DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF HEALTH

REPLACEMENT OF OLD LIFTS AND SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NEW BED LIFTS AT MAIN OPERATION THEATER – TEACHING HOSPITAL - PERADENIYA

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

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

CLIENT
DIRECTOR,
TEACHING HOSPITAL,
PERADENIYA.

MAY 2025

C O N T E N T S

INVITATION FOR BIDS

INVITATION FOR BIDS (IFB)

MINISTRY OF HEALTH

REPLACEMENT OF OLD LIFTS AND SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NEW BED LIFTS AT MAIN OPERATION THEATER TEACHING HOSPITAL - PERADENIYA

CONTRACT NO: **THD/ AD/ 23/ 2025**

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 **"Replacement of old lifts and supply, installation, testing and commissioning of new bed lifts at main operation theater, Teaching Hospital, Peradeniya"**, Contract No: **THD/ AD/ 23/ 2025** as described in document and estimated to basic cost of Rs. **36 million (Excluding VAT)**. **Construction period is 91 Days**.
   The Site is Located at the premises of Teaching Hospital, Peradeniya. Under this contract, supply, installation, testing and commissioning of new lifts 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 requirements.
   - Grade – **EM 2 or above**
   - Specialty – Mechanical Elevators
   - Average annual volume of construction work performed in the last five years shall be at least **Rs. 53.3 M**.
   - Experience in the construction of at least one contract of a similar nature and complexity equivalent to the Works over 05 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.

   Since the Cost Estimate of this procurement is above 5 million, the provisions of Public Contracts Act No:(03) of 1987 shall be applied.

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

4. 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**

5. 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 **23rd of May 2025** until **13th of June 2025** from **09.00 hrs to 14.00 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.

6. Bids shall be delivered to the address below**,** on or before **13th of June 2025**. 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.

7. Bid shall be valid up to 91 days from Bid closing date **23rd of May 2025** to **13th of June 2025**. (date) or any extended period requested by client.

8. All bids shall be accompanied by a "Bid security" of **Rupees Five Hundred and Twenty-Five Thousand Only (Rs. 525,000.00).** Bid Security shall be valid up to 119 days from Bid closing date **13th of June 2025** to **10th of October 2025** (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

REPLACEMENT OF OLD LIFTS AND SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NEW BED LIFTS AT MAIN OPERATION THEATER, TEACHING HOSPITAL, PERADENIYA
CONTRACT NO. THP/ AD/ 23/ 2025

To: Director,
Teaching Hospital,
Peradeniya.

Gentleman,

1. Having examined the Standard Bidding Document - Procurement of Works (ICTAD/SBD/01-Second edition, January 2007 and Addendum 01 issued in October 2009 & Addendum 02 issued in February 2011) , 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 ..... 2025 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	*(Attach copies of relevant pages from the registration book) (if available)*
Grade	EM 2 or above
Specialty	Elevators, Escalators & Travellators (EET)
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	*(Attach relevant status copies, as annex)*
Value of Construction works Performed in last 5 years	*(Attach certified copies of certificate of completion, etc. and other documents such as profit-loss and income expenditure statement)*
Year 2024	
Year 2023	
Year 2022	
Year 2021	
Year 2020	
Value of similar works completed in last 5 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	

PCA3 Form			
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

The Employer is

Name & Address: **Director,**
Teaching Hospital, Peradeniya.

(1.1)

This work consist of Supply, Installation, Testing and Commissioning of new Bed Lifts with necessary ancillary works for Teaching Hospital, Peradeniya.

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 4,000.00**

The Bid forms will be issued **until 13th of June 2025.**

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

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

- CIDA Registration
  - Registration number:
  - Grade
  - Specialty
  - Expiry Date
- Valid Certificate issued by the Registration of Public Contracts as per Section 08 of Public Contracts Act No. 03 of 1987.
- 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. 53.3 M**.

- Experience in the construction of at least one contract of a similar nature and complexity equivalent to the Works over 05 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. 525,000.00.**
- 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 the Secretary, Ministry of Health. 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 14.00 hrs on 02/ 06/ 2025.

(19.2) a The Employer's address for the purpose of Bid submission is:

Teaching Hospital, Peradeniya.

(19.2) b Contract Name: **Replacement of old lifts and supply, installation, testing and commissioning of new bed lifts at main operation theater – Teaching Hospital – Peradeniya.**

Contract No. : **THP/ AD/ 23/ 2025**

(20.1) The deadline for submission of Bids shall be 14.00 hrs on **13th of June 2025.**

(29.6) The amount quoted for servicing and maintenance (Page no. 45) shall be considered for bid evaluation to arrive at a final evaluated bid price discounting to present value at the rate of 10% per annum.

(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) CIDA 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, Installation, Testing and Commissioning of new bed lifts with necessary ancillary works at Teaching Hospital, Peradeniya.

a. For more information, please refer the Specifications and 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)

(a) The minimum insurance cover shall be:

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.**

(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	4,000.00
Labour	3,500.00

(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) The **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. Also, the Contractor shall enter in to the service & maintenance process with the employer before expiring of Defect Liability Period. The Contractor should be submitted the service & maintenance draft agreement with the Final Certificate.

(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

SPECIFICATION

GENERAL TECHNICAL SPECIFICATION FOR LIFTS INSTALLATION

1.0 INTRODUCTION

This section consists of the general rules that apply to the design, manufacture, shop testing, delivery to site, erecting, commissioning, site testing, maintaining and handing over the material, equipment plant and services required for **02 Nos. Of 1350 kg, 60 m/min MR Type Bed Lift to be installed for Replacement of Old Lifts and Supply, Installation, Testing and Commissioning of New Bed Lifts at Main Operation Theater, Teaching Hospital – Peradeniya.**

The sub-contractor for Lift system shall be a reputed local company having experience in planning, engineering, supplying, installing, testing, commissioning and maintenance of similar type of Lifts at least for last five (05) years.

The manufacturer of the lift equipment shall have at least ten (10) years' experience in the design, manufacture, installation and commissioning and maintenance of lifts.

All equipment being supplied shall be suitable for operation under tropical conditions with ambient temperature up to 36°C and relative humidity up to 90% but not both simultaneously.

1.1 LOCATION OF SITE

Main Operation Teater, Teaching Hospital – Peradeniya.

1.2 STANDARDS

Unless otherwise specified, the whole of the works shall conform to the following standards:

* British Standard Specifications, in particular BS EN 81 / BS 5655 (all Parts)
* IEE Regulations for Electrical Equipment in Buildings
* Regulations and Recommendations of the Ceylon Electricity Board and the Sri Lanka Standards Institution.

Other recognized national or international specifications, not less exacting than those above may be used, provided the latest edition of such specification (in English) had been furnished with the tender and accepted.

1.2 DRAWINGS

The Contractor shall furnish the following documents, drawings, diagrams and schedules for approval by the Engineer.

(i) General arrangement drawings showing layout of lift well positions of all plant and equipment, ancillaries, cable trunking, conduits etc.

(ii) Loads on machine room floor slab, beams and pedestals.

(iii) Details of landing entrances.

(iv) Details of block-outs, holes and built-in fixing devices to be incorporated in the civil works.

(v) Details of car enclosure design, finishes, car and landing station panels, interior lighting and ventilation.

(vi) Electrical wiring diagrams, schematics, layouts for the entire installation.

(vii) Co-ordinated wiring/connection details between equipment and cables, showing terminal block coding, cable core size and identification.

(viii) Operation and maintenance manuals.

Working diagrams shall be provided in respect of all electrical equipment and/or systems, which form part of the works. Under this contract, schematic layouts shall be presented in ladder or similar format such that it is possible to comprehend the operation of a particular system, the interconnections between various systems, and to identify the components, wiring/connections shown on the diagrams.

1.4 STEEL WORK

(i) The Contract shall include supply and erection of the steel work required for the support of machines, sheaves, guides, door tracks, gear etc. complete. That which forms part of the structural steel work of the building will be provided by others.

(ii) 3 Ton lifting hooks in each machine room will be provided by the civil contractor and will be positioned generally as shown in the Tender drawings but precisely as indicated by the lift contractors' installation drawings.

(iii) **A substantial galvanized steel cat ladder shall be provided as per BS Codes and fixed by the lift Contractor to give easy means of access to the pit.** All guard rails and ladders in the lift machine rooms shall be supplied and fitted by the main Contractor.

1.5 TRACTION DRIVE

(i) Motor

The motor shall be specially designed to meet the severe load conditions encountered in lift service. It shall be suitable for local ambient conditions and shall have a high starting torque and low starting current characteristics.

The starting current shall not exceed 2.5 times the rated full load current of the motor and contractor shall specify in the specification, the rated full load current and the starting current of the offered motor.

The drive system shall incorporate all accessories and equipment to produce smooth starting, acceleration, running, deceleration and stopping characteristics for maximum riding comfort.

The motor shall be fitted with a forced ventilation unit and thermistors shall be incorporated in the motor windings to give protection against overheating.

The continuous duty cycle rating shall be as stated in the Appendices and the motor shall have a minimum of class F insulation.

The motor shall be coupled directly to the worm shaft and secured to the gearbox by flanged mountings to ensure accurate alignment. For quiet and smooth running, the motor shall be carefully balanced with its associated brake drum and worm shaft.

The speed of motors driving lift machines shall not exceed 1000 rpm. The machines shall run at all loads without appreciable noise or hum.

(ii) Winding Gear

The winding gear shall comprise an accurately machined steel worm and a phosphor bronze worm wheel operating in an oil bath in a sturdy cast iron casing.

The worm and its shaft shall be accurately machined from a single unit of high tensile strength, solid forged steel shafting. It shall be provided with a thrust ball bearing designed to take the thrust in both directions. The thrust bearing shall be removable without dismantling the machine.

Two self-aligning brake shoes lined with friction material shall act on the brake drum that shall be keyed to the worm shaft. The shoes, mounted on independent arms, shall be spring applied and electrically released and designed to be instantly and automatically applied in the event of interruption of the power supply from any cause.

The worm wheel shall be hobbed from a centrifugally cast bronze rim and shall be accurately fitted and bolted to the gear spider.
The traction sheave shall be fitted with an out-board bearing.

1.6 CONTROLLER

The lift controller shall be of vertical, totally enclosed, sheet steel cubicle type with hinged door in front and screwed panels at the rear providing easy access to all components inside the controller. The enclosure shall be well ventilated by means of louvers or other means devised by the lift manufacturer. Adequate protection shall be provided to prevent the entry of harmful insects and vermin into the cubicles.

The panels shall contain contactors, relays selectors, timers, transformers, fuses rectifiers and all apparatus associated with the control of the lift in the machine room.

The controller shall provide protection against the following:
* No-volt and sustained under voltage
* Phase reversal of the power supply
* Overload
* Failure of any one phase

The controller shall cut-off the current automatically, apply the brake and bring the car to a standstill in the event of the failure of any of the electrical safety devices. The controller circuits shall be designed to prevent the lift being operated by the main motor until all car and landing doors are closed, except within the leveling zone of the floor at which the lift is stopping.

The solenoids, magnetic brake and other magnetic devices shall operate on d.c. obtained through a full-wave rectifier. All operating coils shall be adequately rated, insulated and vacuum impregnated against moisture and shall be capable of withstanding a minimum of 10% over-current and 20% over-voltage.

The contactors and switches shall be mounted on panels of approved non-inflammable and non-hygroscopic insulating material supported on steel frame. All switches and contactors shall be of adequate rating of non-weldable wiping type. Heavy current relays shall be provided with arc deflectors.

1.7 ELECTRICAL WORK - GENERAL

(i) Power Supply to the lift machine rooms is terminated on a 40 ampere 3 phase 2 Nos. circuit breaker for each lift machine. The contractor shall draw the power supply for the lift installation from this breaker. The supply shall include all required cables, fuses, electrical power panel, and other accessories. The installation shall be protected against over voltages and power surges by surge arrestors

(ii) PVC insulated cables shall be 450/750 Volt grade, manufactured in accordance with BS 6004 or equivalent.

(iii) All electrical wiring shall be run in galvanized steel conduit and/or trunking, all as specified below. Trunking shall be used wherever possible instead of multitude of conduits

1.8 CONDUITS

(i) The conduits shall be of sufficiently large section and so arranged with draw-in boxes to allow either and easy drawing or out of the cables which must not exceed the number set out in the appropriate table of the IEE. Regulations for electrical installations and no conduit bearing rust or damage shall be used.

(ii) Surface runs shall be fixed by means of galvanized distance saddles at intervals not exceeding 1200 mm.

(iii) Conduits shall be mechanically and electrically continuous throughout.

(iv) No conduit shall be less than 20mm outside diameter.

(v) No cables shall be drawn into conduit before fixing and the conduit shall be cleaned and free from oil before erection.

1.9 CONDUIT-BOXES

(i) Conduit boxes shall be fixed direct to the structure apart from the support provided by the conduits.

(ii) Boxes lids where required shall be heavy gauge secured by means of screws.

(iii) Adaptable boxes and lids of the same size shall be interchangeable.

1.10 TRUNKING

(i) The outer case, lid and internal partitions, if appropriate, of the trunking shall be manufactured of galvanized sheet steel enameled finished in manufacturer's standard color.

(ii) The lid of the trunking shall be formed with returned edges and shall be fixed to the cable trunking by means of screws located in bushes set in the edge trim of the trunking, or by other approved securing devices.

(iii) Lengths of trunking shall be coupled together by suitable means.

(iv) At each joint in the trunking, continuity shall be maintained by the installation of copper links by brass nuts, locking washers and bolts. In addition, an earth continuity conductor copper shall be run within the trunking and used to bond all items of equipment.

(v) Before cables are drawn into trunking the Sub-contractor is to ensure that all sections of trunking are free from sharp edges, burrs and weld spots which could cause damage to cable insulation.

(vi) Where the trunking passes through floor slabs, fire barriers shall be fitted in the trunking.

(vii) All trunking required in the floor of the lift machine room shall be installed flush with the floor finish and be fitted with removable chequer plate lid.

(viii) Any damage to the paint work of the trunking shall be made good by the Contractor before cables are drawn in.

1.11 BONDING

(i) Supplementary bonding conductors shall be provided to connect together all exposed conductive parts and extraneous conductive parts of the lift installation in the well and machine room.

(ii) External conductive parts of the lift installation and exposed conductive parts of well lighting and power installation shall also be bonded.

1.12 TRAVELING CABLES

Traveling cables between car and lift well shall have flame retarding and moisture resisting outer cover. They shall be flexible and suitably anchored and suspended to relieve strains in the individual conductors.

1.13 SUSPENSION ROPES

(i) The suspension ropes shall be from a specialized rope manufacturer and specially manufactured for elevators, each capable of sustaining the weight of the laden car with safety.

(ii) The manufacturer's test certificate for the ropes shall be provided.

1.14 COUNTERWEIGHT

(i) The counterweight shall be provided consisting of cast iron weights or steel plates contained in a structural steel frame with suitable guide shoes.

(ii) After balancing the counterweights should be locked in position by bolts to avoid noise and sliding.

(iii) A rigid metal screen shall be provided around the counterweight at its lower end of travel.

1.15 SHEAVES AND SUPPORTING BEAMS

Deflector and overhead sheaves shall be provided where necessary to obtain the proper lead of the ropes to the car and counterweight, together with supporting beams for the same.

1.16 HAND GEAR

(i) Provision shall be made for moving the car to a floor level by hand in the event of the lift stalling between floors. Hand winding equipment shall be painted yellow.

(ii) The brake-lifting device shall be so arranged that it is impossible for the brake to be left in the fitted position.

(iii) The direction of winding corresponding to the raising and lowering of the lift car shall be clearly indicated.

(iv) A prominent notice shall be displayed stating that hand winding shall be undertaken only by authorized persons and the notice shall detail the step-by-step procedures to be taken to move the lift in an emergency.

(v) If special tools are required, they shall be retained in a suitable wall mounted fixture.

1.17 SAFETY GEAR AND GOVERNOR

(i) The safety gear to BS 5655 shall be mounted on the car frame and shall be operated by a centrifugal over speed governor located over the lift well. The safety device shall be arranged to bring the car to a stop and hold it on the guide rails in the event of excessive descending speed and provision shall be made automatically to shut off the power supply to the motor and apply the brake.

(ii) Provision shall be made for easy release and resetting of the safety gear after it has been operated.

(iii) Governor ropes shall be of steel not less than 8 mm in diameter.

(iv) For elevator speeds of 1 mps and above, gradual safety should be used. For 0.75 mps and below, instantaneous safety can be used.

1.18 BUFFERS

(i) Buffers to BS 5655 shall be provided.

(ii) Where buffers are installed in the pit they shall be mounted on continuous channels or other structural member fastened to the guide rails.

(iii) Spring buffers should be used for speed up to 1 mps for speed above 1 mps; spring return type oil buffers should be used.

1.19 COMPENSATION ROPES

Where required by BS 5655, compensating ropes shall be provided between the car and counterweight, passing rounds a pulley in the pit. The ropes shall be tensioned by gravity and a safety switch shall be provided.

1.20 GUIDES AND FIXINGS

Guides for car and counterweight shall consist of steel "tee" section machined rails or formed rails erected plumb and securely fastened to the lift well by heavy steel brackets to suit the lift well already constructed. The ends of guides shall be tongued and grooved or forming matched joints and shall be connected with steel fish plates and bolts necessary for fixing the guide rails to the building structure.

1.21 GUIDE RAIL LUBRICATION & GUIDE SHOES

(i) Self-lubricating type of guide shoe shall be provided for the car and counterweight.

(ii) Guide shoes shall be provided with replaceable nylon liners to absorb the shocks and to give good riding comfort.

(iii) Where wicks lubrication is used, a drip pan shall be provided below the guides in the pit to catch surplus oil.

1.22 CAR FRAMES

(i) The car frame shall be constructed of steel members reinforced and braced to relieve the car enclosure of undue strains in the event of the operation of the safety gear or by the lift being arrested in its travel by impact with the buffers.

(ii) Adjustable guide slippers shall be fixed on the top and bottom of the frame.

(iii) The steel suspension ropes shall be attached to the car frame with provision for taking up any inequalities between the ropes. Rope should be connected to thimble rod by babbit metal moulding and springs should be fixed between thimble rod and car frame to avoid transmission of vibrations to the car.

1.23 CAR PLATFORM

An adequate floor of steel construction shall be provided. The floor covering will be provided as part of this sub-contract and secured to the flooring. The platform shall be equipped with a sill of finish as indicated in schedule of requirements.

1.24 CAR ENCLOSURE

The design shall in general conform to the following requirements.

(i) The car shall be of metal construction, with the walls and doors, car fittings in a finish indicated in schedule of requirements attached herewith.

(ii) The car shall include a fitted stainless steel finished handrails on rear wall.

(iii) The panel housing, the car operating micro touch buttons and other car controls together with the cabinet for housing the telephone/intercom inside the car shall all be finished in stainless steel. Micro touch buttons should not have mechanical displacement of more than 0.5 mm.

(iv) Lighting shall be provided by means of fluorescent lamps concealed above a dropped ceiling. Power supply for the lighting circuit shall be taken from the lift machine room.

(v) Mechanical means of ventilation shall be provided in the design of the car enclosure consistent with the designated occupancy of the lifts.

(vi) The roof of the car shall be sufficiently reinforced to withstand the distributed weight of two men.

(vii) Each car shall be fitted with emergency hatchway on the roof for emergency purposes. It shall have a minimum size of 450mm x 500mm and open outwards.

(viii) Toe guard to be provided for full entrance opening width.

1.25 LANDING DOORS AND ENTRANCES

The Contractor shall furnish and install at all landing openings, complete metal entrances consisting of frames, architraves, doors, sills and facia plates, in accordance with the following;

1.26 ARCHITRAVES

The frames shall consist of head and jamb sections with integral trim. On the well side the frames shall be carried back far enough to present a neat appearance, and shall be secured to the sill and door hanger supports, or structure. The architraves on all floors should cover full thickness of entrance wall. Finish should be as indicated in schedule of requirements.

1.27 SILLS

The sills shall be of finish as indicated in schedule of requirement with approved non-slip wearing surface. They shall be in one piece of sufficient length to suit the two supporting struts and grooved for the door guides. The door tracks shall be self-clearing.

1.28 LANDING DOORS

Doors shall be of the type specified in the schedules. The door panels shall be formed to match the unit frames. The bottom of the doors shall be provided with guides to run in the sill slots with minimum clearance. Door hanger rollers to have non-metallic contact with

the header track for smooth door operation. The doors shall have a minimum fire rating of 1 hour.

1.29 TOE GUARDS

All landing entrances to be provided with "Toe Guards" for the full width of the entrance opening.

1.30 CAR DOORS

(i) The entrances shall be protected by horizontal sliding metal doors with finish as indicated in schedule of requirements. The opening arrangements are detailed in the schedule of requirements. Panel rigidity shall be obtained by suitable steel reinforcement. The doors shall have a minimum fire rating of 1 hour.

The doors shall be hung on sheave hangers running on a polished steel track and guided at the bottom by non-metal shoes sliding in a smooth threshold groove. Door hanger sheave to have non-metallic contact with the track for smooth and noiseless door operation.

(ii) Suitable means shall be used to transmit motion from one door panel to the other.

1.31 CAR AND LANDING DOOR MECHANISM

(i) An automatic door operating mechanism shall be provided to open and close the car and landing doors when the car is at a landing. The car door and landing door at any landing shall be opened and closed simultaneously. They shall be power opened and closed. Door movements shall be cushioned or checked at both limits of travel.

(ii) The doors shall be automatically opened when the car is level at the respective landing and shall again close after a pre-determined time interval has lapsed. A 'door open' button shall be provided in the car the momentary pressure on which shall reverse the motion, reopen the doors and reset the time interval.

(iii) The car door shall be provided with a protective device extending the full height and projecting beyond the front edge of the door. This device shall be so arranged that should it touch a person or any obstruction in its path while the door is closing, it shall automatically cause both the car door and the landing door to return to the open position. The doors shall remain open until the expiration of a time interval and then close automatically. The pressing of a car button, once the doors are fully open shall cause the doors to close immediately.

(iv) Mechanical safety edges shall be retractable. In center opening doors, both doors shall have safety shoes.

(v) The device is to be arranged so as to ensure the doors exerting the absolute minimum force on a person obstructing the closing operation.

(vi) In addition, photoelectric detector type of door safety device shall be provided. So that there is no need to continue to press the door opening button while boarding or alighting.

1.32 CAR AND LANDING DOOR INTERLOCKS

(i) Each landing door and the car door gate shall be equipped with an electro-mechanical interlock, which shall prevent the operation of the lift unless the doors are closed and positively locked. The interlock shall also prevent the opening of any door until the car has reached the respective landing zone with the operating circuits open.

(ii) Emergency opening of the door and gates from the landings shall be possible by means of key operation. Two keys shall be provided.

1.33 EMERGENCY BACK-UP SYSTEM

In the event of a microprocessor malfunction, another discrete circuit is energized to maintain the functioning of the system and assure operational safety.

1.34 LANDING AND CAR CONTROLS

The lift shall be controlled from micro buttons in the car, numbered to correspond to the landing served, and by two buttons on the landing.

The operating device shall give the person in the car uninterrupted use of the lift until the car door has reached the desired landing, and the car has been opened and again closed. Momentary pressure of a landing button shall bring the car to that landing.

After the car stops at a landing response to a landing call, a time delay shall render the car inoperative from the landing buttons for a pre-determined interval.

1.35 TOP OF CAR INSPECTION CONTROLS

(i) Inspection controls shall be fitted to all passenger-carrying lifts in accordance with BS codes.

(ii) A 13 Ampere 3 Pin switched socket outlet and a permanent light of the protected bulkhead or wall glass type with controlling switch, shall also be provided on top of the car. The supply for this socket outlet and lamp shall be independent of the lift machine supply.

1.36 EMERGENCY OPENING

(i) Each lift car shall be provided with emergency opening in the roof for emergency purposes.

(ii) Panels for emergency openings shall:
* Not open inwards;
* Be clear of any apparatus mounted above the roof of lift car;
* Be held by suitable fasteners, which can be opened only from outside the lift car i.e. without key.
* Be provided with a switch, which will prevent operation of the lift when the panel is open, and which will restore operation of the lift only when the fastenings have been manually restored.

1.37 TERMINAL STOPPING DEVICES

Each lift shall be fitted with upper and lower normal stopping devices and upper and lower final stopping devices each of which shall independently be capable of stopping the car through its own switch. If the lift has passed a final limit switch it shall not be possible to clear the circuit until the lift has been moved back by hand into its normal running position.

1.38 CONTROL SWITCH IN LIFT PIT

A switch shall be provided in the pit for each lift in accordance with BS 5655 which, when placed in the "STOP" position, will cause the lift to stop and prevent its being started until placed in the "RUN" position.

1.39 ALARM BELL

A push button shall be fitted on the control panel in car arranged to ring a battery-operated bell situated near the entrance to the lift on the ground floors, the precise position to be agreed on site. Bell, trickle charger, lead acid (planet type) battery and all interconnecting wiring shall be supplied and installed as part of this contract.

1.40 EMERGENCY LIGHTING

Car shall be provided with an emergency light, which will operate for not less than three hours duration on mains failure. The battery to be rechargeable type. The light shall consist of a self-contained unit with its own batteries and a small fluorescent tube.

1.41 INDICATOR

All indicators will be fitted with neon lamps instead of filament type bulbs to enhance the life and sharpness of the indicator.

1.42 CAR LOAD WEIGHING DEVICE, AUTOMATIC BY-PASS

(i) The lift car shall be fitted with a car-weighing device to render the lift inoperative should the contract load be exceeded. Visual and audible indication that the car is overloaded shall be fitted within the car. When the overload has been removed, the lift shall resume normal operation.

(ii) In the event of the car being loaded to its full capacity, than it will not stop to answer any hall calls and will stop only at the registered car hall. This will continue until such time the loading is reduced from its full capacity. This operation shall be in both directions of travel.

1.43 INTERPHONE SYSTEM

An intercommunication system between the car, ground floor lift entrance and the respective machine room shall be provided in the lift.

The station within the lift car shall be mounted above the car-operating panel having a perforated speaker grille. Pressing the interphone alarm push button in the car-operating panel shall cause the buzzer to operate and initiate an audible and illuminated signal in the Machine.

In the event of a failure of the normal electrical supply, the intercom system shall be automatically switched onto an emergency battery supply system provided with an automatic battery charger capable of fully recharging a discharged battery within 72 hours. The entire installation and wiring of this shall be carried out by the lift sub-contractor.

1.44 ARRIVAL GONG

Arrival Gong, which strikes, indicating arrival of the cabin at a particular floor. Also Voice announcement whether lift going up or down, arrival floor names & emergency operation etc.

1.45 PAINTING

(i) All iron except where finished bright or plated shall be thoroughly cleaned of all scale and rust and painted two coats of oil resistant paint at maker's works. On completion of the work on site the paintwork shall be touched up to make good any damage sustained during installation. All bright and plated parts should be greased or otherwise protected against corrosion and discoloring during erection.

(ii) Cellulose and other special finishes shall be protected so that they are handed over in perfect conditions.

1.46 VIBRATION

All lift gear including traction motor and controllers shall be as silent in operation as possible and in addition are to be effectively insulated from the structure so that in the opinion of the Engineer no noise or vibration is transmitted to other parts of the building.

1.47 TESTING AND COMMISSIONING

(i) When the lift is completely installed it shall be subject to the complete range of tests to demonstrate to the Engineer the following:

(a) Insulation test, earth continuity and impedance test.
(b) That the lift operates at specified speed at loads varying between no load and 110% load.
(c) That the brake sustains the car with 125% contract load.
(d) Satisfactory operation of the safety gear and over-speed governor under over-speed conditions (drop test).
(e) That the various safety devices, locks and other safety provisions operate as intended.
(f) That the operation of the lift and doors in response to the car switches and push buttons is as intended.

(g) That the leveling is correctly adjusted for each floor and remains so after extended use.
(h) The car shall be loaded to the full specified load and the lift run from top to bottom continuously, for the full travel of the lift, allowing the normal time interval at each terminal, during which the doors are to be opened and closed. The test shall be continued for 2 hour during which the motor, motor

generator and gearbox shall be assumed to have attained their maximum operating temperatures.

(i) Any other test specified in BS 5655 - Part 1 (Specification for testing and inspection of electric and hydraulic lifts).

(j) All instruments required for the tests shall be provided by the Contractor.

1.48 SERVICING AND MAINTENANCE ON PROVISIONAL ACCEPTANCE

(a) After provisional acceptance, when the lift is put into service, the Contractor shall maintain lifts as necessary, for a period of twelve months.

(b) All necessary stores, spares, tools and other material required for such work shall be provided by the Contractor.

(c) An efficient local breakdown call-out organization whereby the services of an engineer can be obtained immediately at any hour of the day or night will be deemed to fulfill the above requirements.

All equipments and installations provided under the Contract shall be continuously maintained free of charge by the Contractor throughout the whole maintenance period of twelve months including routine service and maintenance, periodic checking, inspection, adjustment etc., as deemed necessary to guarantee smooth and uninterrupted service.

The Contractor shall replace or repair with utmost speed and at his own expense any point of the plant or equipment or material or work performed or furnished under lifts works in the contract which may prove defective in design, installation and erection, operation, performance workmanship or from any act of omission of the Contractor that may develop, under the conditions provided by the contract and under proper use in the works or any section there of during the maintenance period after the work.

The Contractor shall obtain and submit to the Engineer any guarantee or certificates of warranty available from the manufacturers but only as supplementary to the Contractors own guarantees and in no way invalidating them.

1.49 INSTRUCTIONS TO EMPLOYER'S STAFF

The Contractor shall, at times agreed with the Engineer, instruct the Employer's staff in the correct use, operation and routine maintenance of the works and shall satisfy himself and the Engineer that the staffs are competent to take over and operate the Works.

1.50 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 Manual (03 copies)
(b) Testing and commissioning sheets (03 copies)
(c) As Built Drawings (03 copies)

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

DETAILED TECHNICAL SPECIFICATION FOR LIFTS INSTALLATION

2.0 SCOPE OF WORK

This section specifies detailed requirements for design, manufacture, transport, delivery to site, unloading, complete erection, site testing, setting to work and maintenance for a period of 1 year of **for 02 Nrs of 1350 kg, 60 m/min Bed Lift to be installed for Replacement Of Old Lifts And Supply, Installation, Testing And Commissioning Of New Bed Lifts At Main Operation Theater, Teaching Hospital – Peradeniya.**

2.1 DRAWINGS AND SPECIFICATIONS

The Contractor shall furnish with his tender drawings the general arrangement of Lift equipment, depth of pit, overhead height, minimum required dimensions of hoist way and machine room and necessary specification. A set of detailed drawings must be submitted for approval as soon as possible after the order is placed showing detailed general arrangements, wiring details, and holes to be provided in walls and floors. It will be necessary for these to be supplied at the earliest for allowing time for building work to be arranged. All the drawings must be approved by the Engineer before the work commences.

2.2 RADIO INTERFERENCE SUPPRESSION

The lift equipment shall be fitted with radio interference suppression components during manufacture to ensure that the limits of interference comply with BS 800. All components and filter units used for interferences suppression shall comply with BS 613.

2.3 POWER SUPPLY

The power supply for the apparatus will be 400 Volts AC, 50 cycles, 3-phase 4 wire with neutral earthed at the supply source. The main beams, runaways and the steel structure should be connected to the main earthing system.

2.4 ELECTRICAL INSTALLATION

The electrical installation for the Lift including all trunkings in the shaft and machine room shall be executed by the Contractor. In the machine room a switchboard with 3-phase supply will be provided. He should also supply and install any other switchboards or panels required for a complete installation.

2.5 FIREMAN'S EMERGENCY SERVICE

Fireman's switch shall be provided and located in the ground floor close to entrance of the lift and when activated during an emergency the lifts should come to the ground floor and doors shall immediately open. Thereafter it shall be suitable for operation by fireman. Further provision shall be made in the lift control system to receive signals from the fire detection system and activate lifts to travel automatically to ground floor and doors shall be immediately opened in a fire situation.

2.6 MAINTENANCE CONTRACT

Together with his tender the tenderer shall submit a draft contract for complete maintenance, regular inspections of the installations and equipment after the expiry of the Defect Liability Period. Details shall be given for a comprehensive scheme inclusive of all replacement spares. Charges shall be given for a period of 5 years after the Defects Liability Period.

2.7 LOCATION OF LIFT

The Lift shall be installed at the position shown on the drawing and details of which could be referred to in the schedules.

2.8 SCHEDULE OF REQUIREMENTS FOR BED LIFT AND PASSENGER LIFT

2.8.1 BED LIFTS

No. of Bed Lift	- Two (02)
Capacity	- 1350 kg
Speed	- 60 m/min
Automatic Re-leveling Accuracy	- +/- 5 mm
Drive Unit	- AC **V**ariable **V**oltage **V**ariable **F**requency control
Operation	- Selective collective with or without attendant service
Stops & Openings	- 2 stops
Service floor names	- Ground, 1st Floors
Travel	- 4000 mm
Over Head clearance	- 4,200 mm Vertical distance between finished floor of the highest landing and soffit of the lift shaft.
Machine room height	- 2,300 mm
Pit Depth	- 1,300 mm
Hoist way Size	- 2400 mm (W) x 2,800 mm (D)
Door size	- 1100*2100 & slide opening door

Entrance (wall to wall Structural opening)	-	1,500 mm (W) x 2,200 mm (H)
Machine Room	-	Directly above hoist way

(i) Elevator Car

Car Ceiling, Lighting & Ventilation	:	Shall be of baked enamel painted steel sheet with bright lighting through down lights (spot lights) and ventilation by electric blower through slip vents located at the center of the car.
Car Walls	:	**Stainless steel hairline finished.**
Car Door	:	**Stainless steel mirror finished**.
Car Sill	:	Extruded hard Aluminum
Car Floor	:	Granite floor with stainless steel toe guard along three sides of cabin.
Hand rails	:	Stainless steel (cross section of hand rail not less than 75mmx6mm) on rear lift car wall

(ii) Landings

Landing Entrances	:	Lintel & full width tapered stainless steel finish.
Hoist way Doors at all floors (Clear entrance)	:	1100 mm (W) x 2,100 mm (H) 2 panel side opening automatic doors in stainless steel hairline finish for bed lifts.
Landing sills at all entrances	:	Extruded hard aluminum

Entrance Indications

Typical floor Landing	:	Vertical combined unit comprising Digital car position indicator, direction indicators, and micro touch type hall call buttons which will illuminate on registration of call shall be installed at every floor landing served by the lifts. All metal exposed parts of the indicators unit shall be made of stainless steel with matt finish.

(iii) Car Operating Panels

Signals in the Cabin	:	The following features shall be incorporated in the car-operating panel located at one side of the entrance. - Emergency stop switch with alarm - Up/Down travel direction indicators

- Digital floor position indicator
- Floor buttons of micro touch type with lights, for registration of commands
- Door open and door close button
- Interphone

The following switches shall be fixed inside a lockable compartment provided below the panel.

- Car light switch and Ventilator switch fan
- Lift `OFF' switch
- Attendant operation switch

Car operating panel mounted in front corner of the cabin at 45 degree diagonally for better operational convenience with call buttons of micro touch type, which will illuminate on registration of a call.

Floor position indicator shall be installed on the top corner of the front panel of the car, which also should indicate up/down direction.

(iv) Special Features :

- Safety door edge running full height of car
- Photoelectric-sensing device mounted above the car entrance to monitor movement of passengers/objects across the door and to control opening and closing of door.
- DC Alarm bell
- Arrival gong
- Emergency car light. (This may be passed by a rechargeable battery, which could serve the Alarms too)
- Interphone
- Overload protective device with audible plus visible indicators
- Emergency over ride switch
- All required limit switches and interlocks as specified in BS 5655 or equivalent recognized standards

(v) Operation during power Failure : The lifts shall be equipped with a rechargeable battery bank for emergency operation of the lifts during power failure. In the case of power failure, car emergency light shall come on automatically and rescue system shall slowly guide the elevator to the nearest floor and then open both car door and respective landing door automatically, to prevent passengers being locked in the car. When power is restored, the elevator shall resume its normal operation.

(vi) Emergency Provisions : An emergency exit comply with BS 5655 Part 1 shall be provided on the car ceiling. These exits shall incorporate the following features.

- Be secured by suitable fasteners for hand use, which can be released only from outside the car.
- The hinged or removable emergency panel shall open outwards of the elevator car.
- The emergency opening shall be clear and no equipment on the elevator car top shall obstruct this opening.
- With the emergency exit opened, it shall not be possible to operate the lift.

Next Landing Device : If the hoist way doors become jammed by a pebble, debris, etc., preventing opening of the doors, passengers will not be able to alight from the car. In order that the passengers do not get stranded at the affected floor, the elevator shall proceed to next immediate floor and the doors shall open out automatically.

Low speed automatic Rescue operation : In the unlikely event that the elevator should stop between floors, the cause of the malfunction shall be checked out automatically and when the safety has been confirmed, the elevator will proceed at low speed to the ground, so that the passengers can alight from the car.

Multiprocessor Backup System : This system shall assure complete functional backing between the group controller and individual car controllers as well as between microprocessor components in the controller. Thus safe elevator functioning is assured even if localized malfunctions occur.

Buffers : Spring type/Hydraulic

Safety : Gradual type

Guide rails : As per specification

Counterweights : Cast-iron blocks enclosed in a steel frame

Power supply : 400 Volts 3 Phase 50 Hz

Lighting supply : 230 Volts 1 Phase 50 Hz

(vi) Exhaust Fan and Ventilation Louver Panel

In order to remove the heat generated inside the machine room an exhaust fan & ventilation louver panel shall be installed inside the machine room at suitable locations proposed by the manufacturer to maintain required conditions. The tender shall furnish the maximum permissible temperature & humidity inside the lift machine room together with temperature maintained by exhaust fan.

(vii) Machine Room Civil Works

The construction of the lift machine room is in progress and 1500mmx1500mm opening will be provided at the machine room floor slabs for taking lift equipment in to the lift machine room. The drilling of suitable holes on the floor slab for traction ropes, governor ropes etc. has to be carried out by the lift contractor.

(viii) **Provisions for Disable personnel**

- **Lift door closing mechanisms shall be adjustable to give adequate entry time for personnel with disabilities. The installation of photoelectric sensors shall be provided for controlling the closing of the lift doors.**
- **Call buttons in elevator halls shall be at a height of 1000mm which is within easy reach of wheelchair users.**
- **All call buttons shall have Braille raised numbers and symbols to indicate "Open" and "Close".**
- **A visual lift position indicator shall be provided above the control panel or over the door.**
- **A voice indicator shall be installed to announce whether lift going up or down, arrival floor names & emergency operation etc.**

Above provisions shall be provided for bed lifts.

SECTION - 07

BILL OF QUANTITIES AND TECHNICAL DATA

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, testing & commissioning of New Bed Lifts system etc.

13. Except where specifically stated, all costs associated with provision of all holes, openings, chases and wall finishing in other builders' work required for installation and make them good, shall be included in the rates.

14. 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.

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. Screens should be provided to prevent dust escaping from working areas.

17. 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
Pro Sum	-	Provisional sum
L. S.	-	Lump Sum

REPLACEMENT OF OLD LIFTS AND SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NEW BED LIFTS AT MAIN OPEREATION THEATER

TEACHING HOSPITAL - PERADENIYA

BILL OF QUANTITIES

ITEM	DESCRIPTION	QTY	UNIT	RATE Rs. Cts.	AMOUNT Rs. Cts.
	MECHANICAL WORKS				
	The manufacturer of the equipment shall have at least ten (10) years experience in the design and manufacture of same type of equipments	*Note*			
	The make of equipments offered shall have satisfactory proven service record in Sri Lanka at least for last five (5) years	*Note*			
	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.	*Note*			
	Rate shall for cost of providing security bonds, guaranties, insurance of personnel, property, material against accidents, damage, trespass or theft.	*Note*			
	Rate shall for the cost of all temporary works such as scaffolding etc. associated civil and electrical works related to the installation of lift 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.	*Note*			
	BED LIFT FOR MAIN OT				
1.0	Remove existing lifts accessories and hand over to hospital with inventory list				….....
2.0	Supply and installation of **MR Type** Bed Lift of capacity 1350kg, 60m/min for **TWO** stops (from Ground to First floor), with battery backup and all other accessories.				
	(a) Supply Cost	2	nr	….....	….....
	(b) Installation Cost	2	nr	….....	….....
	Supply and installation of Exhaust fan Country of manufacturing shall be USA, EU OR JAPAN.				
3.0	Supply and installation of wall mounted exhaust fans having suitable capacity for machine room.				
	(a) Supply Cost	2	nr	….....	….....
	(b) Installation Cost	2	nr	….....	….....
4.0	Supply and installation of Intake air louver with insect screen.				
	(a) Supply Cost	2	nr	….....	….....
	(b) Installation Cost	2	nr	….....	….....
5.0	Associated Civil works	Pro. Sum			250,000.00
6.0	Testing and commissioning	Item	Lot		….....
				Total Cost for Lifts	**…..**

REPLACEMENT OF OLD LIFTS AND SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NEW BED LIFTS AT MAIN OPERATION THEATER TEACHING HOSPITAL, PERADENIYA.
BILL OF QUANTITIES

MAIN SUMMARY

Bill No	DESCRIPTION	AMOUNT Rs Cts
A	**BED Lift System**	….......................................
(a)	**Basic Cost Estimate (BCE) (Sub Total 1)**	….......................................
(b)	Less: Provisional Sum	**250,000.00**
(c)	Sub Total II (a-b)	….......................................
(d)	Less: Discount if any (.........%)	….......................................
(e)	Sub Total III (c-d)	….......................................
(f)	Add : Provisional Sum (b)	**250,000.00**
	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)

Name and Address of Witness (1)
……………………………………………....
……………………………………………....
……………………………………………....

Date……………………

…………………………………….
Signature of Witness (2)

Name and Address of Witness (2)
…………………………………….
…………………………………….
…………………………………….

Date……………………

TECHNICAL SCHEDULE

REPLACEMENT OF OLD LIFTS AND SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NEW BED LIFTS AT MAIN OPERATION THEATER

TEACHING HOSPITAL - PERADENIYA

TECHNICAL SCHEDULE

	Item	As specified	As Offered	Remarks
	Bed lift - 02 stops			
1.1	Make			
1.2	Model			
1.3	Country of origin	Europe/USA/JAPAN		
1.4	Rated capacity of lift	1350 kg		
1.5	Rated speed	60 m per min		
1.6	**Control system**	VVVF		
	Protection against			
	- Under voltage			
	- Phase			
	- Overload			
	- Earth fault			
1.7	**Drive motor**			
	- Rated supply voltage	400 V/3ph		
	- Frequency	50 Hz		
	- Permissible supply			
	- Voltage variation	10%		
	Rated capacity			
	Speed			
	Ventilation/cooling	Forced ventilation		
	Insulation class	Class F		
	Full load current			
	Continuous duty cycle rating	180		
1.8	Governor system			
1.9	Type of safety gear			
1.10	Hoistway size	2400 * 2800 mm		
1.11	Overhead of lift	4200 mm		
1.12	Pit depth	1300 mm		
1.13	Position of machine room	Directly above Hoistway		
1.14	Travel	4000 mm		
1.15	Hoisting Hook in the clearence space			
	- No. of Hook			
	- Capacity of the hook			
1.16	Lift Car			
	- Design			
	Internal dimensions - minimum			
	- Car door type			
	- Door opening dimensions			
	- Details of car			
	- Ceiling, lightings			
	- Ventilation			
	- Interphone			
	- Walls	Hairline SS		
	- Doors	Hairline SS		
	- Car sill	Extruded hard aluminium		
	- Car floor finishes	Hard wearing Vinyl flooring		
	- Operating panel finish	Hairline SS		
	- Function & features of operating panel			
	- Landing			

	Item	As specified	As Offered	Remarks
	- Door type	Clauses 2.8.1, 2.8.2		
	- Door construction	Clauses 2.8.1, 2.8.3		
	- Door dimension	Clauses 2.8.1, 2.8.4		
	-Door Finish	stainless steel with hairline finish		
1.17	- Opening & closing features of door			
	- Architrave finish			
	- finish of push button panel	stainless steel with matt finish		
	- Functions and features of push button panel			
	- Landing sill type			
1.18	Levelling accuracy	+/- 5mm		
1.19	Buffer type	Spring type/Hydraulic		
1.20	Safety gear details			
1.21	Counter weight details			
1.22	Sizes, number and test loads of ropes			
1.23	Details of electrical protection			
1.24	Governor			
1.25	Emergency Rescue Device (Battery Backup)	Clauses 2.8.1, 2.8.4		
	Battery Bank	Clauses 2.8.1, 2.8.5		
	Type			
1.26	Capacity			
	Amp/hrs			
	Voltage			
	Battery Charger			
	Type			
	Make			
	Capacity			
1.27	Amp/hrs			
	Voltage			
	Parking Switch			
	Special features (if any)			
	Exhaust fan for Lift Machine Room			
	Make			
1.28	Model			
	Country of Manufature			
	Capacity			

MAINTENANCE AGGREMENT

SERVICE AND MAINTENANCE AFTER FREE MAINTENANCE PERIOD FOR BED LIFTS SYSTEM

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

The work shall include the sending of Contractor's personnel **once every four 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 (excluding VAT)
(After free maintenance period)

1st year Rs. .....
2nd year Rs. .....
3rd year Rs. .....
4th year Rs. .....
5th 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 the **"Replacement of old lifts and supply, installation, testing and commissioning of new bed lifts at main operation theater, Teaching Hospital, Peradeniya. (Contract No: THP/ AD/ 23/ 2025)"** 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 singed	**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**		

Manufacturer’s Authorization

Manufacturer's Authorization

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its Bid, if so indicated in the ITB.]

Date:…….... [Date of Bid Submission]
No.:……

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

WHEREAS

We……. [insert complete name of Manufacturer], who are official manufacturers of……. [insert type of goods manufactured], having factories at……. [insert full address of Manufacturer's factories], do hereby authorize……. [insert complete name of Tenderer] to submit a bid the purpose of which is to provide the following Goods, manufactured by us……. [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

Whereby extend our full guarantee and warranty in accordance with Content 6.3 in Specification, with respect to the Goods offered by the above firm.

Signed:…….. [insert signature(s) of authorized representative(s) of the Manufacturer]

Name:…… [insert complete name(s) of authorized representative(s)of the Manufacturer]

Title:…….. [insert title]

Duly authorized to sign this Authorization on behalf of: [insert complete name of Tenderer]

Dated on day of_____, _____[insert date of signing]