting shall be deemed to be good service of such notice.
- 1.12 The term "Electrical and Mechanical Engineer" wherever used in these Conditions and in all Contract, Documents shall be such person or persons as may be duly authorized to represent M/s Schon Associates.
- 1.12 The words "Approved Tenderer" in these Conditions shall mean that the Tenderer shall be approved by the Employer as having complied with these Conditions in every respect.
- 1.13 The word "Tenderer" in these Conditions shall be deemed where applicable to include two or more persons. The word "his" may also mean "their" and the word "he" may also mean "they".

- 1.14 If it is found on the examination of a tender that there is a discrepancy between the Total Amount of the tender and the amount arrived at by valuing the quantities set out in the Bills of Quantities at the rates or prices set against them by the Tenderer, then the figures shall be corrected arithmetically and the differences between the tender and the corrected total shall be applied as a percentage adjustment or addition or omission on all the rates, so that the original tender amount remains unaltered. When calculating the percentage adjustment, the total cost of the Preliminaries, Provisional and P.C. Sums, Contingencies and any other items of a similar nature shall be excluded.
- 1.15 If it is found on examination, that any rates for the work appear to be unreasonable then the attention of the Tenderer shall be drawn to any such items. If as a result of this, the Tenderer asks for any rates to be changed, then the arithmetical effect of any change will be adjusted in accordance with sub-paragraph 8.01 above.
- 1.16 Non-compliance with the above Conditions in any respect shall render the tender liable to rejection.

## FORM OF TENDER

To:

Principle Secretary  
Ministry of Health,  
P.O. Box 30016- 00100  
Nairobi, Kenya.

Sirs,

### PROPOSED KISII CANCER CENTER – AT KISII COUNTY

#### TENDER FOR LP GAS INSTALLATIONS

1.01 Having visited the site and examined the tender documents for the execution for the above works I/We .....

(Names) under and subject to the Conditions of Tendering annexed hereto, hereby tender and offer to execute and perform the works and provisions and supply all labour and materials and everything of every kind respectively named, shown, described and alluded to in, or to be inferred from the **FIDIC Conditions of sub-contract for construction for building and engineering works designed by the employer**, the General Conditions of Sub-Contract, Specification and Bills of Quantities, Drawings and conditions of contract to be executed and supplied on the part of the Sub-Contractor, for the Works above described for the Sum of:-

Fixed /Non Fluctuating Price Tender (Adjusted fluctuating price to allow for future price changes).  
Tender figure, Prime Cost & Provisional sums and Contingencies.

Amount in figures (USD): .....

Amount in words (USD): .....

.....

1.02 I/We agree to phase the sub-contract work in accordance with the building programme to be agreed with the main Contractor at the time of letting the Main and Sub-Contracts.

1.03 I/We further agree to be bound by and submit to the said General Conditions of Sub-Contract and priced Specification and Bills of Quantities which shall form a basis for valuation of interim Certificates and any extra or omitted work which may from time to time be ordered by the Architect.

1.04 We have examined all the documents, which will form part of this contract and have no further questions relating to them.

2.01 I /We submit the name of .....

Address .....

as a Surety who is willing to be bound to the Main Contractor in an amount equal to 10% of the Sub-Contract amount for the due performance for the Sub-Contract up to the date of completion of the Works as certified by you, and who will, when and if called upon, sign a Bond to that effect without limitations on the same day as the Sub-Contract Agreement is signed, but thereafter, and in the event of the Surety named herein not being approved by you, the undersigned agree(s) to furnish

within seven (7) days another Surety to your approval.

3.01 Whereas it is understood that you reserve to yourself the right to accept or to refuse this tender whether it be lower or higher than any other tender, or of the same amount, the undersigned agree(s) that this tender shall remain valid and shall not be withdrawn within One Hundred and Twenty (120) days from the final date for the submission of Tenders stipulated in the Conditions of Tendering.

4.01 And further, the undersigned agree(s), in the event of your acceptance of this tender, to execute the formal Sub-Contract Agreement within seven (7) days from posting, or delivery if by hand, of notification of acceptance.

Signature of Tenderers: .....

Name of Tenderer: .....

Address: .....

Date: .....

Signature of Witness: .....

Name of Witness: .....

Address: .....

Date: .....

NOTE: Tenderers are not required to attach the Surety Undertaking, duly signed by the Surety, to this Form of Tender. However, a performance bond will be executed on being successful before contract signature.

## DECLARATION ON AVAILABILITY OF MATERIALS, PLANT, SUPERVISION AND SKILLED LABOUR

To: The Principle Secretary  
Ministry of Works  
P. O. Box 30016 – 00100  
Nairobi, Kenya

Sirs,

### PROPOSED KISII CANCER CENTER – AT KISII COUNTY

#### TENDER FOR LP GAS INSTALLATIONS

In connection with the attached tender for the above Sub-Contract, I/We have made full enquiries with manufacturers and/or distributors of the relevant materials and plant required to be incorporated or used in the Works and I/We hereby declare that I/We will have available: -

- \* (a) all the necessary  
or \* (b) a proportion of the necessary

Materials, plant, tools and equipment, supervision and skilled labour

- \* (a) from stocks in hand  
or \* (b) from sources of supply available to me/us  
for use as and when they are required for the Works.

Signature of Tenderer .....

Name of Tenderer .....

Address .....

Date.....

#### NOTES: -

1. \*Delete whichever is not applicable.
2. \*The Tenderer may be required before approval
- (a) To disclose the (i) actual quantities of the various materials and (ii) plant available for immediate use and, (iii) To submit names and CV's and academic certificates of available supervision personnel and team leader being a mechanical engineer with over 10 years' experience, (iv) Skilled labour.
- b) To give details of the arrangements which have been made by the Tenderer for the obtaining and delivery to the site of the further materials and plant and employment of supervision and skilled labour required to complete the works.
3. Failure to satisfy the Engineer that adequate arrangements have been made to provide or obtain the whole of the materials, plant, tools and equipment necessary to complete the Works within the contract period or such extended period as may be authorized, may render the Tenderer liable to be considered in default.

**SURETY UNDERTAKING**

**PROPOSED KISII CANCER CENTER – AT KISII COUNTY  
TENDER FOR LP GAS INSTALLATIONS**

We ..... (Surety)

of P.O. Box .....

hereby undertake to provide a guarantee in the form of Performance Bond supplied with these tender documents, under seal if so required, for the due performance of the contract to the extent to ten percent (10%) of the awarded contract sum in the event of

.....(tenderer)

of (address) .....

being awarded the tender for construction and completion of the project including twelve (12) months maintenance.

We further agree to execute a Performance Bond under the forgoing terms within FOURTEEN (14) DAYS of being called upon to do so.

Should the said tenderer not be awarded the contract, it is understood that this offer shall become null and void.

Signed for and on behalf of surety ..... (Authorised signatory)

Name & address of surety (official rubber stamp)

.....

Date signed .....



## CONFIRMATION OF SUFFICIENCY OF INFORMATION PROVIDED / SITE VISIT

This is to certify that we \_\_\_\_\_  
(Name of Tenderer)

of the firm of \_\_\_\_\_  
(Name of firm tendering)

Having studied the contract documents, have made our selves familiar with all local conditions likely to influence the works and cost thereof.

We undertake to treat all provided information with strict confidentiality.

We further certify that we are satisfied with the description of the works and explanations given and confirm as follows:

We visited the site on \_\_\_\_\_ and confirmed all necessary information.

We did not visit the site but confirm sufficiency of provided information:

\_\_\_\_\_  
Signed

\_\_\_\_\_  
(Name & Signature of Tenderer)

# PERFORMANCE BANK GUARANTEE

## PROPOSED KISII CANCER CENTER – AT KISII COUNTY TENDER FOR LP GAS INSTALLATIONS

To:

Principle Secretary  
Ministry of Health,  
P.O. Box 30016- 00100  
Nairobi, Kenya.

(Date)

Dear Sir,

WHEREAS..... (Hereinafter called "the Contractor") has undertaken, in pursuance of Contract for ..... to execute (herein after called the "works")

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

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of USD.....

(Amount of Guarantee in figures) USD.....

(amount of Guarantee in words), and we undertake to pay you, up to your first written demand and without cavil or argument, any sum or sums within the limits of USD ..... (Amount of Guarantee in words) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

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

This guarantee shall be valid until the date of issue of the Certificate of Completion.

**SECTION 2:**  
**PRELIMINARIES**  
**KISII CANCER CENTRE - KISII COUNTY, KENYA**

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# PROPOSED KISII CANCER CENTER – AT KISII COUNTY

## TENDER FOR LP GAS INSTALLATIONS

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## PRELIMINARIES

### A ABBREVIATIONS

Throughout these Bills, units of measurements and terms are abbreviated and shall be interpreted as follows: -

"m <sup>3</sup> "	Shall mean Cubic Metre
"m <sup>2</sup> "	Shall mean Square Metre
"Lm or m"	Shall mean Linear Metre
"Lbs."	Shall mean Pounds Weight Avoirdupois.
"kg"	Shall mean Kilogram.
"No."	Shall mean Number.
"P.Sum"	Shall mean Provisional Sum
"Sum"	Shall mean Lump Sum
"Prs."	Shall mean Pairs.
"LV"	Shall mean Low Voltage

"Do." or "Ditto" Shall mean the whole of the preceding description except as qualified in the description in which it occurs. Where it occurs in descriptions of succeeding items it shall mean the same as in the first description concerned. Where it occurs in brackets it shall mean the whole of the preceding description which is contained within the appropriate brackets. Where it is underlined it shall mean the whole of that part of the preceding description which is underlined.

The full titles of the Standards referred to in this document are as follows:

BS	- British Standards
IEC	- International Electrotechnical Commission
IEE	- Institution of Electrical Engineers
ISO	- International for Standardization Organization
CIE	- International Standard on Illumination
EN	- European Committees for Standardization
CECC	- European Committee for Electrotechnical Standardization
DIN	- Deutsches Institut für Normung
KEBS	- Kenya Bureau of Standards

**A****ALTERATIONS TO TEXT ETC.**

Any unauthorised alteration or qualification made to the text of this document may cause the tender to be disqualified and will, in any case, be ignored.

Each item in the Bills of Quantities must be priced and tenders containing Lump Sums to cover groups of work must be broken down to show the price of each item before they are accepted. Lump Sums to cover any items of Preliminaries shall be broken down if so required by the Engineer.

**B****DEFINITION OF TERMS****(i) "SELECTED, DIRECTED, APPROVED", ETC**

Wherever the words "Selected", "as directed", "as required" or words of similar meanings are used in the Bills of Quantities, it is to be understood that the selections, direction or requirements of the Engineer are intended. Similarly, the words "approved" "satisfactory" or other synonymous words shall mean "approved by" or "satisfactory to" the Architect and the Engineer's approval must first be obtained before the materials are ordered or the works to which the words refer are put in hand.

**(ii) "NECESSARY, PROPER" ETC.**

Wherever the words "necessary", "proper" or words of similar meaning are used in these Bills of Quantities with respect to the extent, conduct, character or works described, it is to be understood that they shall mean that the said works shall be executed to the extent, must be conducted in a manner or be of a character which is "necessary" or "proper" in the opinion of the Engineer.

**(iii) SINGULAR AND PLURAL**

Words importing the singular only wherever used hereinafter and in all contract Documents shall also include the plural and vice versa where the context requires.

**(iv) EMPLOYER**

The Employer is Ministry of Health P.O. Box P.O Box 30016-00100, Nairobi, Kenya. The terms "Employer" and "Client" wherever used in these Contract document shall be synonymous.

**(v) ARCHITECT**

The term "Architect" shall be deemed to mean the firm of Messrs Schon and Associates P.O Box 38601 - 00100 Nairobi, Kenya

**(vi) CIVIL / STRUCTURAL ENGINEER**

The term "The Engineer" shall be deemed to mean the firm of Messrs. Schon and Associates P.O.Box 38601 - 00100, Nairobi, Kenya.



**(vii) ELECTRICAL & MECHANICAL ENGINEER**

The term "The Engineer" shall be deemed to mean the firm of Messrs. Schon and Associates P. O. Box 38601 -00100,Nairobi, Kenya.

**(viii) QUANTITY SURVEYOR**

The term "The Quantity Surveyor" shall be deemed to mean the firm of Messrs Schon and Associates, P.O. Box 38601 - 00100, Nairobi, Kenya.

**(ix) MAIN CONTRACTOR**

The term "Main Contractor" shall be deemed to mean the person or persons, partnership, firm or company whose tender for the Main Contract works has been accepted, and who has or have signed the Main Contract and shall include his or their heirs, executors, administrator, assignees, successors and duly appointed representatives.

**(x) SUB-CONTRACTOR**

The term "Subcontractor" shall be deemed to mean the person or persons, partnership firm or company who's tender for this work has been accepted and who has or have signed this Sub-Contract and shall include his or their heirs, executors, administrator, assignees, successors and duly appointed representatives.

**A****SITE**

The site of the Proposed Kisii cancer centre is in Kisii County, Kenya On plot LR No. ....

The Tenderer is recommended to visit the site and if unable to locate he shall apply to the Engineer for directions. The Tenderer shall be deemed to have examined and fully acquainted himself with the site and its nature and position, means of access, existing water and electricity supplies, etc. and make all necessary allowances and provisions for overcoming any difficulties which may arise therefrom as no claim for lack of knowledge in this or any other respect will be allowed.

No claims will be allowed for travelling or any other expenses which may have been incurred by the Sub-Contractor in visiting the site or preparing the tender for the Works.

**B****PRICING OF PRELIMINARIES AND BILLS OF QUANTITIES**

Wherever in the Tenderer's priced Preliminaries and Bills of Quantities no price appears against an item, the value of such item shall be deemed to be included in his rates for the other items which have been priced by him.

**C****FORM OF SUB-CONTRACT**

- (i) The successful Tenderer will be appointed as nominated Sub-Contractor to the Main Contract under **Clause No. 5.2 of the conditions of Contract for Building and Engineering Works Designed by the Employer (Second Edition (2017) published by International Federation of Consulting Engineers (FIDIC).**
- (ii) He will be required to enter into a Sub-Contract with the Contractor indemnifying him against the same liabilities in respect of the Sub-Contract as those for which the Contractor is liable to indemnify the Employer under this contract.
- (iii) The Nominated Sub-Contractor will be required to enter into a written Sub-Contract Agreement with the Main Contractor on the latest edition of the ***FIDIC Conditions of sub-contract for construction for building and engineering works designed by the employer***, a signed copy of which must be deposited with the Engineer.
- (iv) Copies of the Main Contract Agreement, Conditions of Contract, Bills of Quantities for the Main Contract, Form of Bond, Drawings and the General Specification are available for inspection at the offices of the Engineer on any working day until the time appointed for the submission of the tenders.
- (v) If the Tenderer considers that compliance with any of the Condition of Sub-Contract of which the headings are set out hereunder involves him in expense which is not included elsewhere in his prices he shall set down opposite any such condition the value he attaches thereto. The Clause headings of the Schedule of Conditions are set out hereunder but do not in any way affect or restrict the full meaning of the Conditions as printed.

## Clauses

1. Sub-Contract Sum
2. Notice of the Main Contract to the Sub-Contractor
3. Execution of the Sub-Contract Works
4. Sub-Contractor's liability under incorporated provisions of the Main Contract
5. Insurance against injury to persons and property
6. Damage by Fire
7. Policies of Insurance
8. Variations, etc
9. Completion
10. Defects, shrinkages, etc
11. Sub-Contract Sum - Valuation of Variations
12. Certificate and Payments
13. Interim Payments to the Sub-Contractor
14. Retention Money
15. Dispute as to Certificate
16. Right of Sub-Contractor to suspend execution of Sub-Contract Works
17. Special Interim Payment
18. Final Payment to the Sub-Contractor
19. Sub-Contractor's claim to Rights and Benefits under the Main Contract
20. Contractor's right to deduction or set off
21. Right of Access of Contractor and Architect
22. Subletting of Sub-Contract Works
23. Provisions of Water etc for Sub-Contract Works
24. Temporary workshops etc
25. Sub-Contractor's use of scaffolding
26. Contractor and Sub-Contractor not to make wrongful use of or interference with the property of the other
27. Plant, tools etc of Sub-Contractor
28. Determination of this Sub-Contract by the Contractor
29. Determination of this Main Contract
30. Wages and Conditions
31. Bond
32. Fluctuations in Duties and Exchange Rates
33. Arbitration

Carried to Collection     USD.

**A PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO THE SUB – CONTRACT AGREEMENT.**

The following are the insertions to be made in the Appendix to the Sub-Contract Agreement:-

Clause 4.2	Sub contract performance security	10% of Contract Sum
Clause 8.1	Commencement of sub-contract works	To be advised
Clause 8.2	Sub – contract time for completion	To be advised
Clause 11.2	Sub contract defects notification period	Twelve (12) months
Clause 14.2	Sub – contract advance payment	To be advised
Clause 14.6	Sub – contract payments	To be advised

**B COMPLETION PERIOD**

The Date of Completion for the Sub-Contract will be the same as the Date of Completion for the Main Contract.

Carried to Collection USD.

**A                    BOND & STAMP CHARGES**

All tenderers will submit the name of an approved Surety who will be willing to be bound to the Main Contractor in an amount as required in the Main Contract Conditions. The Sub-Contractor shall allow for payment of all stamp charges in connection with Surety Bond and Sub-Contract Agreement.

**B                    LICENSING & SUBLETTING**

The tenderers for this Sub-Contract must be fully licensed Contractors under the Ministry of Public Works Regulations and must be currently registered as approved Mechanical Contractors Category A with the Contract and Quantities Branch of the Ministry. They must also be registered under the Ministry of Energy as Electrical Contractors as Class A licence. No sub-letting or assignment by non-registered firms will be authorised by the Architect.

**C                    PROGRAMME**

All Sub-Contract Works must be programmed and co-ordinated with the approval of the Main Contractor and the Architect. The successful tenderer will be required to submit a programme within two (2) weeks of the acceptance of his tender to Main Contract and to the Architect for approval.

The works are associated with supply and installation of electrical systems, transport to site, offloading, labour installation, fixing, connecting, commissioning and delivering up clean and in working order in every detail.

**D                    SANITATION OF THE WORKS**

The sanitation of the Sub-Contract Works shall be maintained by the Sub-Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the Architect.

Carried to Collection USD.

**A****ATTENDANCE BY MAIN CONTRACTOR**

The Main Contractor shall be responsible for Nominated Subcontractors in every respect and in particular it shall be the Main Contractor's responsibility to ensure that each Sub-Contractor commences and completes the work in such a manner and is ready on the site with his materials, labour and special plant at such time so as to conform with the completion programme, as previously specified, and to ensure satisfactory progress.

The Main Contractor shall accept liability for and bear the cost of General and Specific Attendance on Nominated Sub-Contractors which shall be deemed to include for:

- Allowing the use of standing scaffolding, retention of all scaffolding until such time as all relevant Sub-Contract works are complete and removal of all scaffolding on completion.
- Providing of space for office accommodation, and for storage of plant and materials; use of sanitary accommodation; the supply of all necessary water, and lighting; and clearing away all rubbish with reasonable assistance from the Nominated Sub-Contractor.

The Main Contractor shall also accept liability for and bear the cost of Special Attendance of Nominated Sub-Contractors which shall include for one or more of the following:

- Unloading, storing, hoisting, and placing in position, providing power, provision of special scaffolding.
- Cutting away for and making good after the work as may be required will be measured and valued separately by the Quantity Surveyor.

Carried to Collection     USD.

**B****PAYMENTS**

The Nominated Sub-Contractor will be entitled to payment from time to time for materials and/or any work carried out under this Sub-Contract, the value of which shall be determined by the Consultant Engineer and included in Payment Certificate to the Main Contractor under the Main Contract. The Nominated Sub-Contractor will be informed by the Quantity Surveyor when such payments are certified and should he not receive from the Main Contractor the payment due within the period stipulated in the Conditions of Sub-Contract he should immediately report to the Architect and the Engineer.

**C****MATERIALS ON SITE**

Unless otherwise agreed by the Architect all materials relating to this Sub-Contract must be delivered to the site before payment for such items may be certified.

Carried to Collection USD.

**A                      RETENTION**

Ten Percent (10%) of the value of work done will be held as retention in the valuation for each Interim Payment for this Sub-Contract. The first moiety of five percent (5%) retention money will be released on practical completion of the Sub-Contract works and the second moiety will be released on satisfactory completion of the maintenance works at the end of the six months Defects Liability Period.

**B                      LIQUIDATED & ASCERTAINED DAMAGES**

If the Nominated Sub-Contractor fails to complete the works tendered for or any section of it within the agreed period of completion or within any extension period granted by the Architect, he will be required to allow or pay to the Main Contractor a sum equivalent to any loss or damages suffered or incurred to the Main Contractor caused by or resulting from such failure.

**C                      DEFECTS**

The Nominated Sub-Contractor shall be liable to make good at his own cost all defects or other faults occurring in the Sub-Contract works within a period of six months from date completion as defined herein and shall bear any expenses reasonably incurred by the Main Contractor as a direct consequence of such defects. Provided that such defects have not been caused as a result of defective workmanship or material for which the Main Contractor is responsible. Any work or section of the Sub-Contract works which are badly affected by such defects, etc and in the opinion of the Architect cannot be satisfactorily made good by repairs, etc shall be carried out again by the Nominated Sub-Contractor at his own cost within a reasonable time of being required to do so in writing by the Architect or the Main Contractor.

Carried to Collection USD.



**A**

**UNAVOIDABLE DELAYS IN IMPORTED MATERIALS**

During the progress of the works where delays are anticipated in obtaining imported materials or locally manufactured materials requiring imported components, the Architect should be informed in writing as early as possible. An application for extension(s) of time must also be made in writing at the same time. Where the accepted Sub-Contractor can fully substantiate with documentary evidence that every effort has been made and the correct procedures followed for obtaining the materials or where applicable the import licences and the delays are unavoidable, the Architect will, if satisfied, grant such extension(s) of time. Liquidated and ascertained Damages shall then not be imposed for such delays. The successful Sub-Contractor shall, however be expected to place appropriate orders for all imported and locally manufactured materials immediately after the signing of the Sub-Contract Agreement in order to minimise the risk of delays caused through shortages of materials. The Tenderer should state below in the space provided any materials which in his opinion it is anticipated may be in short supply and likely to cause such delays.

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Carried to Collection USD.

**A PURCHASE OF BUILDING MATERIALS IN ADVANCE**

The Sub-Contractor will be required, immediately after the signing of the Sub-Contract to purchase in advance as much as possible of the building material requirements of the Sub-Contract in order to avoid possible future price increase and shortages. To qualify for inclusion in interim payment certificates all such materials shall be suitably stored on site or in an approved bonded warehouse adequately insured against theft and damage for the period of the storage, all to the approval of the Architect. Where any material is not immediately available the appropriate orders must be placed as soon as possible after the signing of the Sub-Contract and all appropriate measures must be taken to secure early delivery of such materials.

**B SITE MEETINGS**

The Nominated Sub-Contractor or his authorised representative shall attend site meetings whenever the Architect requires and the Tender Price will be deemed to include for all expenses in connection with such visits.

**C DAMAGE TO SUB-CONTRACT WORKS, ETC.**

The Nominated Sub-Contractor shall take every precaution to prevent damage to all existing property on site including the Main Contract Works and will be responsible for and shall pay for the making good of any such damage to the satisfaction of the Architect.

**D SECURITY**

Maximum precautions must be exercised to uphold existing security in the vicinity of the Works. The Sub-Contractor shall comply with all instructions issued by the Employer, Architect or the Main Contractor with regard to the upholding of security arrangements and will be held responsible for any breach of security by his own, his suppliers' or others' employees engaged directly or indirectly on the Sub-Contract Works.

Carried to Collection      USD.

**A                    "OUT OF BOUNDS" AREAS**

The movement of the Sub-Contractor's men must be confined strictly to the works and the Sub-Contractor's working and Storage Areas. Certain areas within and adjacent to the site and to be identified later, will be designated "Out of Bounds" areas for the Sub-Contractor's employees and the Sub-Contractor will be required to comply strictly with this rule.

**B                    WORKING AND STORAGE SPACE**

The Sub-Contractor shall provide at his own risk and cost safe storage and custody of materials for the Works. Working and storage space for the Sub-Contractor's materials plant and workmen will be allotted by the Main Contractor within the limits of the area made available to him for this purpose. All activities pertaining to the works will be confined as far as is possible to the specified area or areas. No such activities will be carried out outside the area(s) without the specific authority of the Architect. The allotted area is located within an existing building and the Sub-Contractor will be required to erect temporary barricades to the approval of the Architect and clear them away when no longer required. No materials shall be stored or stacked on suspended slabs without prior approval of the Architect.

Carried to Collection USD.

**A****GOVERNMENT ACTS REGARDING WORK PEOPLE, ETC.**

Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of labour and other matters related to the execution of the works. In particular, the Sub-Contractor's attention is drawn to the provisions of the Factories Act Revised Edition 1972, and his tender must include for all costs arising or resulting from compliance with any Act, Order or Regulation relating to Insurance's, Pensions and Holidays for work people or to the safety, health or welfare of work people. The Sub-Contractor must make himself fully acquainted with current Acts and Regulations, including Police Regulations regarding the movement, housing, security and control of labour camps, passes for transport, etc. It is most essential that the Sub-Contractor, before tendering, shall obtain from the relevant Authority the fullest information regarding all such regulations and/or restrictions which may affect the organisation of the works, supply and control of labour, etc. and allow accordingly in his tender. No claim in respect of want of knowledge in this connection will be entertained.

Particular attention is drawn to the Rules published in Legal Notice 179, dated 2nd June 1979. (Building Operations and Works of Architecting Construction).

**B****SAMPLES**

The Sub-Contractor shall furnish at his own cost any sample of materials or workmanship required by the Architect / the Engineer for his approval or rejection and any further samples in the case of rejection until such samples are approved by the Architect / Engineer. The Architect / Engineer may reject any materials or workmanship not in his opinion up to approved samples. The Architect / Engineer shall arrange for the testing of such materials as he may at his discretion deem desirable. The testing shall be made at the expense of the Sub-Contractor. The procedure for submitting samples of materials for testing and the method of marking for identification shall be as laid down by the Architect. The Sub-Contractor shall allow in his tender for all such samples and tests.

Carried to Collection USD.

**A**                    **INSURANCE**

The Sub-Contractor shall during the execution of the works insure himself and keep himself insured against all liability arising under the Workmen's Compensation Act or any amendment thereto for accidents to workmen employed by him on the said Works and shall indemnify the Employer in respect of any such accident to any such workmen. The Sub-Contractor shall further insure himself and keep himself insured against all liability arising from all Third Party Claims arising from accidents and he shall indemnify the Employer in respect of all claims, which may be made against him in respect of any such accidents. No payment on account of the work executed will be made to the Sub-Contractor until he has satisfied the Architect either by the production of an Insurance Policy or an Insurance Certificate that the foregoing provisions have been complied with in all respects. Thereafter the Architect shall from time to time ascertain that premiums are duly paid up by the Sub-Contractor who shall if called upon to do so, produce receipted premium renewals for the Architect's inspection.

**B**                    **METHOD OF MEASUREMENT**

These Bills of Quantities have been prepared in accordance with the principles of the "Standard Method of Measurement of Building Works for East Africa", unless otherwise expressly stated.

**A**                    **MANUFACTURERS' OR PROPRIETARY NAMES**

Where Manufacturer's or Proprietary names or catalogues number are mentioned in these Bills of Quantities the reference is intended as a guide to the type of article or quality of material required. The Sub-Contractor may use any article or material equal in type or quality to those herein described subject to the prior approval of the Engineer and at his absolute discretion. The onus of proof as to equivalent quality will rest with the Sub-Contractor, whose tender will be deemed to include for the makes described in the Bills of Quantities.

Carried to Collection USD.

**A CLAIMS FOR EXTRAS**

The Sub-Contractor shall submit to the Architect and Contractor claims for any work or circumstances on account of which he may consider that he is entitled to extra payment within seven days from the time of the commencement of such work or occurrence of such circumstances. Any such claim must be in writing and accompanied by full particulars and must state under which provision of the Sub-Contract it is claimed so that payment shall be made.

**B PRIME COST AND PROVISIONAL SUMS**

The terms "Provisional Sum" and "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall be deemed to have the same meaning as defined in the General Preliminaries to the Main Contract Bills. The adjustment of these Sums shall similarly be dealt as described in the above General Preliminaries.

**C LABOUR CAMPS**

The Sub-Contractor will be permitted to house labour on the site and must make his own arrangements to construct the houses. Cooking and eating facilities for workers will be permitted on the site.

**D WORKING AND RECORD DRAWINGS**

The Sub-Contractor shall prepare all necessary sets of schematic diagrams, working drawings, etc required by the Engineer and shall also prepare and provide sets of Records Drawings together with instruction charts, maintenance manuals, etc all as specified in the attached General Specification.

Carried to Collection USD.

**A                    FIRM PRICE SUB-CONTRACT**

Unless otherwise specifically stated in the Preliminaries, this is a Firm Price Sub-Contract and the Sub-Contractor must allow in his tender for any increase in cost of labour and/or materials during the currency of the Sub-Contract. No claim for increased costs will be entertained except for increased costs, which may arise from fluctuations in Duties, and Exchange Rates defined in Clause 32 of the Sub-Contract Agreement.

**B                    WATER AND ELECTRICITY FOR THE WORKS**

These will be made available by the Main Contractor but the Sub-Contractor will be liable for the cost of any water or electric current used and any installations provided especially for his use.

**C                    PROVISIONAL WORK**

Quantities given as "Provisional" in these Bills of Quantities shall not be held to gauge or limit the amount or description of the work to be executed by the Sub-Contractor. However, the value thereof shall be deducted from the Sub-Contract Sum and the value of the work ordered by the Architect and executed thereunder shall be ascertained as provided by the relevant Clause of the Conditions of Sub-Contract. All "Provisional" and other work liable to adjustment under this Sub-Contract shall be left uncovered for a reasonable time to allow measurements needed for such adjustment to be taken by the Engineer and Quantity Surveyor. Immediately the work is ready for measuring, the Sub-Contractor shall give notice to the Architect. If the Sub-Contractor makes default in these respects, he shall, if the Architect so directs, uncover the work to enable measurements to be taken and afterwards reinstate all at his own expense.

**D                    CASING UP, PROTECTING AND HOARDING**

The Sub-Contractor shall be responsible for casing up, protecting or otherwise to the satisfaction of the Architect all parts of the Sub-Contract Works liable to damage or to cause injury and for removing such protection and making good at completion of the Works. The Sub-Contractor shall take into account that the works shall be carried out concurrently with other trade works and the safety of staff shall remain the responsibility of the Sub-Contractor during the course of the Sub-Contract.

**E                    WORKS TO BE DELIVERED UP CLEAN**

On completion of the Works, the Site and the Works shall be cleared of all plant, scaffolding, rubbish and unused materials and shall be delivered up in a clean and perfect condition in every respect to the satisfaction of the Architect.

Carried to Collection    USD.

**B**

**ADDITIONAL ITEMS**

Any additional item(s) which the Tenderer may wish to price separately and which he considers has not been included in the foregoing Conditions, Specification and/or Bills of Quantities.

Description

**C**

**EXISTING INSTALLATIONS**

All items, which have been disconnected and removed from the existing installations in accordance with the Technical Specifications, shall remain the property of the Employer. These items shall be packaged in waterproof boxes and kept in storage as directed by the Employer. The Employer may however opt to surrender the same to the Sub-Contractor at a salvage value, which shall mutually be agreed between the Employer and The Sub-Contractor.

Carried to Collection    USD.



**SECTION 2****PRELIMINARIES COLLECTION**

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**PART 3:**

**GENERAL REQUIREMENTS**

**KISII CANCER CENTRE, KISII COUNTY, KENYA**

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### **3 GENERAL REQUIREMENTS**

#### **3.1 DESCRIPTION OF THE MAIN CONTRACT WORKS**

The Proposed Kisii Cancer Centre is located in Kisii Country, Kenya.  
The project shall include infrastructure and civil works.

The LPG installations shall be to the local and international standards and best engineering practice to provide systems that are operational, efficient, optimal, buildable, maintainable and cost effective. The services included in this tender package include:

This tender package is for LPG Installation and shall comprise of:

- Ground LPG bulk storage tank;
- LPG distribution pipework;
- Safety devices, etc.

Drawings of the development may be inspected at the offices of the Architect and the Engineer provided this is done by appointment.

The services drawings are provided with the Specification - as per the Schedule of Drawings.

The above sub-contract works shall be carried out by a nominated sub-contractor and as such will be required to work in close liaison with the main contractor and all other sub-contractors. It is essential that complete co-ordination is maintained at all times to enable the timely completion, within the specified contract periods, of the Works. The sub-contractors will be required to agree with the main contractor the full working programme for all elements of the contract. Certain areas are more critical to the completion than others as certain items of plant and equipment, which will be required to be installed and commissioned, may experience long delivery dates. The specialised sub-contractors must identify these areas and agree on dates for completion with the main contractor and the Engineer so that no delays to the main contractor and other specialists are caused.

This section of the contract relates to the LPG installations.

#### **3.2 SCOPE OF THE WORKS**

The works to be carried out under this section of the contract shall include LPG installations including all the necessary accessories. These items, together with other contract requirements, have been further expanded under later sections of the Specification.

- (i) Design;
- (ii) Manufacture;
- (iii) Supply;
- (iv) Delivery to site;
- (v) Installation;
- (vi) Works testing;
- (vii) Commissioning;
- (viii) Performance testing;
- (ix) Making good any defects that occur during the defect liability period;
- (x) Provision of 'As Installed' drawings and Maintenance and Operation documents;
- (xi) The whole of the labour and all materials necessary to form a complete installation (whether or not all the necessary components are indicated).

The sub-contractor shall supply all labour, materials, plant, equipment and components necessary and execute the services installations described above and set out in this section of the Specifications, Bills of Quantities and the accompanying Drawings and in accordance with the general specifications herewith.

Unless otherwise indicated within this Specification, all equipment and materials to be installed shall be new and the Contractor shall ensure that all equipment can be installed in the allotted spaces and maintain adequate access for maintenance and repair. All equipment shall be installed in accordance with the manufacturers written instructions.

### 3.3 EXTENT OF SUB-CONTRACT

The sub-contract shall include, in addition to all items scheduled above, for the design, manufacture, inspection and testing, packing for shipment, insurance, shipping, delivery to site, unloading and all other charges, complete erection, tests on completion, setting to work, finishing, painting and maintenance for a period of twelve calendar months, all to the satisfaction of the Architect and Engineer, of the items of Plant and Equipment described or implied within this Specification and shown on the relevant Drawings.

**The sub – contract is exempt from all taxes and duties imposed by Kenya Revenue Authority.**

The proposed installations within the new facilities are required to be complete in all respects as specified herein, and shall include all items of equipment, materials, accessories, fittings, supports, etc. necessary whether such items are specifically referred to in the contract or not. The sub-contractor shall be deemed to have included in his tender price for all items necessary such that the installations are complete in all respects and left in a satisfactory working order.

The sub-contractor shall provide fully detailed drawings of the entire installation together with layouts of all civil and building works etc. required to accommodate/house the plant and equipment, these layout drawings and details being related to the existing layouts as may be necessary. The drawings shall be submitted for approval within three weeks of the award of the sub-contract such that the Architect and Engineer can be made aware of all requirements. It shall be fully the responsibility of the sub-contractor to liaise with the main Contractor to ensure all civil and builder's works required for this sub-contract are prepared and/or provided to suit the programme of this contract. No claims will be entertained.

All modifications to existing layouts and all proposed new layouts and structures shall be subject to the full approval of the Architect, Engineer and the Employer.

### 3.4 SUB-CONTRACT PERIOD AND PROGRAMME

The sub-contractor shall provide within the stipulated period after the acceptance of his Tender, a complete programme for the execution of this contract. This programme shall indicate the expected dates of the commencement and completion of the following specialist contract works: -

- (i) Submission of Working Drawings for approval;
- (ii) Placing of orders with other specialists or sub-contractors for Plant and Equipment to be incorporated in the Works;
- (iii) Receipt by the sub-contractor from other specialist or sub-contractor's of Plant to be incorporated in the Works;
- (iv) Manufacture by the sub-contractor of Plant to be incorporated in the Works;
- (v) Inspection and testing by the Engineer;
- (vi) Shipment from country of supply;
- (vii) Delivery to Site;
- (viii) Erection on Site, details for all activities;
- (ix) Tests on Completion. Operations shall be commenced when instructed and shall be carried forward to completion with the greatest possible expediency, to the satisfaction of the Architect, and Engineer, in accordance with the Programme. The sub-contractors

programme shall be agreed with the main contractor, as the sub-contractor shall adhere fully to the requirements and timing of the agreed main contractors programme.

### **3.5 DRAWINGS ACCOMPANYING THE TENDER DOCUMENTS**

Drawings accompanying this Specification indicate generally the arrangement of the installations and are for assistance in tendering. The position of equipment and apparatus shown thereon are approximate only, the exact positions, together with the actual runs of ductwork, trunking and conduit etc., will be agreed with the Architect, the Engineer and the Employer before commencement of work. It shall be deemed that the prices entered by the sub-contractor include for the repositioning, of the various services, to meet the above requirements. No claims will be entertained.

The sub-contractor shall satisfy himself as to correctness of all Drawings and measurements particularly the dimensions of the works already constructed on site. If the sub-contractor finds any discrepancy in the Drawings or between the Drawings and the Specification or between the constructed works and the Drawings he shall immediately refer the same to the Architect and Engineer who will decide which shall be followed. Figured dimensions shall be taken in preference to the scale mentioned on or attached to any Drawings. Details shown on Drawings shall be read in conjunction with items in the Specification.

Copies of all Drawings and of the Specification will be furnished free of cost to the sub-contractor for his own use.

The Architect will furnish to the sub-contractor within a reasonable time after the receipt by the Architect of a written request for the same, any details which, in the opinion of the Architect are necessary for the execution of any part of the work such request to be made only within a reasonable time before it is necessary to execute such work in order to fulfil the contract. One copy of the Drawings, details and Specification shall be kept on the site until the completion of the sub-contract and the Architect shall at all reasonable times have access to the same. All copies of Drawings and details shall be returned by the sub-contractor to the Architect on the completion of the Contract.

Additional Drawings will be issued by the Engineer to suit the design requirements of the works these Drawings being issued either during or after the tender period as may be required or necessary. These drawings will supplement the details contained within the Specification and Bills of Quantities and the tenderer shall be deemed to have taken these into account in his pricing. Where the sub-contractor can demonstrate that the Drawings relate to new or additional items these new or additional items shall be priced to approval and shall be in accordance with the sub-contract rates and prices.

### **3.6 SUB-CONTRACT WORKING DRAWINGS**

The sub-contractor shall prepare fully detailed Working Drawings for all items of plant, equipment and accessories required for installation under this section of the contract. Two copies of each Drawing shall be forwarded to the Engineer for approval and or comments. One copy will be returned stamped "approved" or "not-approved". Where Drawings require further information and/or modifications to meet the comments made by the Engineer they shall be re-submitted, again in duplicate, for approval.

When Drawings have been approved two further copies shall be forwarded to the Engineer, together with copies to the Architect, site and the Employer.

Drawings, and, where relevant, calculations in respect of the following shall be prepared by the sub-contractor and submitted to the Engineer for his approval commencing within ten (10) days from acceptance of the tender.

All drawings shall be to scale and fully detailed and all-important dimensions shall be given and the material of which each part is to be constructed shall be indicated.

During progress of the building works, the sub-contractor shall make all necessary checks on site to make certain the various Services can be installed as specified and shown on the approved Drawings.

Where such works cannot be so installed, this must be immediately brought to the notice of the Architect and Engineer prior to the progress of such works.

The Engineer, in conjunction with the Architect and the Employer, will check and return the Drawings submitted for approval within a reasonable period, not exceeding fourteen (14) days from receipt.

The layouts of plant and equipment are for general guidance only. The sub-contractor shall assess the requirements immediately and prepare a plant layout for approval, the required liaison being maintained with other specialists, sub-contractors and main contractor such that an agreed layout is submitted for approval.

### **3.7 RECORD DRAWINGS**

As soon as the works are complete and all tests have been satisfactorily carried out, the sub-contractor shall hand to Architect/Engineer two sets of Record Drawings, together with one set of negatives of these record drawings, showing the works as finally installed. These drawings shall be prepared on approved transparent plastic material in black ink or as approved by the Architect/Engineer. The certificate, of making good defects, will not be issued until this condition has been complied with. Record Drawings are in addition to detailed Working Drawings and shall show all cable routes, circuits, trunking, conduits, plant, trenches, ductwork and ducts etc., together with the entire Kitchen, LPG and Laundry Equipment as finally installed.

The Architect will provide the sub-contractor with a set of Contract Drawings (in addition to the two sets provided for the sub-contractor's site and office use), which shall be maintained by the sub-contractor's representative on site and which shall be used for recording contract variations as they occur. This set of Drawings shall be available for the Architect's inspection on site, and shall be kept up to date.

The cost of the preparation and submission of the above Contract and Record Drawings shall be deemed to be included within the sub-contractor's prices.

### **3.8 MAINTENANCE MANUALS**

Upon Practical Completion of the Contract Works, the Contractor shall furnish the Engineer four copies of a Maintenance Manual relating to the installation forming part of all of the Contract Works.

The manual shall be loose-leaf type, International A4 size with stiff covers and cloth bound. It may be in several volumes and shall be sub-divided into sections, each section covering one Engineering service system. It shall have a ready means of reference and a detailed index.

There shall be a separate volume dealing with Kitchen, LPG and Laundry Equipment installation where such installations are included in the Contract Works.

The manual shall contain full operating and maintenance instructions for each item of equipment, plant and apparatus set out in a form dealing systematically with each system. It shall include as may be applicable to the Contract Works the following and any other items listed in the text of the Specifications:

System Description shall include but not limited to:

- 1) Plant;
- 2) Valve Operation;
- 3) Switch Operation;
- 4) Procedure of Fault Finding;
- 5) Emergency Procedures;
- 6) Lubrication Requirements;
- 7) Maintenance and Servicing Periods and Procedures;



- 8) Colour Coding Legend for all Services;
- 9) Schematic and Writing Diagrams of Plant and Apparatus;
- 10) Record Drawings, true to scale, folded to International A4 size;
- 11) Lists of Primary and Secondary Spares.

The manual is to be specially prepared for the Contract Works and manufacturer's standard descriptive literature and plant operating instruction cards will not be accepted for inclusion unless exceptionally approved by the Engineer. The Contractor shall, however, affix such cards, if suitable, adjacent to plant and apparatus. One spare set of all such cards shall be furnished to the Engineer.

### **3.9 BUILDER'S WORK AND CIVIL WORKS**

All Builder's Work and Civil Works incidental to this section of the contract such as the cutting of holes in walls and floors, the provision of foundations for plant and machinery, the building in of lifting beams, breaking into the existing plant rooms and duct systems, changes in levels the protection of existing structures, painting and the re-instatement of the plant rooms and associated areas to their original standard etc shall be the responsibility of the main contractor. The sub-contractor shall however be fully responsible for the preparation of all such details that relate to this sub-contract works, the details being subject to approval by the Architect and Engineer prior to submission to the main Contractor for action. Other items such as the fixing of brackets, cable and ductwork ducts and trenching, making good, etc shall be carried out by the sub-contractor to suit the installation of all the services.

It is the sub-contractor's sole responsibility to ensure that all holes and chases etc are in the required position and that any additional ducts, holes and chases necessary for the erection of the installations in situ concrete walls, floor slabs etc., are included in the early stages of construction as appropriate. The sub-contractor shall furnish the Architect, Engineer and main Contractor with all information as to where foundations, brackets and fixings are required and shall ensure that such work is done in accordance with such information.

The sub-contractor shall include in his tender for all supports, fixings, the plugging of all walls, ceilings and floors to facilitate the fixing of the pipework, accessories, and all other portions of the Kitchen, LPG and Laundry Equipment installations. Any purpose made fixing brackets shall also be provided and installed by the sub-contractor, including escutcheon plates and the like.

The sub-contractor is to set out at the earliest opportunity the position of all holes necessary for the passage of ducts, pipe-work and conduits or otherwise required in connection with his work, and should additional holes or openings be required due to failure of the sub-contractor to fulfil the conditions of this clause, then he must arrange for the main Contractor to make such openings, etc at his own expense. The sub-contractor is not to arrange for the cutting of any holes or openings unless specifically authorised to do so and should he do so without approval, he will become liable for any damage to the building or fittings.

The sub-contractor shall supply and install approved pipework support brackets and hangers. It shall be deemed that the prices entered include for any special requirements and that the sub-contractor has visited the site during the tender period to ascertain all details.

The sub-contractor shall pay particular attention to the fixing and alignment of items. All items shall be installed square, true and perpendicular to floors i.e. as shown on Drawings and as may be required at site to the Engineers approval and to suit the existing and new services.

### **3.10 GUARANTEE**

The sub-contractor shall guarantee all work for a period of twelve months after acceptance by the Architect. In the event of a defect arising within the contract defects liability period which, in the opinion of the Architect, is due to faulty workmanship or materials, the sub-contractor shall, at his own expense,

make good such defects where instructed to do so, to the satisfaction of the Architect.

### **3.11 SETTING TO WORK**

The sub-contractor shall instruct the Employer's Maintenance Engineer or his representative on the operation and maintenance of the various components forming the Kitchen, LPG and Laundry Equipment installations and shall provide such drawings, diagrams and manuals to ensure the Maintenance Engineer or his representative is completely conversant with such installations.

The sub-contractor shall ensure that the Services Installations are left in complete safe working order and operating to the satisfaction of the Architect and the Engineer.

### **3.12 REGULATIONS AND STANDARDS**

The Installations must be carried out strictly in accordance with the following documents: -

#### Electrical Services

- (i) The current edition of the 'Regulations for the Electrical Equipment of Buildings' issued by the Institute of Electrical Engineers of Great Britain;
- (ii) Electrical Supply Authority;
- (iii) Relevant British Standard Specifications and Codes of Practice published by the British Institution (hereinafter referred to as B.S. and C.P. respectively);
- (iv) Regulations of the Government of Kenya;
- (v) Water Supply and Sewerage Authorities Regulations;
- (vi) Any other duly constituted authorities' regulations having jurisdiction over the works;
- (vii) The Specification and accompanying documentation and Drawings;
- (viii) The Working Drawings, produced by the sub-contractor and approved by the Architect/Engineer.

#### Mechanical Installations

- (i) The Kenya Bureau of Standards;
- (ii) Relevant British Standard Specifications and Codes of Practice published by the British Standard Institution (hereinafter referred to as B.S. and C.P. respectively);
- (iii) Regulations of the Government of Kenya;
- (iv) Water Supply and Sewerage Authorities Regulations;
- (v) Any other duly constituted authorities' regulations having jurisdiction over the works;
- (vi) The Specification and accompanying documentation and Drawings;
- (vii) The Working Drawings, produced by the sub-contractor and approved by the Architect/Engineer;
- (viii) The Loss Prevention Council Regulations.

The sub-contractor shall undertake all modifications demanded by the authorities in order to comply with the regulations, and produce all certificates, if any, for the authorities without extra charge.

### **3.13 QUALITY OF MATERIALS**

All materials, fittings and accessories are to be new and in accordance with the requirements of the current rules and regulations where such exist, and with the relevant British Standard Specification.

Uniformity of type and manufacture of fittings or accessories is to be preserved as far as practicable throughout the whole work.

Wherever in this specification the practice is adopted of specifying a particular item as 'similar' to that listed in a particular firm's catalogue, it is to be clearly understood that this is to indicate the type and quality of the equipment required. No attempt is being made to give preference to the equipment supplied by the firm whose catalogue is quoted.

Where particular manufacturers only are specified herein no alternative makes will be considered without

good reasons.

All materials shall be good quality, suitable for the purpose specified, and to the approval of the Architect and Engineer.

### **3.14 WORKMANSHIP**

The sub-contractor shall take into consideration, when pricing his tender, that there will be other sub-contractors working. Any disruptions to the existing services must therefore be kept to an absolute minimum, and in this respect the sub-contractor shall include in his prices for carrying out works outside normal operating hours as may be directed by the Architect or Engineer. No claim will be entertained where abnormal working hours are required to meet this requirement and completion of the works within the specified contract period.

The sub-contractor shall be fully responsible for the co-ordination of all services, both new and existing, and in this respect, he shall ascertain that the installation of the services will not foul other new or existing services. In all cases services through ducts etc. must be readily accessible for maintenance.

The sub-contractor shall be deemed to have included in his tender prices for locating switches, terminal points, ductwork, outlets and fixtures in positions and/or locations at least one metre, both horizontally and vertically from those positions indicated on the contract drawings. Within these limits no variations in the sub-contract sum will be made unless the work has already been executed in accordance with previously approved Working Drawings.

All trade work shall be carried out by tradesmen fully competent and qualified in their respective trades, and the entire installation shall be performed in a neat and workmanlike manner.

The sub-contractor shall take every precaution to avoid damage to all existing property including roads, paved walkways, grassed areas, landscaping, cables, drains and other services, and he will be held responsible for and shall make good all such damage arising at his own expense to the satisfaction of the Architect.

The sub-contractor will be responsible for the exact runs and placing of pipework, conduit, boxes, ductwork and accessories that are to be cast in concrete ceilings, floors, walls, columns and beams, and for the proper fixing of the pipework and accessories to the shuttering and the steel reinforcement work.

Where ductwork is to be concealed, the pipes etc shall be in an exact position relative to the finished plaster or such other finishes as may be applied to enable adequate cover to be applied.

Where services are run above the false ceilings the sub-contractor shall ensure that access to all services is readily available such that future maintenance can be carried out without difficulty. Full details shall be included on the Working Drawings such that the Architect and Engineer can give consideration to the sub-contractor's proposals.

### **3.15 LAYING OUT OF WORK**

The sub-contractor will be responsible for laying out his work and shall obtain all necessary information as may be required to carry out the work, and such information shall be obtained sufficiently in advance to avoid any possibility of delay to the works as a whole.

The sub-contractor shall be fully responsible, and shall inform himself of, the details of all work being carried out by the various trades on Site, particularly where such trades may interfere one with the other, or where co-ordination is necessary. No claims for extra costs will be met arising from omissions, oversights, or neglect in this regard.

The sub-contractor shall arrange for the supply, in advance of the delivery of the equipment, of all necessary foundation bolts, templates, nuts, plates, sleeves, anchorage, etc., as required and as may be

directed by the Engineer or Architect.

### **3.16 ERECTION AND CHECKING OF WORK**

The sub-contractor shall provide, and be solely responsible for, all skilled and unskilled labour, tools, lifting tackle and other equipment required for transport to the site, the handling and transport about the site and the erection of the plant and equipment.

As each part of the Works is erected, it shall be subject to approval by the Engineer.

All parts shall pass such tests on the site as required by the Architect and Engineer to prove compliance with the contract irrespective of any tests which may already have been carried out at the Manufacturer's Works. In particular all electrical pressure tests made at the Manufacturer's Works shall be repeated at voltages approved by the Engineer.

The sub-contractor shall supply and install all supports, fixings, brackets and similar items as may be necessary for the completion of the installation of the services as specified and as shown on the Drawings.

### **3.17 PERFORMANCE AND ACCEPTANCE TESTS ON SITE**

The sub-contractor shall give to the Engineer in writing at least five days notice of the date after which he will be ready to make the specified tests on completion of installation. Unless otherwise agreed the tests shall take place within seven days after the said date on such day or days as the Engineer shall in writing notify the sub-contractor. The tests shall be carried out under normal working conditions to the satisfaction of the Engineer and shall extend over such continuous periods as he may direct.

All skilled labour, supervision, apparatus, fuel for tests and instruments required for carrying out the tests efficiently will be the responsibility and at the expense of the sub-contractor. The accuracy of the instruments shall be demonstrated if required.

If any part of the plant or equipment fails to pass the specified tests, further tests of the said part shall, if required by the Engineer, be repeated. The sub-contractor shall, without delay, put in hand such modifications as are necessary to meet the requirements as described in the Contract and any expense which the Employer may have incurred by reason of such further tests shall be deducted from the sub-contract price.

Each completed system within the installation shall be tested as a whole under operating conditions to ensure that each component functions correctly in conjunction with the rest of the system.

### **3.18 TEST RECORDS**

The sub-contractor shall make all necessary records of the tests carried out, and when the tests have been successfully completed he shall provide the Architect and Engineer with test records and reports in a form to be agreed.

The LPG installation shall be deemed to be complete when the following obligations have been fulfilled by the sub-contractor: -

- (a) The satisfactory completion of the Performance and Acceptance Tests on Site;
- (b) Test records and reports have been received;
- (c) The handing over of two preliminary sets of Record Drawings. The supply of these preliminary Record Drawings shall not relieve the sub-contractor of his obligations to supply Record Drawings in accordance with the requirements of the Specification;
- (d) The issue of an acceptance certificate by the City Council for all works associated with the LPG installation systems as may be necessary and required;

### **3.19 DUST, INSECT AND VERMIN PROOFING**

All equipment, which is affected by ingress of dust, shall be effectively dust proofed and also vermin proofed where no protection is afforded in its normal manufactured form. All materials used shall be in general resistant to attack by insects, microbiological life or other local fauna and such materials shall be to the approval of the Architect and Engineer.

### **3.20 PAINTING AND FINISHING**

All mechanical and electrical equipment installed under this sub-contract shall be painted or otherwise finished to approval in accordance with B.S. Code for Standard Colours including all pipework and ductwork, etc. Such finish shall be entirely compatible with the conditions of heat, humidity, exposure to the weather, and other relevant factors arising from the materials, location and condition of operation of the equipment.

The Architect may request examples of paint finishes, the cost of which shall be deemed to have been included within the tendered prices for all works.

All final painting of equipment, fixtures, and accessories shall be carried out by the sub-contractor, except where it is the usual practice of the manufacturer of items of plant, equipment, and switchgear etc to apply a high standard of protective finishing paintwork in the shop before despatch. This will be acceptable provided any damage to paintwork that occurs before the plant is taken over is made good by the sub-contractor at his own costs.

The interiors of electrical switchboards, control panels, and similar items, where supplied by the sub-contractor shall be finished in approved enamel and shall comply with the appropriate B.S. for enamel finish. The exteriors of such panels and enclosures shall be of British Standard Specification colour as specified by the Architect.

### **3.21 LABELS**

All items of plant, valves, tee's etc shall be neatly and clearly labelled externally with identification marks corresponding with those on Drawings or in Specifications. Final details shall be agreed.

Identification labels shall be of laminated plastic material engraved, black on white, with no less than 6mm "Lino" style letters and shall be fixed on or adjacent to all items by means of at least two brass screws or to approval.

All main switches, circuit breakers, isolators, valves, motors, switch-fuse, consumer's service units, and distribution boards etc shall be neatly and clearly labelled externally with identification marks corresponding with those on Drawings or in Specifications. Final details shall be agreed with the Engineer, but all labels/plates shall be in English.

### **3.22 SPARE PARTS AND SPECIAL TOOLS**

The sub-contractor shall submit his recommended list of spares covering a period of two years for all plant and auxiliary equipment supplied under this sub-contract. This list shall be priced individually, but not carried forward to the Bills of Quantities where provisional sums have been included for the purchase of spare parts. Before a Taking-Over Certificate is issued a full set of spares as agreed shall be handed over to the Engineer.

Complete sets of any special tools, necessary for the operation, maintenance and dismantling of various sections of the plant and equipment shall be provided in a strong box or boxes each fitted with a suitable padlock and two keys. Such tools shall not be used by the sub-contractor during the erection of the plant or equipment. The cost of these tools shall not be carried forward to the Bills of Quantities where a

provisional sum has been included for the purchase of these special tools.

### **3.23 SPECIALIST MANUFACTURERS AND SUB-CONTRACTORS**

Where specialists are not nominated by the Employer, the sub-contractor shall appoint specialist manufacturers and contractors for any sections of the Works described herein in which he is not himself an experienced, recognised and approved operator.

The Tenderer shall, on submission of his Tender, indicate the names of all proposed specialist manufacturers and contractors, together with the precise sections of the Works for which each will be responsible. The sub-contractor may be required to seek alternative manufacturers or contractors or to accept specialists nominated by the Employer. It shall be deemed that the prices entered include for this requirement.

The sub-contractor shall allow in his prices for phasing his work to meet the requirements of the other sub-contractors and any specialists, and for varying his programme or otherwise, to comply with the erection programme of such specialist or sub-contractors. No additional costs will be allowed to the sub-contractor for any disruptions to his programme, or otherwise, in his compliance with the above requirements.

### **3.24 USE OF SITE**

The lands and other places outside the Site that are the property of or under the control of the Employer shall not be used except with the approval of the Architect or Engineer.

The sub-contractor shall at any time remove any vehicle, wagon, or any other obstruction within his control that may be required to be moved by the Architect/Engineer for any purpose and the sub-contractor shall move such obstruction promptly on instruction being given and at his own cost, unless the Architect/Engineer shall decide otherwise.

The sub-contractor shall maintain access for the inspection, operation and maintenance of any of the Employer's plant or work that lies within the Site or elsewhere. The sub-contractor shall not use any portion of the Site for any purpose not connected with the Works unless the prior written permission of the Engineer has been obtained.

Except with a written permission of the Architect / Engineer, which shall be given when necessary for the execution of the works, the sub-contractor's employees will not be permitted to enter any of the Employer's buildings or lands or sites under the control of the Employer, other sub-contractors or the Engineer. The sub-contractor shall warn his employees that any man found within such buildings or sites without authority is liable to be removed from the Works.

### **3.25 POSSESSION OF SITE**

It shall be deemed that the prices entered by the sub-contractor for the completion of the works are inclusive of all required temporary supplies associated with retaining of essential services as may be directed by the Architect / Engineer or the Employer. All details shall be fully agreed as the works proceed to suit the operational situations as and when they arise.

### **3.26 INTERFERENCE WITH THE WORKS**

The sub-contractor shall not interfere in any way with any existing Works whether the property of the Employer or of a third party and whether the position of such works is indicated to the sub-contractor by the Architect or Engineer or not except where such interference is specifically described as part of the Works either in the contract or in any instruction from the Architect/Engineer.



### **3.27 WATER AND POWER FOR USE ON THE WORKS**

Water for construction purposes and for use by the sub-contractor's staff during the contract period will be the responsibility of the contractor. The contractor shall make his own arrangements for connection to the nearest suitable water supply/main and for metering the water used. In this respect the sub-contractor shall liaise with main Contractor and the Employer who may be able to assist.

The sub-contractor shall be responsible for the supply of all electrical power for construction purposes prior to the issue of the Taking-Over Certificate.

### **3.28 TELEPHONE AND COMMUNICATIONS**

The sub-contractor shall make his own arrangements for the provision of a telephone at the site, the sub-contractor being fully responsible for all charges and costs incurred in providing this facility. In this respect the sub-contractor shall liaise with the main contractor and the Employer who may be able to assist.

### **3.29 SITE OFFICES, WORKSHOP AND STORAGE**

A space will be provided by the Main Contractor for the sub-contractor's site offices, workshops and storage. The sub-contractor shall be responsible for providing all buildings, fencing, etc that he may require and on completion of the Works shall be required to remove all such buildings, fencing, etc and to restore the land to its original condition.

The sub-contractor shall state, with his Tender, the areas that he requires for his site offices, workshops and storage. The areas of land available are limited and the Employer reserves the right to allocate areas of land smaller than the sub-contractor may require, in which case, the sub-contractor shall make such additional or alternative arrangements as may be necessary for his full requirements, all at his own cost.

### **3.30 SANITATION OF THE WORKS**

The sanitation of the works shall be the responsibility of the contractor who shall arrange and maintain all required sanitation facilities to the satisfaction of the Local Authorities, Labour Department and Architect.

The Sub-contractor shall warn his employees and other specialists and sub-contractors that any employee found fouling the site shall be removed from the Site immediately.

In this respect, the sub-contractor shall arrange for erecting temporary toilet and ablution facilities, these facilities being connected, on a temporary basis, but to approval, into the existing foul sewage system. Full details shall be agreed. These temporary ablutions are a specific requirement of the Employer and shall therefore be provided for this duration of the contract, all items being removed at the completion of the Works and the existing system fully reinstated to its original condition.

### **3.31 PROTECTION OF WORKS**

The sub-contractor shall carefully protect from injury by weather all work and materials which may be affected thereby and allow in his prices for all dams, pumping, shoring, temporary drains, sumps etc, necessary for the purpose, and shall clear away and make good at his own cost to the satisfaction of the Engineer all damage caused thereby.

### **3.32 SUNDRIES**

The necessary holding down bolts, supporting brackets and templates, guards and screens, locks, piping, conduits, lamps and other requisite sundries whether specified in detail or not shall be provided, under the contract and it shall be deemed that the sub-contractor's prices, rates and the like include for all

such items.

### 3.33 MAINTENANCE CONTRACT

The Employer will consider the introduction of long-term maintenance contracts with specialist manufacturers and sub-contractors. In this respect the sub-contractor shall submit, with his tender, details of a planned maintenance contract that will take effect after the completion of the six-month maintenance period previously specified.

### 3.34 DELETION OF ITEMS FROM CONTRACT

Where Provisional Sum items have been identified within the Bills of Quantities these may be expended in whole, in part or may be totally deleted from the sub-contract works. In addition, certain items that have been designed, specified and included within the Bills of Quantities may finally be deleted from the sub-contract, as the Employer has not finally decided whether they are to be provided. It shall be deemed that the tender price entered by the sub-contractor has taken into account the possible deletion of these items, and Provisional Sum items, as no claims for loss of profit or any other such claim will be entertained.

### 3.35 AMBIENT CONDITIONS

The following climatic conditions apply at the site of the contract works and plant, equipment, apparatus and installation shall be suitable for these conditions:

CLIMATIC CONDITIONS	KISII TOWN
Maximum out door dry bulb Temperature, $t_o$	29°C
Minimum Temperature	8°C
Relative Humidity	41% - 97%
Altitude	1962 M ASL
Longitude	35° 21' 32" E
Latitude	0° 44' 37" S
Max. solar radiation occurs during the month of February	

Extremely heavy rains fall during certain periods of the year and the contractor shall be deemed to have taken account of this fact both in his prices and his planning for the execution of the works.

### 3.36 SCHEDULES OF TECHNICAL DATA

Where included in the Tender Documents, Schedules of technical data shall be completed by all tenderers, otherwise the Tender may not receive full consideration, and will be liable to rejection.

### 3.37 COPIES OF ORDERS

Copies of all orders for major items of plant, equipment and materials placed with suppliers shall be provided in triplicate to the Engineer.

### 3.38 INSPECTION AND TESTS AT MANUFACTURER'S WORKS

The Engineer, and his duly authorised representative, shall have at all reasonable times access to the Contractor's premises to inspect and examine the materials and workmanship of the mechanical and



electrical plant and equipment during its manufacture there; and if part of the plant and equipment is being manufactured on other premises, the Contractor shall obtain for the Engineer and for his duly authorised representative permission to inspect as if the plant and equipment was manufactured on the Contractor's own premises. Such inspection, examination or testing, if made, shall not relieve the Contractor from any obligation under the Contract.

Where the plant and equipment are a composite unit of several individual pieces manufactured in different places, it shall be assembled and tested as one complete working unit, at the Maker's works, to the relevant British Standard where applicable.

**PART 4:**  
**GENERAL SPECIFICATIONS**  
**KISII CANCER CENTRE, KISII COUNTY**

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## **4.1 GENERAL SPECIFICATION FOR L.P. GAS INSTALLATIONS**

### **4.1.1 GENERAL**

The specification covers the storage and transmission of liquefied petroleum gas (L.P.G) which refers to butane, propane or a mixture of both stored in liquid form under pressure. When mixed with air at atmospheric pressure, the gas requires a concentration of 2% of the vapour for ignition to take place. The percentage fill in the storage vessel is about 85%.

### **4.1.2 REGULATIONS AND STANDARDS**

Material, equipment, installations and workmanship shall comply with the requirements of the latest Editions of the following:

- Kenya Government By-laws;
- Relevant standards published by the Kenya Bureau of Standards;
- Relevant British Standards, Specifications & Codes of Practice; referred to as B.S.&B.S.C.P respectively in this document;
- Requirements of the clients proposed local L.P Gas Supplier;
- This specification and the contract drawings.

### **4.1.3 L.P.GAS BULK STORAGE TANKS**

The L.P Gas bulk storage tank shall be of either vertical or horizontal cylindrical mild steel construction manufactured from rolled carbon steel plate, welded together in compliance with the requirements of KS 200:2002 and BS 5500 or ASME (American Society of mechanical Engineers) Codes. The tank shall be earthed to protect against accumulation of static electricity.

The storage tank shall have the following minimum pressure requirements: -

Test Pressure: 25 bars  
Working pressure: 9 bars at 20°C

A test certificate shall be provided with the tank. It shall contain details such as the Standards to which the tank is manufactured, tests done, results of such tests, etc. To be stamped on the is the supplier, test pressure and the date of testing.

The tank shall be supplied complete with:

- Filling valve, take off connection with first stage regulator, Pressure relief valve, Pressure gauge and magnetic float gauge, all housed under a lockable-hinged cover, forming integral part of the tank.
- Drain plug.
- Main isolating Valve.
- Lifting lugs welded at both ends of the tank
- Mounting feet welded to the base of tank, which shall be used to anchor the tank to concrete;
- The tank shall be pickled and primed on the outside and painted with two coats of weather resistant paint.

The tanks are manufactured in various sizes but the following are the standard sizes used in commercial kitchen applications.

Tank capacity 0.5 Ton	1000mm diameter	2000mm long
Tank capacity 1.0 Ton	1000mm diameter	3000mm long
Tank capacity 2.0 Ton	1220mm diameter	4100mm long

Apart from the above minimum specification for the bulk L.P Gas storage tank, any additional requirements may be specified by the L.P. Gas supplier.

For vertical cylinders, they shall be fitted with a discharge isolation valve, pressure relief valve. Where there is a multiple cylinder bank installation, an automatic change-over valve with a regulator to reduce pressure to 37 mbar shall be incorporated.

Tank sizes are determined by the LPG dealers and they are available in various sizes. Each tank shall be identified with the following minimum information, permanently marked on the tank shell or imprinted on a stainless steel name plate affixed to the tank in a position normally accessible through the inspection chamber: -

- The name of the Vendor;
- The construction standard to which the tank is built;
- A reference number unique to the tank;
- The date of manufacture;
- The tank capacity

#### **4.1.4 PIPEWORK**

Pipes and gas manifolds for L.P. Gas installations shall be galvanized mild steel tubing to B.S. 1387: Class C with Pipe threads to B.S. 21, schedule 40 Black steel pipes with welded jointing or copper pipes to B.S 2871 with compression fittings to B.S 864. Only P.T.F.E tape or jointing compound specifically made for LPG shall be used. Use of hemp shall not be allowed. The L.P. Gas pipe work installation shall comply with the requirements of B.S.C.P. 331: Part 3.

Pipe fittings shall be either welded or seamless wrought steel pipe fittings to B.S. 1740: Class C. A union shall be provided on all straight runs of pipe work at a maximum interval of six meters.

Pipe work laid underground shall be wrapped with pipe wrapping material having vapour permeability of less than 0.11g/m<sup>2</sup>/d at 25° C and 75% relative humidity. The pipe wrapping material shall have high resistance to mineral acids, alkalis and salts and shall be on non-cracking and non-hardening characteristics.

Underground L.P. Gas distribution pipe work shall be laid to a slope of 1 in 200. Gas service pipes, from the gas distribution pipes to the parts of building they service, shall be laid to rise from the distribution pipe at a slope of 1 in 200. All pipes under the ground shall rest throughout their length on a 150mm deep, flue sand topping, followed by an approved backfilling.

Where the pipe passes through the building fabric, it shall be located within a pipe sleeve, one diameter larger than the pipe passing through it. The void between the pipe and the sleeve shall be packed with bitumen or approved equal material.

Horizontal and vertical pipes within the building shall be fixed off the walls with brass built brackets or spacer type steel pipe clips. The pipe supports spacing intervals for both the horizontal and vertical pipe runs shall be as follows:

Pipe nominal diameter (mm)	Support Spacing (m)
15	1.82
20 – 25	2.44
32 – 40	2.75
50	3
65	3.65

The pipe work underneath the tables worktops to which shall be connected the gas outlets shall be made from gas quality copper.

Pipework shall be bonded in accordance with I.E.E regulations.

#### **4.1.5 GAS ISOLATION VALVES**

The L.P. Gas isolation valves shall be quarter turn; lever operated ball valve of brass or stainless steel construction.

The valve shall have “open” and “closed” positions clearly marked on the valve body.

#### **4.1.6 TANK SITING AND SAFETY**

##### **SITING**

The position of the tank shall not be less than 7meters or 5metres away from adjacent buildings for aboveground and underground installations respectively. It shall be the responsibility of others to construct a concrete plinth to structural engineer's specifications to support the tank. The tank should not be sited in a location known to be susceptible to flooding.

##### **SAFETY**

For above ground installations, a 1.8m high fence with lockable gates around the cylinders to protect them shall be provided. The fence shall be at least 1.5 m away from the tank. A crash barrier shall also be erected at 2 meters from the fence to stop any vehicles from the access road crashing into the facility.

Two approved NON-SMOKING OR NAKED LIGHTS notices in red background shall be fixed on the surrounding fence. They shall be of such a size that can be read from a distance of 20 meters.

A portable carbon dioxide fire extinguishers and shall comply with B.S. EN 3/BS 1449 and B.S. 1004. shall be mounted on the fence next to the entrance.

#### **4.1.7 TESTING AND COMISSIONING**

The whole pipe work system shall be pressure tested using compressed air. The test pressure shall be 7.0 bars. When this pressure is achieved, the pipework shall be uniformly coated with a soap solution. Particular attention should be paid to all connection points. Leaks shall be detected by the presence of bubbles. If bubbles are found around fittings, the fittings should be checked for tightness and repaired as necessary.

The pressure test on pipe work shall be made before any part of the pipe work is concealed in any manner.

The test pressure shall be maintained for a period of six hours. If the pressure drops during this period, leaks in the pipe work shall be made good and the pressure test repeated for a further six hours.

The bulk gas storage tank shall be pressure tested using compressed air and soap solution. Test pressure of 25 bars shall be applied and soap solution applied uniformly on the entire surface of the tank. If leaks are detected in seams or the shell, notify the tank Vendor. After completion of pressure tests and installation, the L.P. Gas installations shall be balanced to give the required gas flows at each gas user's point.

**PART 5:**

**PARTICULAR SPECIFICATIONS**

**KISII CANCER CENTRE, KISII COUNTY**

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## 5 PARTICULAR SPECIFICATION FOR LPG INSTALLATIONS

### 5.1 General

This section specifies the particular requirements for LPG installations and materials forming part of the sub-contract works and shall apply except where specifically stated elsewhere in the specification or on the contract drawings.

### 5.2 Scope of Works

The contract works consist of the supply, delivery, erection, testing, commissioning and setting to work of the LPG installation works detailed in the specification and accompanying contract drawings. The sub-contractor shall include for all appurtenances and appliances not particularly called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the sub-contract works

No claims for extra payments shall be accepted from the contractor due to his failure to adhere to the above requirements. It is deemed that if in the opinion of the tenderer at the time of tendering there exists a difference between the specification and the contract drawings, that the tenderer has clarified these with the Project Manager /Engineer before tendering.

The works to be installed under this sub-contract shall comprise, but not restricted to the following:

1. Supply and installation of LPG system including the pipework, regulators and safety devices;
2. Electrical works associated with the installation.

### 5.3 Climatic Conditions

The following climatic conditions apply and all the materials and equipment used shall be suitable for these conditions:

CLIMATIC CONDITIONS	KISII TOWN
Maximum out door dry bulb Temperature, $t_o$	29°C
Minimum Temperature	8°C
Relative Humidity	41% - 97%
Altitude	1962 M ASL
Longitude	35° 21' 32" E
Latitude	0° 44' 37" S
Max. solar radiation occurs during the month of February	

## **5.4 PARTICULAR SPECIFICATION FOR LP GAS INSTALLATIONS**

### **5.4.1 EXTENT OF INSTALLATION**

The Contractor shall carry out all the necessary works for successful installation of the LPG Bulk Tank as described and set out in this section of the Particular Specification, Bills of Quantities and accompanying Drawings in accordance with the General Mechanical Specification herewith.

The Works, the major elements of which are scheduled below, includes the supply of all labour, material, equipment, plant and components necessary for complete installation and setting out work in respect of the entire mechanical services requirements within the proposed development and rendering it in complete working condition in respect of but not limited to the following installations:

New Installations: Supply, Installation, testing and commissioning of the following installations:

- LPG Bulk Tank;
- LPG pump;
- LPG Vaporiser;
- LPG isolation valves;
- LPG regulating valves;
- Solenoid Valves;
- All pipework and fittings to user points as per drawings.

In general, the installations shall be concealed in conduits except in areas where surface installation is necessary. In such cases, installation will be carried out in trunking, conduit or cable tray as indicated on the Drawings.

### **5.4.2 MATERIALS AND STANDARDS**

#### **LPG bulk storage tanks**

The L.P Gas bulk storage tank shall be of horizontal cylindrical mild steel construction manufactured in compliance with the requirements of BS 5500 or ASME (American Society of mechanical Engineers) Codes suitable for underground installation.

The storage tank shall have all the seams Gamma-Ray filmed for approval and the following minimum pressure requirement to be achieved. An approval test certificate from a registered authority shall be supplied with the tank.

Test Pressure:	26 bars
Working pressure:	17.5 bars (250 psi.) at – 6.67°C to 343°C

The tank shall be supplied complete with the following: -

(a) Marking plate giving:

- The name of manufacturer.....
- The capacity of the tank.....

- The weight of the tank .....
  - Date of Manufacture.....
  - Design code.....
  - Serial No.....
  - Max. Working pressure.....
  - Test Pressure & Date of Testing .....
- (b) Filling valve, magnetic float gauge, multi valve and pressure regulator all housed under a lockable hinged cover forming an integral part of the tank.
- (c) Safety relief valve
- (d) Level Indicator;
- (e) Main isolating valve
- (f) Lifting lugs and mounting feet.
- (g) LPG pumps to gas supplier's specifications as Blackmer LPG pumps or approved equal;
- (h) By-pass / return line.

The tank shall be pickled and primed on the outside and painted with two coats of weather resistant paint. The tank shall be treated against corrosion by applying an 800-micron thick epoxy paint. Cathodic protection shall be used to further protect the tank against corrosion.

Care shall be taken when handling the tank to ensure that the epoxy protective painting is not damage. Should any damage occur, the repairs shall be carried out in accordance with the tank manufactures requirements.

Apart from the above minimum specification for the bulk L.P Gas storage tank, the tenderer shall ensure that he has allowed for in his pricing of the tank any additional requirements needed by L.P. Gas supplier.

### **Pipework and Fittings**

The L.P. Gas pipe work installation shall comply with the requirements of B.S.C.P. 331: Part 3.

The underground pipework shall be polyethylene pipes and fitting, while the above ground shall be seamless schedule 40 black mild steel pipework. Where required, Copper tube to B.S. 2871 part 1, with copper alloy capillary and compression fittings to B.S. 864 for use with copper tube complying with B.S. 2871 shall be used.

Pipe fittings shall be either welded or seamless wrought steel pipe fittings to B.S. 1740: Class C and BS 143.

## **5.4.3 INSTALLATION**

### **General**

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-contractor shall be responsible to the Main Contractor for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

### **Regulations and standards**

Material, equipment, installations and workmanship shall comply with the requirements of the latest Editions of the following:

- (a) Kenya Government By-laws;
- (b) Relevant standards published by the Kenya Bureau of Standards;
- (c) Relevant British Standards, Specifications & Codes of Practice; referred to as B.S. & B.S.C.P respectively in this document especially but not limited to:
  - CP 331 Part 3: - Low Pressure Installation pipes
  - B.S. 5482 Part 1 -1979: - Domestic Butane and Propane gas burning installations.
  - B.S. 3016: 1983 – Specification or pressure regulator and automatic change-over device for L.P.G. installations.
  - B.S. 3212: 1983 Flexible rubber tubing and hose for use in L.P.G. Installations.
- (d) Requirements of the clients proposed local L.P Gas Supplier for the sub-contract;
- (e) This specification and the sub-contract drawings.

### **LPG pipework**

All the pipework joints shall be made using non hardening jointing compound suitable for L.P gas. A union shall be provided on all straight runs of pipe work at a maximum interval of six meters.

Pipe work laid underground shall be wrapped with pipe wrapping material having vapour permeability of less than 0.11g/m<sup>2</sup>/d at 250 C and 75% relative humidity. The pipe wrapping material shall have high resistance to mineral acids, alkalis and salts and shall be on non-cracking and non-hardening characteristics.

Underground L.P. Gas distribution pipe work shall be laid to a slope of 1 in 200. Gas service pipes, from the gas distribution pipes to the parts of building they service, shall be laid to rise from the distribution pipe at a slope of 1 in 200. All pipes under the ground shall rest throughout their length on a 150mm deep, flue sand topping protected by fire resistant sealant reinforced with glass fibre tissue, hessian cloth or other approved material, and follow by an approved backfilling.

Where the pipe passes through the building fabric, it shall be located within a galvanized steel pipe sleeve, one diameter larger than the pipe passing through it. The void between the pipe and the sleeve shall be packed with bitumen or approved equal material.

Horizontal and vertical pipes within the building shall be fixed off the walls with brass built in brackets or spacer type steel pipe clips. The pipe supports spacing intervals for both the horizontal and vertical pipe runs shall be as follows:

Pipe nominal diameter :	15mm	Interval : 1.82 metres
:	20 & 25mm	: 2.44 metres
:	32 & 40mm	: 2.75 metres
:	50mm	: 3.00 metres
:	65mm	: 3.65 metres

The pipe work underneath the tables worktops to which shall be connected the gas outlets shall be made from gas quality copper.

#### **LPG Isolation valve**

The L.P. Gas isolation valves shall be quarter turn; lever operated ball valve of stainless steel construction. The valve shall have “open” and “closed” positions clearly marked on the valve body.

The valves shall be as ‘Saunders’ or equal and approved.

#### **LPG pressure regulating valves**

L.P. Gas pressure regulating valves shall be type REGO, suitable for High Pressure and Low Pressure regulation with proper identification colour (Red – High Pressure & Blue - Low Pressure) and sized to match the volumetric flow required. The units shall be of robust aluminium die-cast construction with tough and sensitive diaphragm.

Units shall be installed to manufacturer’s instruction.

#### **Gas Meter**

L. P Gas meter as Metrix or equal and approved, with maximum working pressure of 0.5 bar. The meter to have fire proof rating up to 650°C according to EN1359.

#### **Solenoid Valve**

Solenoid operated gas safety shut-off valve as Teknigas or equal and approved. The electrical power supply shall be 230V AC 50Hz

### **5.4.4 TESTING AND INSPECTION**

#### **Testing and Commissioning:**

The whole pipe work system shall be pressure tested using compressed air. The test pressure shall be 7.0 bars, which shall be maintained for a period of six hours. If the pressure drops during this period, leaks in the pipe work shall be made good and the pressure test repeated for a further six hours.

The pipework pressure tests shall be carried out before any part of the pipework is concealed in any manner including covering by earth or builder’s work. All testing shall be as detailed in B.S. 5482 Part 1, 1979, Appendices B, C.

The bulk gas storage tank shall be pressure tested using water and compressed air. Test pressure of 25 bars shall be maintained for a period of six hours.

After completion of pressure tests and installation, the L.P. Gas installations shall be balanced to give the required gas flows at each gas user’s point.

**PART 5:  
BILLS OF QUANTITIES  
KISII CANCER CENTRE – KISII COUNTY, KENYA**

## 5 BILLS OF QUANTITIES

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### 5.1 General Directions

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- (a) The Bills of Quantities are to be read in conjunction with the Conditions of Contract, the Specification, the Data Schedules and the Drawings for details of the description, quality, tests and strengths of materials to be used and the workmanship, conditions, obligations, liabilities and instructions generally which have to be complied with in carrying out this contract. The cost of complying with all Conditions of Contract, the Specification, the Data Schedules and the Bills of Quantities including all overhead charges and profit and carrying out of the Works shall be deemed to be spread over and included in the prices and sums in this Bill of Quantities.
- (b) Each item which the Tenderer proposes to supply shall be priced by Tenderer with the exception of the item for which Provisional Sums have been allowed. The Tenderer shall insert in the appropriate column against each item allocated in United States Dollar (USD) as required by him and payments shall be made according to this allocation in the event of a contract.

If the Tenderer omits to price any item in the Bills of Quantities then the cost of such items will be held to be spread over and included in the prices given for other items of work.

- (c) The Total of Tender shall be carried to the Form of Tender.
- The Total of Tender shall include for the design, manufacture, inspection and testing, packing for shipment, insurance, customs dues, delivery to site, unloading, and all other charges, complete erection, testing, setting to work, finishing, painting, maintenance for a period of six calendar months and the instruction period all to the satisfaction of the Interior Designer and Engineer, of the items of Plant described or implied within the Specification and shown on the Drawings.
- (d) Provisional Sums may be expended in part, in whole or totally deleted from the Contract. The tenderer shall take this into consideration when pricing the tender, as no claims for loss of profit, etc will be entertained.
- (e) These Bills of Quantities have been measured from the Drawings listed, but do not purport to schedule the works in more detail or accuracy than is necessary to obtain a reasonable and comprehensive tender.
- The contractor shall nevertheless be deemed to have included in his prices for all labour and all materials, accessories, components, quantities and commissioning to provide complete installation as described in Specification and shown on the Drawings as required by the true meaning and intent hereof. It shall be deemed that the contractor has included for all requirements contained within the Specification, Drawings, Data Schedules and Bills of Quantities.
- (f) The Contractor's attention is drawn to the fact that the quantities in these Bills of Quantities are estimated and they are not to be considered as limited or extending the amounts of work to be done by the Contractor.
- (g) Irrespective of the requirements contained within the East African Standard method of Measurement it shall be deemed that the contractor has included all requirements contained within the Specification, Drawings, Schedules and Bills of Quantities.

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## 6.1 Particular Instructions

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1. Abbreviations used herein will be interpreted as follows: -

ABBREVIATION	MEANING
MM or mm	millimetre
LM or m	metre
m <sup>2</sup>	square metre
m <sup>3</sup>	cubic metre
kg	kilogramme
No.	Number / quantity

2. Prices given for supply and installation of pipework and ductwork per linear metre or per square metre shall include the supply, delivery and complete installation, including benchwork, painting, ducts, etc, with mechanical joints, unions, brackets and connection pieces, and all other necessary items to leave the installation in a complete and acceptable working order all as specified herein.
3. Sizes given after the item description under the reference "size" shall be interpreted as having millimetre units, unless otherwise specified.
4. **The rate entered against each item shall be EXCLUSIVE of all Taxes. The sub-contract works are exempted from the importation duty, VAT and all other Customs Taxes by the Kenya Revenue Authority.**



**LPG INSTALLATION**

Item	Description	Qty	Unit	Rate (USD)	Amount (USD)
	<p>Supply, installation, testing and commissioning of the following L.P. Gas Installations works. The sub-contractor to visit the site and assess the work involved. The work shall be carried out such that there shall be minimal interference with the normal operation of the continuing construction works.</p> <p>Supply, deliver and install Schedule 40 seamless steel pipes. Allow in pipe-work prices for pipe welding, pipe support clips and cradles, sockets, threaded nipples, bitumen seal, joint compound, joining, fixing and any other accessories for proper and satisfactory functioning of the system.</p> <p><u>Special Note: All rates shall be exclusive of ALL Taxes.</u>  <u>The sub - contract works are exempted from the import duty, VAT, and all other Customs taxes by the Kenya Revenue Authority</u></p> <p><b>Seamless Schedule 40 Steel Pipework</b></p> <p>A 20mm diameter seamless schedule 40 steel pipework 120 Lm</p> <p>B 25mm diameter seamless schedule 40 steel pipework 60 Lm</p> <p>C 32mm diameter seamless schedule 40 steel pipework 150 Lm</p> <p>D 32mm diameter polyethylene pipework 180 Lm</p> <p><b>Bend</b></p> <p>D 20mm diameter Schedule 40 bend 36 No.</p> <p>E 25mm diameter Schedule 40 bend 18 No.</p> <p>F 32mm diameter Schedule 40 bend 6 No.</p> <p>G 32mm diameter polyethylene pipework 8 No.</p> <p><b>Tees</b></p> <p>H 20mm diameter Schedule 40 tee 9 No.</p> <p>I 25mm diameter Schedule 40 tee 2 No.</p> <p>J 32mm diameter Schedule 40 tee 1 No.</p> <p><b>PE fittings</b></p> <p>K PE Brass Elbow 32 mm 2 No.</p> <p>L PE Brass Adaptor 32 mm x 32 mm 1 No.</p> <p><b>Gas Valves</b></p> <p>M 32mm dia. approved quarter turn, lever operated ball valve. 2 No.</p> <p>N 25mm dia. approved quarter turn, lever operated ball valve. 4 No.</p> <p>O 20mm dia. approved quarter turn, lever operated ball valve. 8 No.</p>				
<b>Total Carried Forward to Collection Page</b>					

Item	Description	Qty	Unit	Rate (USD)	Amount (USD)
A	<b>Gas Meters</b> 32mm L.P. Gas high pressure bulk meter with a nominal flow rate of 15m <sup>3</sup> /hr.	1	No.		
B	<b>Pipe Sleeve</b> 100mm diameter heavy duty PVC pipe sleeves for crossing over columns, beams and floor slabs.	30	Lm		
C	<b>Inspection Chamber</b> Coordinate construct of inspection chamber to be done by others.	1	No		
D	<b>Gas Regulator</b> 32mm first stage gas pressure regulator	1	No.		
	25mm second stage gas pressure regulator	2	No.		
E	20mm second stage gas pressure regulator	2	No.		
F	<b>Angle brackets</b> Mild steel angle bracket for L. P. Gas pipework complete with anchoring rawl bolts, nuts and painted with 2 coats of super gloss paint on a primer coat to the approval of the Engineer.	50	No.		
G	<b>Painting</b> Allow for painting of the L. P. Gas installation with 2 coats of yellow super gloss paint on a primer coat to the approval of	1	Item		
H	<b>Excavation</b> Allow for excavation of the Lpgas pipework in murrum soil	130	LM		
I	<b>Connection to the Bulk LPGas Tank</b> Allow for connection of the new installed pipework to the bulk LPGas tank.	1	Item		
J	<b>Solenoid valve</b> 32mm diameter normally open solenoid valve including connection to power and interlinking with fire alarm system.	1	Item		
K	<b>LPGas leak Detectors with Solenoid Valve</b> Allow for complete installation of LPGas leak detectors with 25mm diameter solenoid valve and wiring.	4	No.		
L	5 zone electronic control unit complete with wiring to visual and audio alarm units.	1	No.		
M	Visual alarm units	3	No.		
N	Audio Alarm bells	3	No.		
<b>Total Carried Forward to Collection Page</b>					

Item	Description	Qty	Unit	Rate (USD)	Amount (USD)
A	<b><u>L.P Gas Tank.</u></b>				
	5,000Litres L.P Gas storage Gas storage tank complete as specified and with filling valve, content gauge, pressure regulator, return line, inline LPG pump as blackmar designed to meet the demand, multi valve, safety valve, isolating valve, drain plug, main isolating valve, and lockable hinged cover for tanks filling all complete with factory protective paint finish.	No.	1		
	B Supply and install a no-smoking sign with the writing L.P GAS: NO SMOKING OR NAKED LIGHTS.	No.	2		
	C Allow for painting two coats of aluminium paint over primer on the LPG tank using approved paint to manufacturer's approval.	Sum.	1		
	D Allow for filling the tank with the initial full capacity of LPG from approved supplier.	Liters	5,000		
E	<b>Working and As-built Drawings</b>				
	Sum for as-built drawings and manuals-2 sets each both in soft and hard copy for L. P.Gas installations.	1	Item		
F	<b>Testing and Commissioning</b>				
	Allow for setting to work, testing and commissioning of the L.P.Gas installations to the satisfaction of the Engineer.	1	Item		
<b>Total Carried Forward to Collection Page</b>					

**COLLECTION PAGE**

Item	Description		Total (USD)
1	Total carried forward from Page LPG -1	.....	
2	Total carried forward from Page LPG - 2	.....	
3	Total carried forward from Page LPG - 3	.....	
Total Cost carried to Summary Page			

**SUMMARY PAGE**

Item	Description		Total Cost (USD)
1	Total for LPG Installation Brought Forward	.....	
2		.....	
	ADD CONTIGENCY		5,000
3	SUB-TOTAL	.....	
<b>Total for LP Gas carried to Form of Tender (EXCLUDING VAT)</b>			

Amount in words:.....

Tenderer's Name and Stamp:

Address ..... Tel No.....

Period To Execute The Works: .....

Tenderer's V.A.T No: .....

Tenderer's P.I.N No: .....

Tenderer's Signature ..... Date.....

Witness Signature ..... Date.....

**PART 7:**  
**DATA SCHEDULES**  
**KISII CANCER CENTRE, KISII COUNTY, KENYA**

**PART 7A. EQUIPMENT AND MATERIALS INCLUDED IN THE TENDERED SUM.**

**LPG TANK**

Manufacturer /supplier.....  
Model details.....  
Country of supply.....

**LPG METER**

Manufacturer /supplier.....  
Model details.....  
Country of supply.....

**SOLENOID VALVE**

Manufacturer /supplier.....  
Model details.....  
Country of supply.....

**LPG PUMP**

Manufacturer /supplier.....  
Model details.....  
Country of supply.....

**LEAK DETECTOR**

Manufacturer /supplier.....  
Model details.....  
Country of supply.....

Further Technical literature to be supplied by completing the attached Schedules for all equipment offers.

**PART 7B SPECIAL TOOLS REQUIRED**

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**PART 7C SPARE PARTS LIST OFFERED**

**LPG** .....

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**OTHERS**.....

.....

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**PART 7D: SUB-CONTRACTORS TO BE USED**

**LPG INSTALLATION** .....

.....

**OTHERS** .....

.....

**PART 7E: EQUIPMENT DELIVERY SCHEDULE**

**LPG INSTALLATION .....**

**OTHER EQUIPMENT .....**

**PART 8:**  
**SCHEDULE OF DRAWINGS**  
**KISII CANCER CENTRE, KISII COUNTY, KENYA**

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**PART 8. SCHEDULE OF DRAWINGS.**

- |         |                              |
|---------|------------------------------|
| 1. P/02 | Ground Floor Plumbing Layout |
| 2. P/04 | First Floor Plumbing Layout  |
| 3. P/07 | Second Floor Plumbing Layout |
| 4. P/10 | Third Floor Plumbing Layout  |
| 5. P/13 | Fourth Floor Plumbing Layout |