

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF HEALTH

**SUPPLY AND INSTALLATION OF 100% FRESH AIR
PACKAGE TYPE AIR CONDITIONING UNITS
AT TEACHING HOSPITAL –
PERADENIYA**

CONTRACT NO. THP/AD/11/2025

BIDDING DOCUMENT

Volume I

Section 01 – Instructions to Bidders

Section 02 – Standard Forms

(Contract)

Section 03 – Conditions of Contract

Volume II – (For the use as “Original” document)

Invitation for Bid

Section 04 – Form of Bid and Qualification Information

Section 05 – Bidding Data and Contract Data

Section 06 – Specifications

Section 07 – Bill of Quantities

Section 09 – Standard Forms (Bid)

Volume III – (For the use as “Copy” of document)

Invitation for Bid

Section 04 – Form of Bid and Qualification Information

Section 07 – Bill of Quantities

ENGINEER

CENTRAL ENGINEERING CONSULTANCY BUREAU
NO.415,
BAUDDHALOKA MAWATHA,
COLOMBO 07.

EMPLOYEE

DIRECTOR,
TEACHING HOSPITAL,
PERADENIYA

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INVITATION FOR BIDS

INVITATION FOR BIDS (IFB)
MINISTRY OF HEALTH
SUPPLY AND INSTALLATION OF 100% FRESH AIR PACKAGE TYPE AIR
CONDITIONING UNITS
TEACHING HOSPITAL, PERADENIYA
 CONTRACT NO.

1. The Director, Teaching Hospital, Peradeniya, on behalf of the Ministry of Health, “Suwasiripaya”, 385, Rev Baddegama Wimalawansa Thero Mawatha, Colombo 10, invites sealed bids from eligible and qualified bidders for the “**Supply And Installation Of 100% Fresh Air Package Type Air Conditioning Units At Teaching Hospital – Peradeniya**”, Contract No: **THP/AD/11/2025** as described in document and estimated to basic cost of Rs. **36 Million (Excluding Contingencies and VAT)**. **Construction period is 91 Days.**

The Site is Located at the premises of Teaching Hospital, Peradeniya. Under this contract, Supply and Installation of 3 Nos of 100% Fresh Air Package Type Air Conditioning Units with necessary ancillary works should be done. For more information, please refer Specifications and Bill of Quantities. Bidders are advised to visit the site prior to price the bid. Work should be carried out without disturbing the day to day activities of the hospital.

2. Bidding will be conducted through **National Competitive Bidding Procedure.**
3. To be eligible for contract award, the successful bidder shall not have been blacklisted and shall meet the following eligibility criteria.
 - Grade – EM 02 or above
 - Specialty – Mechanical Ventilation and Air Conditioning (MVAC)
4. Qualification requirements to qualify for contract award include be eligible for contract award.
 - Average annual volume of construction work performed in the last five years shall be at least **Rs. 53M.**
 - Experience in the construction of at least one contract of a similar nature and to a value of not less than **Rs.15 Million** to the Works over 10 years. **Attach as an annex.**
 - The minimum amount of liquid assets and/or credit facilities as exclusive of any advance payments which may be not less than **Rs. 36M.** Credit facility should be addressed to Director, Teaching Hospital, Peradeniya and should be exclusive of this particular project.
 - Minimum persons with qualifications and experience.
 - As the estimate cost for the procurement exceeds the Rs.5 million the bidder shall register at the registrar of Public Contract Sri Lanka at the time of submission of bids (PCA 3) and forward the certificate.

Managerial / Technical

1. Engineer Assistant (Mechanical) (Full time) – NDT, NDES, HNDE (Mechanical) Engineering or equivalent qualification with minimum 5 years Experience.
5. Interested bidders may obtain further information from Director, Teaching Hospital, Peradeniya Tel. No. 081-2388001 and can inspect the Bidding Document at the address given below from **09.00 hrs to 15.00 hrs**
6. A complete set of Bidding Documents in English language may be purchased by interested bidders on the

submission of a written application to the **Director, Teaching Hospital, Peradeniya**, from **2025.05.23** until **2025.06.12** from **09.00 hrs to 15.00 hrs**. Upon payment of a non-refundable fee of **Rs. 4,000.00** to the **Shroff, Teaching Hospital, Peradeniya**. The method of payment will be cash only.

7. Bids shall be delivered to the address below, on or before **2025.06.13 at 14.00 hrs** late bids will be rejected. Bids will be opened soon after closing in the presence of the Bidders or Bidder's representatives who choose to attend.
8. Bid shall be valid up to 91 days from Bid closing date **2025.06.13 (date)** or any extended period requested by client.
9. All bids shall be accompanied by a "Bid security" of **Rupees Five Hundred and Twenty Thousand Only (Rs. 520,000.00)**. Bid Security shall be valid up to 119 days from Bid closing date to..... (date)

The address referred to above is,

**Director,
Teaching Hospital,
Peradeniya.
Tel. No. 081-2388001**

Section - 4

FORM OF BID AND QUALIFICATION INFORMATION

FORM OF BID

**SUPPLY AND INSTALLATION OF 100% FRESH AIR PACKAGE TYPE AIR
CONDITIONING UNITS
TEACHING HOSPITAL, PERADENIYA**

CONTRACT NO.

To: Director,
Teaching Hospital,
Peradeniya.

Gentleman,

1. Having examined the Standard Bidding Document - Procurement of Works (CIDA/SBD/01-Second edition, January 2007) ,Schedule for Conditions of Contract, Specifications, Drawings and Bill of Quantities and Addenda for the execution of the above-named Works, we the undersigned, offer to execute and complete such Works and remedy any defect therein in conformity with the aforesaid Conditions of Contract, Specifications, Drawings, Bill of Quantities and Addenda for the sum of Sri Lankan Rupees (LKR Rs.) or such other sums as may be ascertained in accordance with the said Conditions.
2. We acknowledge that the Contract Data forms part of our Bid.
3. We undertake, if our Bid is accepted, to commence the Works as stipulated in the Contract Data, and to complete the whole of the Works comprised in the Contract within the time stated in the Contract Data.
4. We agree to abide by this Bid for the period of 91 days from the date fixed for receiving or any extended period and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
6. We understand that you are not bound to accept the lowest of any Bid you may receive.

Dated this..... Day of 2024 in the capacity of.....Duly
authorized to sign bids for and on behalf of

.....
(IN BLOCK CAPITAL)

Signature :
Address :
.....
.....
Witness :
.....

QUALIFICATION INFORMATION

(To be completed and submitted by the Bidder with the Bid)

ICTAD Registration	
Registration number	<i>(Attach copies of relevant pages from the registration book) (if available)</i>
Grade	EM 2 or Above
Specialty	Mechanical Ventilation and Air Conditioning (MVAC)
Expiry Date	
Blacklisted Contractors	
Have you been declared as a defaulted contractor by NPA or any other agency? (Yes/No)	
If yes provide details	
VAT Registration Number	
Legal status	<i>(Attach relevant status copies, as annex)</i>
Value of Construction works Performed in last 10 years	<i>(Attach certified copies of certificate of completion, etc. and other documents such as profit-loss and income expenditure statement)</i>
Year 2023	
Year 2022	
Year 2021	
Year 2020	
Year 2019	
Year 20....	
Year 20....	

Value of similar works completed in last 10 years (indicate only the three largest projects)	1. Value Rs..... Year 2. Value Rs..... Year 3. Value Rs..... Year (Attach certified copies of Letter of award & certificate of completion)		
Credit Facility			
Qualification and experience of Key staff - Site & Head Office (Permanent, Contract Basis & Consultants)	Category, Experience and Qualifications	Required Nos.	Proposed by bidder (Name, experience and Qualifications)
	1. Engineer Assistant (Mechanical) (Full time) – NDT, NDES, HNDE (Mechanical) Engineering or equivalent qualification with minimum 5 years Experience.	01	(Attach certified copies of key staff attached to the project)

Section - 5

BIDDING DATA AND CONTRACT DATA

G. BIDDING DATA**Instructions to Bidders****Clause Reference
(1.1)**

The Employer is
Name & Address: **Director,
Teaching Hospital, Peradeniya**

This work consist of Supply and Installation & testing and commission of 3 no of 100% Fresh Air Package Type Air Conditioning Units with necessary ancillary works should be done.

a. For more information, Please refer the Bill of Quantities.

(1.2) Intended Completion Date is **91** Days from the Start Date.

(1.3) The office for collection of bid form is

Teaching Hospital, Peradeniya.

The non-refundable Bid fee is **Rupees 4000.00**

The Bid forms will be issued **until**

(2.1) The source of funds is **Government of Sri Lanka**

(4.2) To be eligible for contract award the successful bidder shall not have been blacklisted and shall meet the following eligibility criteria

- * Specialty – Mechanical Ventilation and Air Conditioning (MVAC)
- * Grade – EM 02 or above

(4.3) The Following information shall be provided in Section 4 for the bidder (if available)

- * CIDA Registration
 - Registration number:
 - Grade
 - Specialty
 - Expiry Date
- * VAT Registration number
- * Construction program
- * Legal status (Sole proprietor, partnership, company etc.)
- * Total monetary value of construction work performed for each of the last five years;
- * Experience in works of a similar nature and size for each of last five years;
- * Major items of construction equipment proposed to carryout the contract; (if specified equipment be needed)
- * Qualifications and experience of key site management and technical personnel proposed for the contract
- * Any other

(4.4)

Post qualification criteria:

The following minimum qualification criteria shall be met by the bidder to qualify for the award of contract.

- Average annual volume of construction work performed in the last five years shall be at least **Rs. 53 M.**
- Experience in the construction of at least one contract of a similar nature and to a value of not less than **Rs.15 Million** to the Works over 10 years. **Attach as an annex.**
- The minimum amount of liquid assets and/or credit facilities as exclusive of any advance payments which may be not less than **Rs. 36 M.** Credit facility should be addressed to Director, Teaching Hospital, Peradeniya and should be exclusive of this particular project.
- Minimum persons with qualifications and experience

Managerial / Technical

1. Engineer Assistant (Mechanical) (Full time) – NDT, NDES, HNDE (Mechanical) Engineering or equivalent qualification with minimum 5 years Experience.

(8.1)

Content of Bidding Document

Content of the bidding document changed as follows to fulfill bidders requirement in submission of Bid.

The Bidding document consists of three volumes (Volume 1, Volume 2 & Volume 3) and comprise the documents listed below.

Volume I

Section 1 – Instruction to Bidders

Section 2 - Standard Forms (Contract)

Section 3 - Condition of Contract

Volume II

Invitation for Bids

Section 4 - Form of Bid and Qualification Information

Section 5 - Bidding Data and Contract Data

Section 6 - Specifications

Section 7 - Bills of Quantities and Technical Schedules

Section 9 - Standard Forms (Bid)

Volume III

Invitation for Bids

Section 4 - Form of Bid and Qualification Information

Section 7 - Bills of Quantities and Technical Schedules

(9.1)

Employer's address for the purpose of clarification is;

Name : Director

Address : Teaching Hospital, Peradeniya.

Tel/Fax : 081-2388001

(11.1)

The language of the bidding document shall be English.

(12.1)

The Bid submitted by the bidder shall comprise the following:

- (A) enclosed in the envelope marked as “ORIGINAL”;
 - (a) Volume II
 - (b) Bid security or Bid-Securing Declaration as specified
- (B) enclosed in the envelop marked as “COPY”
 - (a) Volume III

(13.3) Only VAT will be paid.

VAT component shall not be included in the rates. The amount written in the Form of Bid shall be without VAT. However, VAT component shall be shown separately at the end of the BOQ.

(15.1) The Bid shall be valid up to 91 Days from closing date of Bid.

(16.1) Bid shall include a Bid Security using the form included in Section 9.

(16.2) Bid Security shall be;

- For an amount **Rs. 520,000.00.**
- Valid until 119 days from closing date of Bid.

Securities and guarantees issued by an agency acceptable to employer using the forms for bid security (unconditional guarantee) included in section 09 standard forms in favor of Director, Teaching Hospital, Peradeniya. The agencies acceptable to the Employer are :

- Commercial Bank operated in Sri Lanka approved by the Central Bank of Sri Lanka.
- Constructions Guarantee Fund

Alternatively, the Bidder can pay cash to Shroff of **Teaching Hospital, Peradeniya.**

No interests will be paid on cash deposits.

(17.0) Pre Bid meeting will be held at Director Office, Teaching Hospital, Peradeniya at 02.00 pm on 02/06/2025.

(19.2) a The Employer’s address for the purpose of Bid submission is:
 Director,
 Teaching Hospital, Peradeniya.

(19.2) b Contract Name: **Supply And Installation Of 100% Fresh Air Package Type Air Conditioning Units At Teaching Hospital, Peradeniya**

Contract No. :

(20.1) The deadline for submission of Bids shall be 14.00 hrs on 13/06/2025.

(34.0) The amount of **Performance security is 5% of the Initial Contract Price.**

The form acceptable is sample format which is in volume I – Section 2, Standard Forms.

Securities and Guarantees issued by an agency acceptable to employer using the forms for Performance Bond (Unconditional Guarantee) included in Volume I- Section 2, standard forms. The agencies acceptable to the Employer are

- Commercial Bank operated in Sri Lanka approved by the Central Bank of Sri Lanka.
- Constructions Guarantee Fund

Alternatively, the Bidder can pay cash to shroff of the **Teaching Hospital, Peradeniya.**

No interest will be paid on cash deposits.

(35.1) The advance payment security is 20% of the initial Contract price excluding provisional sum.

Securities and Guarantees issued by an agency acceptable to employer using the forms for Advance Payment Bond (Unconditional Guarantee) included in volume I – Section 2, Standard Forms. The agencies acceptable to the Employer are

- Commercial Bank operated in Sri Lanka approved by the Central Bank of Sri Lanka.
- Constructions Guarantee Fund

(36.0) IESL is the authorized agent for appointing an adjudicator.

CONTRACT DATA

(Please note that the Clause nos. given hereunder is that of Conditions of Contract)

(1.1) The Employer is

Name : Director
Teaching Hospital, Peradeniya.

Address : **Teaching Hospital, Peradeniya.**

(1.1) The Engineer is

Name : **The General Manager**

Address : **Central Engineering Consultancy Bureau**
: **No.415, Bauddhaloka Mawatha,**
: **Colombo 07.**

Name of Engineer's Representative: **Additional General Manager**
(Special Project-1)

(1.1) The Works mainly consists of

Works mainly consists of Supply and Installation & testing and commission of 3 no of 100% Fresh Air Package Type Air Conditioning Units At Teaching Hospital, Peradeniya

a. For more information, Please refer the Bill of Quantities.

(1.1) Site is located at **Teaching Hospital, Peradeniya.**

The Start Date shall be **fourteen (14) Days** from the Letter of Acceptance.

(8.1) Schedule of other contractors : None

(9.1) Schedule of Key Personnel:

Minimum persons with qualifications and experience to be defined,
Managerial / Technical

1. Engineer Assistant (Mechanical) (Full time) – NDT, NDES, HNDE (Mechanical) Engineering or equivalent qualification with minimum 5 years Experience.

- (13.1) The minimum insurance cover shall be:
- (a) The minimum cover for insurance of the Works and of Plant and Material is **110% of the Initial Contract price**.
- The maximum deductible for insurance of Works and of Plant and Material is **5% of initial Contract price**.
- (b)
- The minimum cover for loss or damage to Equipment is “**Cost of equipment**”
 - The maximum deductible for insurance of Equipment is **5% of the minimum cover for equipments**
- (c) The minimum cover for personal injury or death:
- For third party and employees of the Employer and other persons engaged by the Employer in the Works is **Rupees Five Hundred Thousand** per event. Number of events unlimited.
- (d) The minimum cover for insurance of other property (other than the site):
- Five Hundred Thousand
- (13.2) (a) The minimum cover for personnel injury or death,
- For the Contractor’s workmen is Rs. **500,000.00** per event. Number of events unlimited.
 - Contractor’s employee’s other than workmen is Rs. **500,000.00** per event. Number of events unlimited.
- (17.1) The Intended Completion Date for the whole of Works shall be **91 Days from the Start Date**.
- (21.1) The Site Possession Date shall be **Fourteen (14) Days** from Letter of Acceptance.
- (27) The Contractor shall submit a realistic Construction Programme made out from MS Project software for the Works within **Seven Days** of delivery of the Letter of Acceptance. Critical path/paths must be clearly shown in the programme. Soft copy must be submitted to the Engineer at the time of submission of hard copy of construction programme.
- The period between Programme update is **30 Days**. But Contractor shall submit a revised programme whenever the previous programme is inconsistent with actual progress.
- The amount to be withheld for late submission of an updated Programme is **2% of the Initial Contract Price**.
- (35.1) The Defects Liability Period is **365 Days**.

- (39.2) Engineer may order variations up to a total cumulative bill value including variation not exceeding 110% of initial contract sum
- (40.2) In fixing the appropriate new rates, mark up for overheads & profits shall be limited to maximum of 16% of the “Basic Cost” of such items. The Basic cost means cost of materials, labour and equipments.
In fixing such “Basic cost” the Engineer shall use the rates for labour as given below and prices for materials and equipments shall be used the prevailing market prices.”
- | Category | Rate (Rs) |
|--------------|-----------|
| Skill Labour | 3,250.00 |
| Labour | 2,500.00 |
- (47.1) Price adjustments not applicable.
- (48.1) The retention from each payment shall be **Ten percent** of the certified work done.
The limit of retention shall be **Five percent** of the Initial Contract Price.
- (48.3) Not applicable.
- (49.1) The liquidated damages for the whole of the Works shall be **0.05% of the Initial Contract Price per Day**.

The maximum amount of liquidated damages for the whole of the Works shall be **Ten percent** of the Initial Contract Price.
- (52.1) Performance Security shall be provided to the Employer no later than the date specified in the letter of Acceptance and shall be issued to an amount to Five percent of the Initial Contract Price in the form of an unconditional guarantee acceptable to The Employer. The Performance Security shall be valid unit a date 28 Days beyond The issuance of final certificate under sub clause 55.
A Performance Security equivalent to the remaining value of the total maintenance cost shall be maintained by the Contactor during the full maintenance period.
- (55.2) Contractor shall enter in to the maintenance agreement with the Employer as per the Contract before the expiring of Defect Liability Period and failure shall be considered of a breach of contract.
- (58.1) Schedule of Operating and Maintenance Manuals. – As built drawings and operation manuals shall be submitted within 14 days after completion of each activity
- (60.1) The percentage to apply to the value of the work not completed, representing the Employer’s additional cost for completing the Works, is **Twenty Five percent** of Balance work according to the Initial Contract Price.
- (63.7) The attendance fee payable to the contractor on nominated/specialized sub contract work shall not exceed 8%

SECTION 6

SPECIFICATIONS

SPECIFICATIONS FOR AIR CONDITIONING SYSTEM

PART 1 - GENERAL TECHNICAL SPECIFICATION

1.0 INTRODUCTION

This section consists of the general rules that apply to the design, manufacture, shop testing, delivery to site, erection, site testing, commissioning, maintaining and handing over the material, equipment, plants and services required for Supply and Installation of 3 no of 100% Fresh Air Package Type Air Conditioning Units, Teaching Hospital, Peradeniya.

1.1 APPLICABLE PUBLICATIONS & STANDARDS

Standards and Publications of the following organizations form part of these Specifications to the extent indicated by the references.

BS	-	British Standards
ASHRAE	-	American Society of Heating Refrigeration and Air Conditioning Engineers
ASTM	-	American Society for Testing Materials
NFPA	-	National Fire Protection Association
ANSI	-	American National Standards Institute
SMACNA	-	Sheet Metal and Air Conditioning Contractor's National Association
ARI	-	Air Conditioning and Refrigeration Institute
AMCA	-	Air Moving and Conditioning Association
ASME	-	American Society of Mechanical Engineers
DIN	-	Deutches Institute for Normung
UL	-	Underwriters Laboratories
AFI	-	Air Filters Institute
IEC	-	International Electro-Technical Commission

1.2 CO-ORDINATION

The Contractor shall co-ordinate the air conditioning installation with installation work of all trades involved in the project to avoid interference with lighting fixtures, piping, ducts, etc.

1.3 FIRE RETARDMENT

Material and equipment for fire retardment, shall be installed in accordance with NFPA standard No. 90A, and No. 204.5 or as specified otherwise hereinafter.

1.4 SUBMISSION FOR APPROVAL

The Contractor shall submit the following for the Engineer's approval

- Selection Data/Equipment Data
- Samples of Materials, Component and Fixtures.
- Shop drawings
- Assembly, Erection and Installation Drawings and Manuals
- Schematic & Interconnection Diagrams
- Certificate of Compliance/Test Reports
- Operation and Maintenance Manuals
- Electrical power supply requirement

Selection data shall be submitted and shall consist of engineering selection tables provided by the manufacturer. The Contractor shall indicate in these, the items selected and their designation for cooling equipment. It shall be made quite clear as to which factors have been taken into account by the manufacturer to correct the listed gross capacity into the net capacity required, due to extreme outside temperature, altitude, enthalpy of entering and leaving air, fan required, fan static pressure, fan RPM, fan motor and temperature differential between supply air entering and return air leaving the room.

1.5 POWER FACTOR IMPROVEMENT

Each motor of rating 5 KW and above shall be fitted in parallel with a power-factor improvement capacitor of optimum rating conforming to motor manufacturer's recommendations to avoid self-excitation and its harmful effects.

Capacitors shall be manufactured to IEC 70 and 70A and shall comprise an oil impregnated, self-healing metalized film dielectric, enclosed in an air-cooled, vacuum sealed metal case. Losses shall be less than 0.5 watts per KVA. Capacitors shall incorporate a disconnection system which will disconnect the capacitor internally from the terminal in the event the self-healing capacity is unable to clear a breakdown.

1.6 VIBRATION & NOISE

Vibration and noise control of equipment installed is a prime importance. The Contractor shall pay special attention to the problem of vibration and noise and is required to guarantee that the installation will not generate vibration or noise of the intensity to exceed the specified limits or cause annoyance to the occupants in the area.

1.7 SCOPE OF WORK

The scope of work described herein shall be applicable to the works of Supply, installation, testing and commissioning of water cooled, 100% fresh air package type air conditioner units.

- a. Supply and installation of 3 no of water cooled, 100% fresh air package type air conditioner units.
- b. Connecting the existing condensing water piping system to the new plants.
- c. Connecting the existing ducting system (Modified the existing ducts).
- d. Testing and commissioning of package units.

1.8 WATER COOLED, PACKAGE TYPE AIR CONDITIONER UNIT

The water cooled package type air conditioning unit shall consist cooling coil, compressor/s, condenser and other accessories. Origin of air conditioning unit shall be **Japan, Europe or USA.**

(a) General

The air conditioning unit shall be of the water-cooled single package vertical type. The unit shall be completely factory package with unit mounted compressor motor starters, cooler, compressor and condenser. It shall incorporate a control system with factory mounted multi-position switch for utilization of economizer cycles for efficiency and energy saving. The package unit shall be factory assembled, charged and tested with a full operating refrigerant and oil charge. For environmental reasons the refrigerant shall be R-22 or R-134A. All sequence controls and electrical interlocks shall be incorporated for proper operation of the system.

(b) Compressor Assembly

Compressor shall be serviceable hermetic type equipped with suitable vibration isolators, and shall be located in a sound-attenuating compartment within the cabinet. Cabinet shall be zinc surface alloyed steel which is bonderized and painted with a modified alkaline enamel. Unit section shall be insulated to prevent sweating and to muffle sound.

(c) Drip Pans

Drip pan shall be made of galvanised sheet steel not lighter than 1.5mm. Casings shall be made of steel not lighter than 1.2mm. Drip pans and casings shall be phosphate treated and prime coated at the factory. Casings shall be made in sections where required for ease in handling. All parts shall be heavily braced and stiffened to prevent vibration and hold all working parts rigidly on line. Casing sides shall be internally insulated on all surfaces between the cooling coils and the unit outlets. Insulation shall be of the glass fibre type, having a thickness not less than 1-inch and a density not less than 25kg per cubic metre. Insulation shall be secured to the casing with adhesive applied over the entire back and shall be coated with an asphaltic, plastic, or neoprene coating on the air stream side. All seams and joints in insulation shall be completely sealed. The drip pan shall be adequately insulated, finished with a vapor barrier to prevent sweating.

(d) Filters

The air filters shall be of the viscous impingement type unless otherwise specified in the detailed specification. The medium shall be manually cleanable by means of washing and held in place by aluminium wire or expanded metal screens. Filters shall be selected on a maximum velocity of 1.5 m/sec, and if necessary be arranged in V-formation.

Filters are to be fitted in supporting frames with suitable provision for holding the cells securely in place without permitting leakage of air and arranged for convenient insertion and removal of filters from the side or the front according to accessibility.

The air filter system should provide a high degree of dust and dirt removal including particle borne bacteria from air supplied to the room and minimise dirt deposits on the air conditioning plant.

(e) Insulation

The compressor motor and miscellaneous piping shall be factory insulated by the manufacturer.

(a) Cooling Tower

The existing cooling towers and condenser pumps shall be used for new package units.

1.9 NOISE

The Contractor shall make all necessary provision and take all precautions to eliminate the generation and transmission of noise and/or vibration from or by any items of plant installed under the contract. Refer to clause "Mounts" which defines vibration isolation.

The areas in which the air conditioning units are installed, a noise level standard within these areas of not more than 45 NR is to be achieved.

The sound attenuating measures adopted and anti-vibration devices used shall be in accordance with the best trade practice and the degree of silencing and dampening obtained shall be to the entire satisfaction of the Engineer.

The minimum degree of acoustic insulation of ducts, anti-vibration mounting equipment and other measures specified elsewhere shall anyhow be provided.

Any item of equipments that the Consultant observed the noise level is high, shall be replaced at no additional cost to the client.

1.10 HANDING OVER DOCUMENTS

The final handing over documents to be submitted by the Contractor on completion of the installation shall comprise the following:

- a) Operation and maintenance manuals (03 copies)
- b) Commissioning sheets (03 copies)
- c) Test reports (03 copies)
- d) As built drawings (03 copies)

These documents should be supplied to the Engineer within 30 days on issue of taking over certificate.

1.11 SITE TESTING AND COMMISSIONING

Bidders shall submit with the Bid, a complete proposal with time schedule for testing and commissioning of the air conditioning system. The program shall include a trial operation of all main equipment with any necessary adjustments to ensure that the system is working correctly. The Contractor shall provide all instruments and equipment together with commissioning engineers and adequate assistance for carrying out the commissioning and testing activity, which shall be done in accordance with the recommendations of relevant Standards. If any portion the works fails to pass the tests, the Contractor shall, at his own expense carry out such alterations or replacements as are required to the satisfaction of the Engineer.

The Engineer shall be at liberty to call for further commissioning when such alterations have been completed to their satisfactory. The Contractor shall provide commissioning spares at his own expense.

Spare parts earmarked for maintenance shall not be used during this period.

1.12 MAINTENANCE CONTRACT

Bidder shall indicate his prices for the same in the schedule for Service and Maintenance after defect liability Period under Annual fee for providing comprehensive maintenance service. Prices shall include for the cost of maintaining required Performance Security. Further the bidder shall submit a sample maintenance sheets along with his bid. Contractor shall enter into a maintenance agreement to maintain the works after the Defect Liability Period for five years.

Bid shall submit the terms and charges for service and maintenance contract along with the Bid.

SECTION - 07

BILL OF QUANTITIES

PREAMBLE TO THE BILL OF QUANTITIES

1. The Conditions of Contract, the Specifications are to be read in conjunction with the Bill of Quantities.
2. The cost of complying with all conditions, obligations and liabilities described in the Conditions of Contract and the Specifications and the Bill of Quantities **including all overhead charges (excluding VAT), profit and Preliminaries** and carrying out the work as described shall be deemed to be spread over and included in the prices or sums stated by the Bidder in the Bill of Quantities. VAT should be separately added.
3. If the Bidder failed to price any Items in the Bill of Quantities then the cost of the work under such Item shall be held to be spread over and included in the prices given against other Items of work.
4. When trade names, brand and/or catalogue numbers are referred to, sole preference to any material or equipment is not intended. Any other material or equipment may be used, provided that the characteristics of type, quality, appearance, finish, method of construction and/or performance is equal to or superior to specify.
5. Whenever the method of measurement is not clear from documents available, the principles as given in the Sri Lanka Standard 573, 1999, Method of Measurement of Building Work shall be applicable.
6. All items of work shall comply exactly with the Contract unless otherwise approved by the Engineer and the rates and sums inserted in the Bill of Quantities shall be deemed to apply to the work as specified. If, for his convenience or reasons of availability, the Contractor proposes and the Engineer approves the use or provision of alternative items, materials or method of working, or equivalent or superior quality to those specified in the Contract, the rates and sums inserted in the Bill of Quantities shall not in any case be increased as a result.
7. The quantities set out in the Bill of Quantities are provisional and cover the approximate scope of the work which is anticipated to be performed by the Contractor. The actual quantities used for final measurement purposes will be determined by the Engineer by measurement of the work completed by the Contractor.
8. Where, for his own purposes or due to his own default, the Contractor carries out the Works in such a manner that the quantity of any Item of work in particular component to be measured for payment purposes differs from that directed by the Engineer, then payment shall be made according to the lesser of the actual quantity and that directed. An excess quantity in one part of the component shall not, however, be allowed to offset a deficit elsewhere in the same component for measurement purposes.
9. Where the determination for payment purposes of the quantity of any Item of work depends upon the measurement of existing features or ground levels and the like, then prior to carrying out any operations which might affect such measurement, the Contractor shall first take such levels and measurements as the Engineer may direct and, after the Engineer has had the opportunity to check the same, they shall be certified as agreed by both the Engineer and the Contractor.
10. In the event that the Contractor fails to observe the above procedure, the Engineer shall determine the quantity to be assumed for payment purposes using the best information available to him, and his decision in the matter shall be final.

11. Selected Bidder shall comply with the arrangement of work in the buildings and be ready to work part by part as required by the Authorities of Teaching Hospital, Peradeniya.
12. Rates in Bill of Quantities shall include all necessary material for supply, installation and testing & commissioning of Air Conditioning units etc.
13. Except where specifically stated, all costs associated with provision of all holes, openings, chases and ducts in other builders' work required for installation and make them good , shall be included in the rates.
14. All HVAC units and accessories should comply with ASHRAE Handbook, Manufacturer's guarantee should be produced.
15. The Bills of Quantities should therefore, be priced to reflect all factors that would affect the bid and the progress of the works.
16. All electrical accessories should comply with relevant BS/IEC standards. For electrical accessories, manufacturer's guarantee should be produced if necessary.
17. The wiring installation shall comply with the requirements of IEE Wiring Regulations, latest edition.
18. Bidder should pay special attention to the work to be carried out, causing minimum disturbance or hindrance to the normal functions and activities of the users of the Teaching Hospital, Peradeniya.
19. Screens should be provided to prevent dust escaping from working areas.
20. Metric units are used throughout the Bill of Quantities for measurement purposes unless otherwise indicated. Abbreviations used in the Contract are as follows:-

mm	-	Millimeter
m	-	Linear meter
kg	-	Kilogram
m ²	-	Square meter
m ³	-	Cubic meter
nr	-	Number
Rs.	-	Sri Lankan Rupees
Cts.	-	Cents
P. S.	-	Provisional sum
L. S.	-	Lump Sum

SUPPLY & INSTALLATION, TESTING & COMMISSIONING OF 100% FRESH AIR PACKAGE TYPE AIR CONDITIONING UNITS, TEACHING HOSPITAL PERADENIYA

BILL OF QUANTITY

ITEM	DESCRIPTION	QTY	UNIT	RATE Rs. Cts.	AMOUNT Rs. Cts.
Note	<i>The manufacturer of the equipment shall have at least ten (10) years experience in the design and manufacture of same type of equipments</i>				
Note	<i>The make of equipments offered shall have satisfactory proven service record in Sri Lanka at least for last five (5) years</i>				
Note	<i>Rate shall for all cost of supply including CIF, CID, PAL, clearing charges, transport charges, erection, factory testing, site testing, commissioning as per specification and drawings and profits etc.</i>				
Note	<i>Rate shall for cost of providing security bonds, guaranties, insurance of personnel, property, material against accidents, damage, trespass or theft.</i>				
Note	<i>Rate shall for the cost of all temporary works such as scaffolding etc. associated civil and electrical works related to the installation of all mechanical systems such as drilling of suitable holes in walls, breaking of any parts of walls and finishing works of the same such as plastering, painting, etc. electrical power / control wiring, services connections, etc.</i>				
1.0	Remove existing 3 no of water cooled indoor package units and hand over to hospital with inventory list Water Cooled, 100% Fresh Air, Package Type Air Conditioners (Only Indoor Unit) - ORIGIN IN USA, EU OR JAPAN Supply and installation of Water cooled, Packaged, Top discharge Indoor unit (Only indoor unit) having minimum cooling capacity 30Ton, 3000 cfm, 100% fresh air type, in built filters [pre, bag] necessary pipe and duct connections including non return dampers and dehumidifiers etc. Heating coil capacity 20 kW , Minimum ESP - 250 Pa.(Inbuilt booster fan with VFD)	Lot	Item	
2.0	(a) Supply Cost	3	nr
3.0	(b) Installation Cost	3	nr
4.0	Connecting the existing condensing water piping system to the new plants. (Modified the existing pipes)	Lot	Item	

ITEM	DESCRIPTION	QTY	UNIT	RATE Rs. Cts.	AMOUNT Rs. Cts.
5.0	Connecting the existing ducting system (Modified the existing ducts)	Lot	Item	
6.0	Miscellaneous work		P/s		1,000,000.00
7.0	Testing and Commissioning		Item	
	Total cost of Air Conditioning System Carried to main Summary			

**SUPPLY & INSTALLATION, TESTING & COMMISSIONING OF 100% FRESH AIR PACKAGE TYPE AIR
CONDITIONING UNITS, TEACHING HOSPITAL PERADENIYA**

BILL OF QUANTITIES

MAIN SUMMARY

Bill No	DESCRIPTION	AMOUNT	
		Rs	Cts
A	Supply and Installation of S100% Fresh Air Package Type Air Conditioning Units		
(a)	Sub Total 1		
(b)	Less: Provisional Sum	1,000,000.00	
(c)	Sub Total II (a-b)		
(d)	Less: Discount if any (..... %)		
(e)	Sub Total III (c-d)		
(f)	Add : Provisional Sum (b)	1,000,000.00	
TOTAL BID SUM WITHOUT VAT			

Total Bid Sum to be taken in to Form of Bid (Page No. 03) in words Rupees:

..... only.

Amount of V.A.T.(Prevailing VAT) for the Total Bid Sum :- Rs.

Bidder's VAT Registration No:

.....
Signature of Bidder

Name and Address of Bidder: Date.....

.....
.....
.....

.....
Signature of Witness (1) Signature of Witness (2)

Name and Address of Witness (1) Name and Address of Witness (2)

.....
.....
.....

Date..... Date.....

TECHNICAL SCHEDULE

SUPPLY & INSTALLATION, TESTING & COMMISSIONING OF 100% FRESH AIR PACKAGE TYPE AIR CONDITIONING UNITS, TEACHING HOSPITAL PERADENIYA

TECHNICAL SCHEDULE

Item No	Items	Particulars		Remarks
		As specified	As offered	
1.0	<u>100% Fresh air Pacakge Type</u>			
	<u>Air Condition</u>			
1.1	<u>General</u>			
	Manufacturer's Name			
	Country of Origin	USA / EU / JAPAN		
	Model /Year			
	Type			
	Refrigerant used			
	Refrigerant charge			
	Minimum Cooling Capacity (TR) at average local design conditions			
	Coefficient of Performance / (COP -kW Refrigeration / kW Electrical Power):			
	Electrical Ratings			
	Rated Power Input / (kW)			
	Unit - Minimum Circuit Amp.			
	Capacity Control Steps			
	Condenser Evaporator Fouling Factor			
	Noise Level			
	Basic Dimensions			
	Overall Weight / (kg)			
	Vibration Absorbing Mountings			
1.2	<u>Compressor</u>			
	Manufacturer's Name			
	Country of Manufacture			
	Model /Year			
	Type	Rotary screw		
	No. of Compressors			
	Speed / (rpm)			
	Rated Power Input / (kW)			
	Suction Temperature / (°C)			
	Discharge Temperature / (°C)			
	Minimum operating capacity			
	(percentage of total) / (%)			
	Number of cylinders			
	Lubrication system			
	Compressor protections			
	Efficiency/(%)			

Specification Sheet for 100% Fresh Air, Water-Cooled, Vertical Top Discharge Package Unit.

No.	Item	Required Specification	Offered Specification
1	Type of Unit	100% Fresh Air, Water-Cooled, Vertical Top Discharge Package Unit.	
	General		
2	Manufacturer's Name	To be specified by the bidder	
3	Country of Origin	Should be USA / EU / JAPAN	
4	Model / Year	Should be specified by the bidder, not older than 1 year	
5	Refrigerant Used	R-134a / R-410A or eco-friendly equivalent	
6	Refrigerant Charge	To be specified	
7	Minimum Cooling Capacity	Minimum 30 TR at local design conditions (35°C ambient).	
8	Airflow & ESP	3000 CFM with 250 Pa External Static Pressure (inbuilt VFD booster fan).	
9	Coefficient of Performance (COP)	Minimum 3.0 or above	
10	Sensible Heat Ratio (SHR):	≥ 0.90	
11	Electrical Ratings	400V / 3Ph / 50Hz	
12	Rated Power Input	$\leq 36\text{kW}$, To be specified (kW)	
13	Minimum Circuit Amp.	To be specified	
14	Capacity Control Steps	Should be VFD	
15	Fouling Factor (Cond/Evap)	To be specified	
16	Noise Level	$\leq 45\text{NR}$ in occupied areas.	
17	Basic Dimensions	To be specified	
18	Overall Weight	To be specified (kg)	
19	Mountings & Vibration Preventions	Floor Standing (Should be compatible for existing arrangement) & Required (rubber or spring type)	
	Compressor		
20	Make & Model of the compressor	To be specified	
21	Country of Manufacture	To be specified	
22	Compressor Type	Semi-Hermetic - Rotary screw Suitable for continuous-duty operation with low noise and vibration	
23	No. of Compressors	Minimum 2 for redundancy	
24	Compressor Speed	To be specified (rpm)	
25	Compressor Rated Power	To be specified (kW)	
26	Suction Temperature	To be specified (°C)	
27	Discharge Temperature	To be specified (°C)	
28	Minimum Operating Capacity	$\leq 25\%$ of total capacity	
	Compressor Lubrication System	Oil-injected with auto oil return	
29	Compressor Protections	High/Low Pressure, Overcurrent, Overheat, Phase failure	
30	Efficiency	$\geq 85\%$	
	Filters		
31	Pre-filter	Washable G4 or equivalent	
32	Coil Tube Material:	Copper (seamless) Coils shall be suitable for continuous use in high-humidity and medical-grade environments.	
33	Fin Material:	Aluminum fins with anti-corrosive hydrophilic or epoxy coating (Blue Fin / Gold Fin preferred)	
34	HEPA Filter	$\geq \text{H13}$ efficiency	
35	Extra Set of Filters	One full extra set (Pre-filter + HEPA) must be supplied	

36	Others		
37	Control Display & Settings	Microprocessor-based with temperature, alarms display	
38	Remote Monitoring	Preferred (optional)	
39	Body Construction:	Cabinet shall be fabricated from minimum 1.0 mm thick galvanized steel sheet (G90) with epoxy-polyester powder coating, rated for at least 1000-hour salt spray resistance. All panels shall be insulated with minimum 40 mm thick CFC-free PUF or equivalent. Drain pans and wet sections shall be constructed from SS304. Base frame shall be hot-dip galvanized steel or SS304 to ensure rigidity and corrosion resistance. The unit shall comply with AHRI, ASHRAE, and EN standards for healthcare-grade air handling systems.	
	Scope of Work		
40	Removal of Existing Units	Remove 3 existing water-cooled indoor units carefully and hand over to the hospital.	
41	Installation	Connect to existing condensing water piping (modified as needed). Modify existing ductwork to integrate with new units. Install vibration isolators, electrical wiring, and control panels.	
42	Testing & Commissioning	Factory and site testing of units and performance report (pressure, leakage, airflow, and noise). 7-day trial operation with Engineer approval.	
	Warranty & Support		
43	Warranty Period	3 years comprehensive (parts + labour)	
44	Maintenance Contract	2-year maintenance contract post-warranty (priced separately).	
	Compliance & Safety		
45	Fire Safety	Materials compliant with NFPA 90A/204.5 for fire retardancy.	
46	Electrical Safety	All accessories comply with BS/IEC/IEEE standards; guarantee certificates required.	
47	Site Safety	100% responsibility of the contractor	
48	Site Visit	Required before installation	
49	Manuals	Operation & maintenance manuals (soft and hard copies)	
50	Spare Parts List	Minimum recommended spares with part numbers	
51	As-built Drawings	To be provided after installation	
52	Experience	Bidder Should have Minimum 5 years of experience with the offered brand in hospitals or similar environments Manufacturer must have 10+ years in designing/manufacturing similar units.	
53	Reference Projects	At least 10 references with contact details	

**SERVICE AND MAINTENANCE AFTER FREE MAINTENANCE PERIOD FOR PACKAGE
TYPE AIR CONDITIONING SYSTEM INSTALLATIONS**

Annual fee for providing **comprehensive maintenance service**.

The work shall include the sending of Contractor's personnel **once every two months during normal working hours of a normal working day** to inspect, clean, oil, grease and replacement of spares where necessary, adjust the machinery and equipment and attending to emergency call back service immediately the owner notifies the contractor.

The amount quoted for servicing and maintenance shall include the cost of supply of all replacement spares, necessary oil, grease and cleaning materials. **These prices will be considered for bid evaluation to arrive at a final evaluated bid price discounting to present value at the rate of 10% per annum.**

Total per annum
(After free maintenance period)

1 st year	Rs.
2 nd year	Rs.
3 rd year	Rs.
4 th year	Rs.
5 th year	Rs.

The bidder shall supply a sample of his proposed service and maintenance contract document.

(Signature) (Signature).....

(Name) (Name)

Section - 9

STANDARD FORMS (BID)

- *Bidders shall submit the completed Form of Bid Security/Bid Securing Declaration as appropriate in compliance with the requirements of the bidding documents.*

FORM OF BID SECURITY

.....
[Insert issuing agency's name and address of issuing branch or office]

**Beneficiary: Director, Teaching Hospital,
 Peradeniya.**

Date:[Insert (by issuing agency) date]

BID GUARANTEE NO[Insert (by issuing agency) number] We have been informed that *[Insert (by issuing agency) name of the bidder]* (Hereinafter called "**the Bidder**") has submitted to you its bid dated [Insert (by issuing agency) date] (Hereinafter called "**the Bid**") for execution of "**Supply And Installation Of 100% Fresh Air Package Type Air Conditioning Units At Teaching Hospital – Peradeniya**", (Contract No:) under Invitation for Bids No. ("The IFB").

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we *[Insert name of issuing agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[Insert amount on figures]* *[insert amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails to refuses to execute the Contract Form, if required, or (ii) fails to refuses to furnish a Performance Security, in accordance with the ITB.

This Guarantee shall expire:

- (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the bidder and the Performance Security issued to you by the Bidder; or
- (b) If the Bidder is not the successful bidder, upon the earlier of
- (c) Our receipt of a copy of your notification to the Bidder that the bidder was unsuccessful, otherwise it will remain in force up to 28 days beyond the validity of the bid. (.....)

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

.....
[Signature of authorized representative(s)]

Check List for Bidders

Bidders are advised to fill the following table:

ITEM	ITB Clause	Yes (tick)	REFERENCE
Form of Bid			
Addressed to the Employer?	18		
Completed?	18		
Signed?	18		
Bid securing Declaration form (if required)			
Properly filled and signed	16		
Bid Security (if required)			
Addressed to the Employer?	16		
Format as required?	16		
Issuing Agency as specified?	16		
Amount and currency as requested?	16		
Validity 28 days beyond the validity of Bid ?	16		
Qualification Information			
All relevant information completed?	4		
Signed?	4		
Addendum			
Contents of the addendum (if any) taken in to account?	10		
BID package			
All the documents given in ITB Clause 12 enclosed in the original and copy?	12		
ITB Clause 19 followed before Sealing the Bid Package?	19		