
**CONSTRUCTION/EXTENSION OF GURU RAMDAS LANGAR HALL
AT
SRI HARMINDER SHAB, AMRITSAR**

**TENDER DOCUMENT
FOR
HOT WATER SYSTEM**

Owner :

**SHIROMANI GURDWARA PARBANDHAK COMMITTEE
SRI AMRITSAR.**

May, 2022

INDEX FOR MECHANICAL WORKS

S.No.	DESCRIPTION	PAGE NO.
I)	CONDITIONS OF CONTRACTS	SCC 3 - 29
II)	TECHNICAL SPECIFICATION	TS 1 – 48
III)	LIST OF APPROVED MAKES	LAM 1 – 3
IV)	LIST OF DRAWINGS	LOD 1 – 1
V)	BILL OF QUANTITIES	BOQ I – 19

1.0 GENERAL CONDITIONS OF CONTRACT

1.1 Scope:

General Conditions of Contract hereinafter specified shall be read in conjunction with Special Conditions of contract Following clauses shall be considered as in extension and not in limitation of the obligations of the Contractor. In case of discrepancy and/or disparity between these General Conditions of Contract and any other section, the more stringent shall apply and the decision of the OWNER/CONSULTANT/PMC/PMC shall be final.

1.2 Definition of Terms:

- a) The Owner/Client shall mean **M/s. SHIROMANI GURDWARA PARBANDHAK COMMITTEE, AMRITSAR (SGPC)** or some other person or persons for the time being or from time to time duly appointed by the Owner in writing.
- b) The term 'Contractor' shall mean the successful Tenderer of the HOT WATER work whose tender has been accepted by the OWNER/CONSULTANT/PMC and to whom work order has been issued.
- c) The 'Sub-Contractor' shall mean the firm or persons named in the Contract for any part of the work or any person to whom any part of the work has been sublet with the consent in writing of the OWNER/CONSULTANT/PMC and shall include his heirs, successors and Assigns approved by the Owner.
- c) The 'Specification' shall mean the specifications annexed to or issued with these Conditions of Contract and any amendments made herein after to carry out the work smoothly.
- e) The 'Contract' shall mean the agreement between the 'Contractor' and the Owner to be entered into under these conditions and shall include these terms and Conditions of contract, specifications, Schedules, BOQ, Drawings, Correspondence, Letter of Intent of the Owner and subsequent amendments if any.
- f) The 'Site' shall mean the place or places at which the plant is to be delivered or work done by the Contractor and shall include where applicable the lands and buildings upon or in which the works are to be executed and shall also include the place or places at which fabrication and other work will be carried out by the Contractor.
- g) 'Plant', 'Equipment', 'Stores', 'Work' or 'Works' shall mean and include plant and materials to be provided and work to be done by the Contractor.
- h) 'Tests on completion' shall mean such tests as are prescribed by the specifications or have been mutually agreed to between the Contractor and the OWNER/CONSULTANT/PMC, to be carried out before the plant is taken over by the Owner. In case tests are not possible due to climatic conditions at the time of

completion, the Contractor shall be bound to carry out tests as prescribed hereinafter, at any time subsequent to the date of completion, but before the end of defects liability period.

- i) 'Commercial use' shall mean that use of the work contemplates or of which it is to be commercially capable.
- j) 'Writing' shall include any manuscript, typewritten or printed statement under or over signature or seal as the case may be. Words importing 'Person' shall include firms, companies, corporations and associations of individuals whether incorporated or not.

1.2.1 Words importing singular shall also include plural and vice versa where context requires.

1.2.2 OWNER, ARCHITECT, SERVICES CONSULTANTS:

The Owner, Architects & Services Consultants for the subject work are:

OWNER
SHIROMANI GURDWARA PARBANDHAK COMMITTEE,
AMRIT ASR,PUNJAB

SITE
GURU RAM DAS LANGAR HALL.
SRI HARMINDER SAB,
AMRITSAR
PUNJAB.

ARCHITECT
HABITAT ARCHITECTS
1777, Haharaj Nagar,
Ludhina

PMC
RT & Associates (P) Ltd.,
A-17/B, SFS Flat, Phase-3,
Mayur Vihar,
Delhi-95

SERVICES CONSULTANTS
M/s. Narinder Singh Consulting Engineers
G-128, Nariana Vihar,
New Delhi – 110028
E-mail: Hot Waterconsult@hotmail.com

1.3 Agreement:

A formal agreement shall be entered into by the Contractor with the Owner for the proper fulfillment of the Contract. In case the agreement is not executed by the Contractor within one month of receipt Intent, Owner may at his option without prejudice to any other claim against the contractor and within seven days after expiry of the said one month and before execution of the agreement by the Contractor and by notice in writing revokes the acceptance of the tender. There upon the Owner shall not be liable to any claim from the Contractor for work already done.

1.4 Completion of Contract :

The Contractor shall provide without any extra charge all items whether specifically mentioned or not but are usual and required to make a complete working plant and to ensure safe and satisfactory operation. All apparatus, appliances, materials or labour which may be necessary to complete the work in accordance with the intent

1.5 Co-ordination:

1.5.1 Work shall be carried out in conformity with the specifications, accompanying drawings and with the requirements of the general architectural and structural plans after approval by the Owner / Consultant. The Contractor shall be responsible for taking actual measurements at site and varying the work in detail if required to meet the site conditions. Such deviations shall, however, be subject to the approval of the Consultant and Owner.

1.5.2 The Contractor shall also co-operate with the Owner's other Contractors, compare plans, specifications and time schedules and so arrange his work that there will be no interference. The Contractor shall forward to the Owner copies of all correspondence and drawings so exchanged. Failure to check plans and conditions will render the Contractor responsible for bearing the cost of any subsequent change found necessary.

1.6 Bye laws:

- 1.6.1 The Contractor shall comply with all bye-laws and regulations of local and other statutory authorities having jurisdiction over the works and shall be responsible for the payment of all fees and other charges and giving and receiving of all necessary notices and keeping the owner informed of the said compliance with the bye-laws, payments made, notices issued and received.
- 1.6.2 The Contractor shall indemnify the Owner and Consultant against all claims in respect of patent rights, designs, trade marks or names or other protected rights in respect of any plant, machine, work or material used for or in connection with the works or temporary works and from and against all claims, demands, proceeding, damages, cost, charges and expenses whatsoever in respect thereof or in relating thereto. The Contractor shall defend all actions arising from such claims and shall himself pay all royalties, licenses fees, damages, costs and charges of all and every sort that may be legally incurred in respect thereof.
- 1.6.3 All drawings required for statutory approvals are to be prepared by the Contractor and approved by the Consultant. The Contractor has to obtain approvals from statutory authorities. However statutory fees will be reimbursed by the Owner on production of original receipts.

1.7 Rates:

- 1.7.1 Tender shall be on an item rate basis for equipment delivered, tested and commissioned at site. During the contract period prices shall remain firm and free from variations due to rise and fall in the cost of materials, equipment, labour or any other reason whatsoever.
- 1.7.2 Tender price shall be inclusive of all applicable taxes, duties and other levies such as excise-duty, sales tax, turnover tax, fabrication tax, works contract tax, octroi etc., Any statutory variation in taxes and duties during the contractual/scheduled delivery will be paid by the Owner subject to submission of documentary proof for the actual payment made by the Contractor.
- 1.7.3 Unit rates for all items of equipment and materials shall remaining valid till the completion of work in all respect and shall be free from variations, due to increase or decrease in the cost of materials, labour, taxes or any other reason whatsoever. Unit rates shall become applicable only to variations in quantities due to changes/modifications in the drawings made by the Owner.

1.8 Owner's Representative:

- 1.8.1 The Site Engineer deputed by the Owner shall be representative of the Owner and Consultant. The duties of the Owner's representative are to watch and supervise the works and to test any materials, equipment, plant etc., to be used to workmanship employed in connection with the works. He shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract, or, except any expressly provided hereunder, to order any work involving delay or any extra payment by the Owner or any variation of or in the works.
- 1.8.2 The Contractor shall afford the Owner's representative every facility and assistance for examining, checking and measuring materials and works. The Owner's representative without the written order of the Owner shall not to revoke, alter, enlarge or relax any requirements of this Contract, or to sanction any-day work, additions, alterations, deviations or omissions.
- 1.8.3 The Owner's/Consultants representative shall have power to give notice to the Contractor or his representative about the non-approval of any work or materials or equipment and such works shall be suspended or the use of such materials, equipment should be discontinued until the decision of the Owner is obtained. The work will, from time to time be examined by the Consultant or the Owner's representative, but such examination shall not be in any way exonerate the Contractor from the obligation to remedy any defects which may found to exist at any stage of the work or after the same is completed. Subject to the limitations of this clause, the Contractor shall take instructions only from the Owner.

1.9 Date of Commencement and Completion:

- 1.9.1 The date of letter of acceptance of Tender issued to the Contractor shall be regarded as the date of commencement for the purpose of this Contract. The work shall be Proceeded in accordance with the programme of work approved by the OWNER/CONSULTANT/PMC and shall be completed in all respect within 2 (two) months.
However, OWNER/CONSULTANT/PMC reserves the right to indicate commencement/ mobilization date.

1.10 Delays:

- 1.10.1 The Contractor shall not be entitled to any compensation for any loss suffered by him on account of delays in commencing or executing the work, whatever the cause for such delays may be, including delays in procuring government controlled or other materials. The Contractor shall, however, merit extension of time as herein after mentioned.

1.10 Rejection of Defective Plant:

- 1.11.1 If the completed plant or any portion thereof before it is taken over be found defective or fails to fulfill the intent of this specification, the Contractor shall on receipt of notice from the Consultant/Owner forthwith make the defective plant/equipment good.
- 1.11.2 Should he fail to do so within a time considered reasonable by the Consultant/Owner, the Owner may reject and replace at the risk and expense of the Contractor the whole or any portion of the plant/equipment/installation which is defective or fails to fulfill the requirements of the Contract.
- 1.11.3 The OWNER/CONSULTANT/PMC shall have the right to operate installation/equipment if in operating condition whether or not such equipment have been accepted as complete and satisfactory. Repairs and alterations shall be made at such times and as directed by the Consultant.

1.12 Taking Over:

- 1.12.1 The works when satisfactorily completed at site shall be deemed to have been taken over by the Owner when the Consultant will have certified in writing that the plant has fulfilled the Contract conditions.

1.13 Extension of Time:

- 1.13.1 If the Contract is delayed in the progress and completion of work by changes Ordered or by any which the OWNER/CONSULTANT/PMC shall decide to justify the delay, then the time of completion shall be extended by mutually agreed time. No such extension shall be allowed unless requests for extension are made in writing by the Contractor to the OWNER/CONSULTANT/PMC within 15 days from the date of occurrence of the delay.

1.14 Liquidated Damages:

- 1.14.1 For all delays which do not merit an extension of time the Contractor shall pay to the Owner liquidated damages 1/2 % per week, or part thereof, for delay in the completion of work, subject to a maximum of 10% of the contract value. The amount of liquidated damages shall be recoverable from the payments due to the Contractor on this or any other contract with the Owner.
- 1.14.2 The deduction of liquidated damages shall not absolve the Contractor of his responsibility and obligations under the Contract to complete the work in its entirety and shall also be without prejudice to action by the Owner under clause: `Termination of the Contract by the Owner.

1.15 Security Deposit:

1.15.1 Contractor shall furnish a bank guarantee as security deposit for an amount Equivalent to 1% of the contract value, within 15 days of the issue of Letter of Intent. 50% of the total security deposit shall be refunded after the issue of the final certificate by the Consultant and balance amount will be refunded after the expiry of defects liability period laid down under the Clauses: 'Guarantee and Defects Liability Period'.

1.16 General:

1.16.1 Every tenderer is expected before quoting his rates to inspect the site of the proposed Work. The materials must strictly comply with the relevant specifications attached. Samples of the materials as required by the Consultants in all cases shall be submitted for their approval before the supply to site of work begins. In absence of any specification of any material or workmanship the same shall have to be to the entire satisfaction of the Consultants/Owner.

1.16.1 If on check differences are found between the rates given by the Contractor in words and figures or in the amounts worked out by him, the following procedures shall be followed :-

- a) Where there is a difference between the rates in figures and in words, the rates which correspond to the amounts worked out by the Contractor shall be taken as correct.
- b) Where the amount of an item is not worked out by the Contractor or it does not correspond with the rate written either in figure or in words, then the rate quoted by the Contractor in words shall be taken as correct.
- d) Where the rate quoted by the Contractor in figures in word tallies but the amount is not worked out correctly, the rate quoted by the Contractor shall be taken as correct and not the amount.

1.16.3 No excuses as regards want to information on any particular point will be considered after the tender has been received. No advice of any change in rate or conditions after the opening of tender shall be entertained.

1.16.4 The Contractor shall not in any case after acceptance of a contract rate be paid any extra charges for lead involved in transport of materials to site of work, erection, and hire of T & P sheds for materials, royalty for designs equipment etc., or for any other reason in case the Contractor is found later on to have misjudged the materials available. All taxes including octroi, toll and sales tax/works contract etc shall be payable by the Contractor and any claim whatsoever in this respect shall not be entertained.

1.16.5 No alteration which is made by the tenderer in the Notice of Tender, instructions to the Contractors, the contract Form, the Conditions of Contract, accompanying the same shall be recognised, and if any such alterations are made or any special conditions are attached, the tender is liable to be rejected.

1.17 Termination of Contract by the Owner:

1.17.1 The Owner in Consultation with the OWNER/CONSULTANT/PMC may, notwithstanding any previous waiver and after giving seven days notice in writing to the Contractor and under the provisions of this clause, terminate the contract on the occurrence of any or all of the following:

- a.) If the Contractor
 - i) commits any 'act of Insolvency'
 - ii) shall be adjudged as 'Insolvent'
 - iii) shall have an order for compulsory winding up made against him.
 - iv) pass effective resolution for winding up voluntarily.
 - v) shall suffer any payment under this Contract to be attached by or on behalf of any of the Creditors of the contractor.
 - vii) shall assign the Contract without the prior consent in writing of the Owner/ Consultant.
 - vi) shall charge or encumber this contract or any payment due or may become due.
- b.) If OWNER/CONSULTANT/PMC shall certify in writing to the Owner that the Contractor:
 - i) has abandoned the contract.
 - ii) has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works seven days after receiving from the owner written notice to proceed.
 - iii) has failed to proceed with the work with such due diligence and failed to achieve such due progress as would enable the works to be completed in accordance with the approved programme of work.
 - iv) has failed to remove materials from the site or to pull down and replace works for seven days after receiving from the Architect/ Consultant under these conditions.
 - v) has neglected or failed persistently to observe and perform all or any of the acts, matters or things by this contract to be observed and performed by the contractor for even days after written notice shall have been given to the Contractor requiring the contractor to observe or perform the same.
 - vi) has to detriment of good workmanship or in defiance of the OWNER/CONSULTANT/PMC's instruction to the contrary sublet any part of the Contract. The termination of the contract shall be without prejudice to the powers of the OWNER/CONSULTANT/PMC or the obligations and liabilities of the contract, the whole of which continue to be in force as if the contractor has not been so determined and as if the work subsequently executed has been executed by and/or on behalf of the Contractor.

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- 1.17.2 After the issue of such notice, the Contractor shall not be at liberty to remove from site any plant, tools and materials belonging to him which shall have been placed there on for the purpose of the works and the Owner shall have lien upon such plant, tools or materials to subsist from the date of such notice and until the notice shall have been complied with.
- 1.17.3 If the Contractor shall fail to comply with the requirements of said notice for seven days after such notice has been given, the Owner shall have the power to enter upon and take possession of the works and site and all plants, tools and materials thereon, and to engage any other person, firm or agency to complete the works, utilizing the plant, tools and materials to the extend possible. The Owner shall not in any way be responsible for damage or loss of the tools, equipment and materials and the Contractor shall not have any compensation whatsoever.
- 1.17.4 Upon completion of the works, the OWNER/CONSULTANT/PMC/PMC shall certify the amount of expenditure properly incurred consequent on and incidental to the default of the contractor as aforesaid and such amount shall be deducted from the payments due to the Contractor, including the security Deposit. If the said amount exceeds the payment due to the contractor, the Owner shall be at liberty to dispose of any of the Contractor's materials tools or plant and apply the proceeds For the payments due from the Contractor and recover the balance by due process of law.
- 1.17.5 After the works have been completed and the amounts due from the Contractor have been fully recovered from the Contractor, the OWNER/CONSULTANT/PMC shall give notice in writing to the Contractor to remove the surplus plant and material from site. If such plant and materials are not removed within a period of 14 days after such notice, the Owner shall have the power to remove and sell the same holding the proceeds less the cost of removal and sale to the credit of the Contractor. The Owner shall not be responsible for any loss sustained by the contractor from the sale of the plant.

1.18 Clean up of Work Site

- 1.18.1 During erection the contractor shall at all times keep the working and storage areas free from waste or rubbish. On completion of erection, he shall remove all structures, debris and leave the premises in a satisfactory condition under intimation to site incharge.

1.19 Terms of Payments:

1.19.1 The Owner shall pay to the Contractor in the following manner the contract price unless agreed upon otherwise between the contractor and the Owner.

- a) Equipment (Heat Pumps, Hot Water Generators):
 - i) 75% against supply of material or invoice (by L/C in favor of Manufactures.) against Bank Guarantee if agreed by client.
 - ii) 15% after satisfactory erection, testing & commissioning, subject to approval by the Consultants.
 - iii) Balance 10% as retention money out of which 5% will be released against Bank Guarantee for the like amount valid till the expiry of defect liability period on Commissioning and handing over and 5% will be cash retention that will be released on expiry of defect liability period.

- b) For Supply installation Testing & Commissioning of other Equipment and installation Testing & Commissioning of Imported Equipment.
 - i) 70% prorata against safe receipt of material at site.
 - ii) 5% after approval of Shop Drawings & Documents by the Consultants.
 - ii) 15% after satisfactory erection, subject to approval by the Consultants.
 - iii) Balance 10% as retention money out of which 5% will be released against Bank Guarantee for the like amount valid till the expiry of defect liability period on Commissioning and handing over and 5% will be cash retention that will be Released on expiry of defect liability period.

1.19.2 Payment shall be made in the following manner:

- a) Interim payments shall be made within one month from the date of every interim certificate issued by the owner. Minimum amount for interim certificates shall be Rs. 2,00,000/-.
- b) Final payment shall be made within 60 days from the date of the Final Certificate issued by the OWNER/CONSULTANT/PMC.

1.20 Construction of Contract:

1.20.1 The contract shall in all respects be constructed and operate as Indian Contract and in conformity with Indian Laws and all payments there under shall be made in Rupee money. The marginal notes here to shall not effect the construction here of.

1.21 Proceedings:

1.21.1 All proceedings relating to this work, if any, shall be instituted at Amritsar only.

1.22 Arbitration:

1.22.1 All disputes and differences of any kind whatever arising out of or in connection with the contract or the carrying out of the works (whether during the progress of the works or after their completion and or breach of the contract) shall be referred to and settled by the OWNER/CONSULTANT/PMC who shall state his decision in writing. Such decision may be in the form of final certificate or otherwise. The decision of the OWNER/CONSULTANT/PMCs with respect to any of the excepted matters shall be final and without any appeal as stated in this section. But if either the owner or the Contractor be dissatisfied with the decision of the Owner / Consultant on any matter, question or dispute of any kind (except on any excepted matters) or as to the with-holding by the Owner / Consultant of any certificate to which the contractor may claim to be entitled, then and in any such case either party (the Owner or the Contractor) may within 28 days after receiving notice of such decision give a written notice to the other party through the OWNER/CONSULTANT/PMC requiring that such matters in dispute be arbitrated upon. Such written notices shall specify the matters which are in dispute and such dispute or difference of which such written notice has been given and no other shall be referred to the arbitration. Final decision of single Arbitrator being a member of the Institution of Engineer (India) to be agreed upon and appointed by both the parties or in case of disagreement as the appointment of single arbitrator to the arbitration of two arbitrators being both members of Institution of Engineers (India) one to be appointed by each party. Such arbitrators shall before taking upon themselves the burden of Reference, appoint an umpire.

1.22.2 The Arbitrator/Arbitrators or the umpire shall have power to open up review and revise any certificate, opinion, decision, requisition or notice save in regards to the excepted matters in dispute which shall be submitted to him or them and of which notice shall have been given as aforesaid.

1.22.3 Upon every or any such reference, the cost of and incidental to the reference and award respectively shall be at the discretion of the arbitrator/arbitrators or the umpire who may determine the amount thereof or direct the same to be shared as between attorney and the client or as between party and shall direct by whom to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a sub-mission to arbitration with the meaning of the Indian arbitration Act 1940 or any statutory modification thereof. The award of the arbitrator/ arbitrators or umpire shall be final and binding on the parties.

1.22.4 Such Reference except as the with holding by the Owner of any certificate under clause 1.11, 1.14 / 1.17 to which the contractor claims to be entitled shall not be opened or entered upon until the completion or alleged completion of the works or until after the practical cessation of the works arising from any cause unless with the written consent of the owner or and the contractor provided always that the owner shall not with hold

the payment of Interim Certificate nor the contractor except with the consent in writing of the architects in any way delay the carrying out the works by reason of any such matter, question or dispute being referred to arbitration but shall proceed with the work with all due diligence and shall until the decision of the arbitrator or arbitrators or the umpire be given abide by the decision of Consultants and no award of Arbitrator or Arbitrators or umpire shall relieve the contractor of his obligations to adhere strictly to the Architect's instructions with regard to the actual carrying out the works.

2.0 SPECIAL CONDITIONS OF CONTRACT:

2.1. GENERAL

These special condition of contract shall be read in conjunction with the other documents forming part of the contract. In case of any variance, these conditions shall supersedes any other conditions mentioned in any contract document.

The materials, design and workmanship shall satisfy the specifications contained herein and Codes Referred to. Where the technical specifications stipulate the requirement in addition to those contained in the Standard Codes and specifications those additional requirements shall also be satisfied. In the absence of any Standard/ Specifications covering any part of the work covered in this tender document, the instructions/directions of Consultant will be binding on the contractor.

The scope of this section is to describe materials and systems for HOT WATER installations of building which form together with the project documents, a complete volume of work and quality description.

All HOT WATER installations shall be of high quality, complete and fully operational including all necessary items and accessories whether or not specified herein. All HOT WATER work shall be completed in accordance with the regulations and standards to the satisfaction of the Consultants/ Architect. The general provisions, special provisions and general requirements apply to the entire installation.

The work shall be carried out simultaneously with building work and shall be continued till it is completed satisfactorily along with the completion of essential portions of the building works. All installed HOT WATER works shall be protected till the end - by the HOT WATER contractor.

2.2 SCOPE OF WORK:

- 2.2.1 Contractor shall furnish all labour, materials, factory supplied new equipment, transportation and incidentals necessary for supply, installation, testing & commissioning of complete HOT WATER system as described in these documents & drawings. In general, the entire work shall be carried out as follows:

Contractor shall submit all the calculations i.e. pressure drop of each system etc.

2.3 EXCLUSIONS:

2.3.1 P.C.C. foundation for Machines, Cooling Towers, Pumps and Fan, etc.

2.3.2 Plant Rooms and false ceiling work.

2.4. RATES:

2.4.1 The rates quoted shall be deemed to allow for all minor extras and constructional details which are not specifically shown on drawings or given in the specifications but are essential in the opinion of the Owner / Consultants for the execution of works to conform to good workmanship and sound engineering practice. The Owner / Consultants reserve the right to make any minor changes during the execution without any extra payment.

2.4.2 The Consultants decision to clarify any item under minor changes, minor extras and constructional details shall be final, conclusive and binding on the Contractor.

2.4.3 The rates quoted by the Contractor shall be net so as to include all the requirements described in the contract agreement and no claim whatsoever due to fluctuations in the price of material and labour will be entertained.

2.4.4 The rates quoted by the Contractor shall include for supplying materials and labour necessary for completing the work in the best and most workmanship like manner to the satisfaction of the Architect /Consultants and which in the opinion of the Consultants cannot be made better. The rates shall be complete in all respects including cost of materials, erection, fabrication, labour, supervision, tools and plant, transport, sales and other taxes, royalties, duties and materials, contingencies, breakage, wastage, sundries, scaffoldings, etc on the basis of works contract. The rates quoted shall include all taxes, duties, transport, insurance, octroi, or any other levies applicable under the statute.

2.4.5 In case the rates of identical items under different sub-heads/parts are different, the lowest of these will be taken for the purpose of making the payments.

2.4.6 The rates for different items are for all heights, depths, widths and positions, unless otherwise specified against the item. No claim in respect of any leads/lifts for any item specified in the Schedule of Quantities, for which separate items for lead/lift do not exist in that schedule, will be entertained.

2.4.7 The work shall be executed as per the programme drawn or approved by the Architects and it shall be so arranged as to have full co-ordination with any other agency employed at site. No claim for idle labour shall be entertained nor shall any claim on account of delay in the completion of the work be tenable except extension of time secured by the contractor on request to be submitted to the Architects.

2.4.8 The Contractor shall permit free access and afford normal facilities and usual convenience to other agencies or departmental workmen to carry out connected work or other services under

separate arrangements. The Contractor will not be allowed any extra payment on this account.

- 2.4.9 The contractor shall provide all equipments, instruments, labour and such other assistance required by the OWNER/CONSULTANT/PMCs for measurement of the works, materials etc.
- 2.4.10 Even though the payment shall be effected under different items in the schedule of quantities, the various items in the schedule of quantities shall be deemed to cover all aspects of the work for the completion of the work as per drawings, from excavation to the finishing notwithstanding any space adjustment possible omission in the description of the item and specifications thereof regarding incidental items of work, without which the whole work cannot be deemed to have been included under the scope of the different items of the schedule of quantities. The Contractor is advised to keep this in mind while quoting rates as no claims in this regard shall be entertained.
- 2.4.11 **Electricity shall be supplied at one point at site** and the contractor shall be responsible for providing the kilo watt hour meter and draw electricity from this point. The cost of meter, cabling, distribution etc. shall be borne by the contractor. Also the cost of electricity consumed will be charged from the contractor at the same rate as of the electricity authority. The owner, however, does not guarantee continuity and sufficiency of power at all times. If Power is not available, than contractor have to arrange his own D.G. set to complete the work in time.

2.5 AWARENESS OF SITE CONDITIONS AND CARRYING OUT OF SITE INSPECTION PRIOR TO TENDER SUBMISSION

- 2.5.1 Prior to the preparation and submission of his Tender, the Contractor shall make visits to the site and carry out all the necessary inspections and investigations in order to obtain all information and to make his own assessment of the conditions and constraints at site, including the means of access to it. The Contractor shall make himself aware of all the features of the site and the working conditions and space and shall, in general, be responsible for obtaining all the necessary and requisite information needed for him to prepare and submit his Tender.
- 2.5.2 Should the Contractor require any clarifications he shall seek these in writing from the Owner/ Consultant before submitting his Tender. At no stage will any extra claims be entertained or allowed on any matter or for any reason arising from or as a consequence of the Contractor's failure to comply with all the requirements stipulated in this Clause.

2.6 WORK AND WORKMANSHIP

- 2.6.1 To determine the acceptable standard of workmanship, the Architect /Consultant may order the Contractor to execute certain portions of works and services under the close supervision of the Architect / Consultant. On approval, these items shall be labelled by them as guiding samples so that further works are executed to conform to these samples.

2.7 CO-ORDINATION WITH OTHER CONTRACTORS AND AGENCIES

- 2.7.1 The Contractor during the execution of the Works shall co-ordinate with other Contractors, and other Agencies associated with the Project and shall work in harmony with them without causing any hindrance or obstruction or impeding the progress of their work in any way.
- 2.7.2 In respect of the work of other Contractors and Agencies, where the commencement or progress of such work of any other Contractor, or Agency is dependent upon the completion of particular portions of the Contractor's Works or generally upon the Contractor maintaining progress in accordance with the approved coordinated construction programme, it shall be the responsibility of the Contractor to complete such portions and maintain such progress.
- 2.7.3 Should any differences arise between the Contractor and the other Contractors, and Agencies, these shall immediately be brought to the attention of the Architect / Consultants who after reviewing the matters causing the differences will give their decision which shall be final and binding on the Contractor.

2.7.4 Co-ordination with HVAC System Contractor

Co-ordinate with fire alarm contractor to get the Complete information regarding the interference of Fire Alarm /Fire Protection System cable routes/piping routes, with HOT WATER ducting/piping layouts.

2.7.5 Co-ordination with Civil Contractor

To prepare detailed shop drawings for related HOT WATER works in accordance with the civil construction drawings.

To provide all pipes, boxes, sleeves, HOT WATER insert plates, supports, openings etc., necessary for the installation in compliance with construction programme.

To co-ordinate with the civil work contractor, for provision of drain channels, trenches etc.

2.7.6 Co-ordination with Plumbing Contractor

To co-ordinate Plumbing & Sanitary system pipelines crossing with pipes & ducts of HOT WATER System.

2.7.7 Co-ordination with Electrical works Contractor:

To co-ordinate the requirement of electrical power for various HOT WATER works equipment's.

To co-ordinate bus duct crossing of pipes/ducts.

To co-ordinate HOT WATER pipes & ducts routing with regard to electrical works, cabling/conducting routes.

2.7.8 Co-ordination with Owner

To Coordinate with Owner for equipment \ material supplied by the Owner.

2.8 VARIATION IN QUANTITIES & TENDER DRAWINGS:

2.8.1 The quantities for ancillary works given in the schedule and/or in drawings are for the guidance of the tenderer. The contractor shall be paid on the basis of actual quantities of works carried out. However the contractor shall check these quantities before quoting and will bring to the notice of Consultants for any major variation. HOT WATER drawings issued with the tender are diagrammatic only and indicate the general arrangement only. The data given in the drawings and specifications is as exact as could be secured, but its accuracy is not guaranteed. Contractor shall carry out his own computations and provide all such equipment, as required to achieve the specified conditions.

2.9 ADDITIONAL WORKS:

2.9.1 If required the Contractor shall have to execute additional works within the project site to the extent of 25% (Twenty five percent) of the total accepted contract sum. No adjustment of rates shall be made up to this limit and the terms and conditions of the contract shall remain unaltered.

2.10 RESTRICTED AREA:

2.10.1 For all purposes of this contract the site is considered as a Restricted Area. The Contractor shall ensure that he obtains entry passes for all his workmen and employees. The Contractor shall obtain special permission in writing from the Owner if he desires to continue working beyond office hours or on Holidays. The Contractor shall also observe and abide by the security regulations applicable during the currency of the contract.

2.11 PROTECTION OF OTHER CONTRACTOR'S WORKS AND SAFETY OF PERSONNEL AT SITE

2.11.1 Since many other contractors and agencies will be engaged on site and working simultaneously, the Contractor shall ensure at all times that during the execution of his work or during the operations and movements of equipments and supply vehicles and machinery, no damage or injury is caused to the work or property or personnel of other contractors and agencies.

2.11.2 In case of any such loss or damage the Contractor shall take full responsibility for same and shall bear all cost and expenses thereof. Also, the Contractor shall be responsible and liable for all delays caused due to such damage and or injury and for the consequences which the other Contractors and Agencies may have to face or to which they may be subjected to or be accountable for as a result of such delays.

2.12 SAFETY OF MATERIALS

The contractor shall provide proper and adequate storage facilities to protect all the materials and equipment including those issued by the owner against damage from any cause whatsoever.

2.13 MATERIALS SUPPLIED BY THE OWNER

The Contractor shall conduct all checks and carry out all tests and obtain test certificates necessary to ascertain and ensure that the Owner supplied materials are in conformity with the requirements stipulated in the Contract Documents. Should any of the Owner supplied materials obtained from any supplier not be in conformity with the requirements stipulated in the Contract Documents then the Contractor shall not take acceptance of such materials and he shall not incorporate them in the Works unless so specifically authorised by the Owner / Consultants and it shall be the Contractor's responsibility to bring this matter to the immediate attention of the Architect / Consultants and seek his instructions in respect of the disposal of such materials. Should the Contractor fail to comply with this procedure then all costs and/or delays which are a result and consequence thereof shall be to the account of the Contractor.

With respect to reconciliation of Owner supplied materials, the quantities of such materials allowed towards consumption for the Works by the Contractor shall be the theoretical requirement plus permissible wastage. The theoretical requirement shall be determined by measurements made in accordance with the dimensions shown on the Drawings to which the Works shall be executed. Owner supplied materials used due to any reason whatsoever for replacement and/or rectification work shall not be deemed to be theoretical requirement, and the costs in respect of these materials used for such work shall be borne by the Contractor.

2.14 TOOLS, TACKLES, EQUIPMENTS & SCAFFOLDING

All tools, tackles & equipments necessary for the HOT WATER installation and testing shall be provided by the contractor. The quoted rates shall take into account for providing any such equipment, which may not form part of the installation, but are necessary for the execution of the job. Contractor shall be responsible to make his own arrangement to provide scaffolding/ supports etc., necessary for his work. However the contractor may use the civil contractors scaffoldings if available with prior understanding with the civil contractors.

2.15 ACTUAL ROUTE OF PIPE LINES/DUCTS:

The location of the HOT WATER pipe lines/Ducts indicated in the drawing is only indicative. The actual route of pipe lines/ ducts may differ from the plans according to the details of the building construction and the conditions of executions of the installations.

The contractor shall supply and install at his expense all secondary materials and special fittings found necessary to overcome the interference and to supply the modifications on the route of HOT WATER pipe lines/ducts that are found necessary during the work, to the complete satisfaction of the Owner /Consultants.

2.16 DRILLING/CUTTING

The contractor shall have to do all drilling and cutting of walls or other elements of the building for the complete and proper installation of the pipe lines/ducts and other equipments by using electrically operated tools. Manual drilling or chiseling shall be permitted on special request only.

Beams, girders and other principal structural members shall not be cut or drilled unless prior permission has been granted by the Architect /Consultants.

If such drilling and cutting are made on finished surfaces, any marring of the surfaces shall be made good by repair at the HOT WATER Contractor's expense.

2.17 PLASTERING OF WALL CHASES/OPENING ETC.,

All chases and openings made by the contractor for his pipe lines/ducts shall be filled/covered over with cement plaster in reasonable manner, to be finished by the HOT WATER contractor.

Before rough plastering on the pipe surfaces the concealed pipes shall be secured to the wall by using proper supports /clamps.

2.18 MANUFACTURERS

Where manufacturers have furnished specific instructions relating to the materials used in this job, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases.

Where manufacturer's names and/or catalogue numbers are given, this is an indication of the quality, standards and performance required.

For items not covered under the 'List of Approved Makes', contractor shall offer items of first class quality, standards and performance and obtain the approval of Architect /Consultants before procuring them.

Where interfacing occurs, equipment shall be mutually compatible in all respects.

2.19 RATING

Rating of all items shall be appropriate for the conditions on the particular site on which the item will be used. All the equipment shall be fit for continuous work under the most severe conditions of site.

2.20 TESTING:

All types of routine and other tests shall be carried out at the works of the Contractor or the manufacturers of the components. The Consultants shall be free to witness any or all tests, if they so desire.

On the completion of the installation the Contractor shall arrange to carry out various initial tests as detailed below, in the presence of and to the complete satisfaction of the Consultants or his representative, any defects or shortcomings found during the tests shall be speedily rectified or made good by the Contractor at his own expense. The initial tests shall include, but not be limited to the following:

- 2.20.1 To operate and check the proper functioning of all electrically operated components viz. Compressor motor, pumps, air washer fan air handling units etc as well as other electrical motors.
- 2.20.2 To test and check the proper functioning of electrical switch gears, safety and other controls to ensure their proper functioning.
- 2.20.3 To check the air distribution system and to provide design air flow in all areas by adjusting the grilles, diffusers and dampers for air conditioning.
- 2.20.4 To check & balance/adjust the water flow in the water circuits for smooth and noiseless flow.
- 2.20.5 To check the systems against leaks in different circuits, alignment of motor, 'V' belt adjustments, control setting and all such other tests which are essential for smooth functioning of the plant.
- 2.20.6 On the satisfactory completion of all 'Initial' tests the plant should be considered to be 'Virtually Complete' for the purpose of taking over by the employer.
- 2.20.7 In addition to the 'Initial' test the Contractor shall also give two or three continuous running tests of the plant, each of (3) three days duration, and each one during the full specified outside conditions (when the ambient conditions are close to the specified ambient conditions). The first running test may be taken on the completion of the initial test, provided the ambient temperature and humidity are near their peak.
- 2.20.8 The Contractor shall provide all necessary tools, instruments, gauges, flow meter, anemometer, etc as may be required for conducting the various tests. He shall also provide necessary lubricant etc and required personnel for the tests.

2.21 SHOP DRAWINGS & SAMPLES:

- 2.21.0 On the award of the work, the Contractor shall immediately proceed with the preparation of detailed working drawing showing the detail of the equipment that are to be installed and the ancillary works that are to be carried out.
- 2.21.2 Three sets of all such working drawings along with soft copy shall be submitted to the Consultants for approval to ensure that the works will be carried out in accordance with the specifications and drawings, including such changes as may have been mutually agreed upon. All the drawings shall be received by the Consultants for approval within 3 weeks of the award of work. The approval of the drawings by the Consultants shall in no way relieve the Contractor from his obligations to provide a complete and satisfactory plant installation, testing and commissioning as per intent and purpose as laid down in the specifications.
- 2.21.2 Any omissions and/or errors shall be made good or rectified whether or not the drawings are approved. Contractor shall obtain written approval for samples (like grilles/diffusers, valves & controls) and other materials before placing the order. Contractor shall guarantee the specified
Inside conditions at specified outside conditions. Prior to the completion of the work, the contractor shall furnish to the employer (4) four sets of a comprehensive manual, describing all components furnishing a list of spare parts and setting forth in details the instructions for the operation and maintenance of the plant.
- 2.21.3 The Contractor shall also fix in the plant room, neatly typed and framed, instructions in details, for the starting and running of the plant. All equipment shall be suitable for power supply of 415/220 volts, 3 phase, 50 cycles A/C power supply.
- 2.21.4 Any special tools required for the operation or the maintenance of the plant shall be supplied free with the plant including consumables for a period of 6 months from the date of commissioning.

2.22 "AS BUILT" DRAWINGS"

At the completion of work and before issuance of certificate of virtual completion the contractor shall submit Three (3) sets to the Owner /Consultants, layout drawing drawn at appropriate scale indicating the complete HOT WATER system "as installed" also soft copy on CD.

2.23 INSTRUCTION/MAINTENANCE MANUAL

The Contractor shall prepare and produce instruction, operation and maintenance manuals in English for the use, operation and the maintenance of the supplied equipment and installations, and submit to the Owner / Consultants in (4) copies along with soft copy at the time of handing over. The manual shall generally consist of the following:

- a) Description of the project.
- b) Operating instructions.
- c) Maintenance instructions including procedures for preventive maintenance.
- d) Manufacturers catalogues.
- e) Spare parts list.
- f) Trouble shooting charts.
- g) Drawings.
- h) Type and routine test certificates of major items.
- i) One (1) set of reproducible 'as built' drawings.

2.24 COMPLETION CERTIFICATE

On completion of the HOT WATER installation a certificate shall be furnished by the contractor countersigned by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local supply authority.

2.25 GUARANTEE

At the close of the work and before issuance of final certificate of virtual completion by the Owner/ Consultants, the contractor shall furnish written guarantee indemnifying the owner against defective materials and workmanship for a period of **two year after completion** (Defect liability period). The contractor shall hold himself fully responsible for reinstallation or replacement, free of cost to owner, the following:

- 2.25.1 Any defective work or material supplied by the Contractor.
- 2.25.2 Any material or equipment supplied by the owner which is damaged or destroyed as a result of defective workmanship by the contractor.
- 2.25.3 Any material or equipment damaged or destroyed as a result of defective workmanship by the contractor.

2.26 RATE ANALYSIS

At anytime and at the request of the Owner /Consultants the contractor shall provide details or breakdown of costs and prices of any part or parts of the works.

2.27 STAFF

The contractor shall employ competent fully licensed qualified, full time Mechanical/Electrical engineers to direct the work of HOT WATER installation in accordance with the drawings and specifications.

The engineers shall be available at all times at site to receive instructions from the Owner/ Consultant, in the day to day activities throughout the duration of contract. The engineer shall correlate the progress of the work in conjunction with all the relevant requirement of the supply authority.

2.28 WATER AND POWER:

The contractor will make his own arrangement for water and electricity. If arranged by the Owner the same shall be supplied at one point only and contractor shall be required to make his own arrangement for distribution lines required for the work. Recovery for the same shall be made at the prevailing rates based on the meter readings to be installed by the contractor at the source point. Contractor shall arrange at his own cost the fuel oil/or other consumables required for testing the systems.

2.29 SAFETY BARRIERS AND CONSTRUCTION SAFETY

The Contractor shall at his own cost provide for the protection and safety of the persons working in the area, safety barriers around all openings in every location and at the periphery and edges of all slabs, staircases and stairwells, lift shafts, ducts etc., all to the approval and satisfaction of the Owner. However contractor shall take appropriate safety precautions suitable for specific locations/ situations and as instructed by the Owner.

The Contractor shall, in general, be fully responsible for all matters with regard to every form of safety during construction and in connection with the execution of the Works, and the Contractor shall take all necessary precautions and provide at his cost everything necessary to ensure such safety at all times. Should any accidents occur due to the Contractor's failure to comply with such safety requirements and to take all other safety measures necessary, the Contractor shall be fully responsible for all such accidents and he shall bear and pay for all costs and damages in connection therewith and as a consequence thereof. The Contractor shall indemnify the Owner from and against all claims in this regard.

The Owner shall have powers to withhold amounts from payment certificates in case of Contractor's persistent non compliance with provisions of this clause. Also the Owner is empowered to employ another agency at Contractor's cost after one week's notice to implement this Clause in case of Contractor's non compliance with provisions of this Clause.

