Lift Modernisation Specification

The Horniman Public Museum & Public Park Trust.
100 London Road,
London
SE23 3PQ

Visitors Lift

Our Ref: ESS.JB/2023/001

Revision No.	Date	Prepared by	Reviewed By	Client Approval
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Part 1 – Preliminaries

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Section 1 Tender Information

1.1 *Site Address & Client*

The Horniman Public Museum & Public Park Trust.

100 London Road,

London

SE23 3PQ

1.2 *Contract Administrator*

Elevating Safety Solutions Ltd
56A Park Avenue
Bromley
Kent
BR1 4EE
07884427971
Stewart@elevatingsafetysolutions.co.uk

1.3 *Principal Contractor*

Successful Contactor

1.4 *Principal Designer*

Elevating Safety Solutions Ltd
56A Park Avenue
Bromley
Kent
BR1 4EE
07884427971
Stewart@elevatingsafetysolutions.co.uk

Section 2 Tender Instructions

2.1 *Instructions for Tendering*

2.1.1 It is of the utmost importance that tenderers comply with the following instructions for tendering.

2.1.2 The Client does not undertake to accept the lowest or any tender. The Client reserves the right to accept the tender in part or whole, either concurrently or in separate financial years, therefore each lift must be priced on an individual basis.

2.1.3 Tenders not complying with any mandatory requirement (where the word must is used) may be rejected. Any queries regarding the tender documents should be raised byemail at the earliest opportunity. If the Client considers that a query may have a material effect on the tendering process, all tenderers will be notified in writing. No alteration or addition must be made to any part of the tender documentation including, Conditions, Drawings, Form of Tender, Collusive Tendering Certificate or the Specification and/or Schedules of Rates. All tenders shall be deemed to have been made subject to the terms of the tender documentation for the provision of the work enclosed with these instructions.

2.1.4 Tenders must not be qualified or accompanied by statements that might be construed as rendering the tender equivocal. Only unqualified tenders will be considered. The Clients decision as to whethera tender is in an acceptable form will be final.

2.1.5 Prospective tenderers shall ensure they are fully familiar with the nature and extent of the obligations to be accepted by them if their tender is accepted.

2.1.6 It is the responsibility of tenderers to obtain for themselves at their own expense all information necessary

for the preparation of their tender, including a site visit to fully assess the extent of the works and any site, mobility or access factors which may affect their pricing of the work. Tenderers will need to contact the contract administrator, to arrange visit.

2.1.7 Each tenderer shall be deemed to have satisfied himself before submitting his tender as to the accuracy and sufficiency of the prices stated by him in his tender. Each tenderer shall be deemed to have obtained for himself all necessary information as to risks contingencies and any other circumstances which might reasonably influence or affect his tender.

2.1.8 All information supplied by the Client in connection with this invitation to tender shall be treated as confidential by tenderers except that such information may be disclosed so far as is necessary for the purpose of obtaining sureties guarantees and quotations necessary for the preparation and submission of the tender.

2.1.9 Tenderers must not discuss the bid they intend to make other than with professional advisers who need to be consulted. Bids must not be canvassed for acceptance or discussed with the media or any other tenderer or Member or Officer of the Client.

2.1.10 Where a tenderer wishes to submit a modified or alternative bid, this must be in addition to the original tender submission and may or may not be considered by the evaluating officer. Any modified or alternative bid must be free of qualifications and state all cost implications. Any deviations from the Specification must be identified.

2.1.11 This invitation to tender does not constitute an offer.

2.1.12 Acceptance of the successful tender by the Client, subject to contract, shall be communicated to the tenderer in writing.

2.1.13 Tenders shall remain open for acceptance for a period of 13 weeks from the latest date for return of tenders.

2.1.14 The tender documents must be completed in English. Rates inserted should not include VAT.

2.2 *Communication*

2.2.1 All communication during the tender process must be submitted in writing to the contract administrator.

2.2.2 Clarifications and responses to clarification questions will be issued to all Tenderers.

2.2.3 The Client may, prior to the date for submission of Tenders, issue amended Tender Documents to Tenderers. Any amended Tender Documents will be issued as soon as reasonably practicable and will be deemed thereafter to replace any such Tender Documents previously issued to Tenderers. The Client will consider whether the issue of any such amended Tender Documents affect the indicative timetable or tendering process in general and may make such changes to the timetable or process as it considers appropriate.

2.3 *Project Overview*

2.3.1 The project is for the modernisation of one passenger/goods lift noted as the visitors lift with an option for full replacement to a machine room less lift.

2.3.2 Life expectancy: 20-25 years.

2.3.3 Lift Operation: Passenger/goods lift

2.3.4 The new lift components shall utilise open protocol systems, no closed systems will be considered.

2.3.5 It is important to consider that the museum will be open throughout the works so noisy works canot be completed during opening hours.

2.4 *Alternatives*

2.4.1 Your offer should be fully compliant with the contract terms and technical specifications. The equipment has been specified to assist in the standardisation of the equipment utilised by the Client. Deviations on specified components may invalidate your tender.

2.5 *Programme*

2.5.1 Programme dates must be based upon the tendered timeframes. The Contractor must inform the Contract Administrator within 7 days of an order being placed if these dates are to change together with full justification as to why the timeframes are to be different to those tendered. The use of terminology like ‘factory shutdowns’ will not be acceptable as a reason to extend the contract period.

2.5.2 The site phase programme tendered will not be allowed to be increased post-order and as such, the Contractor must ensure that they have allocated sufficient resources and working days including extended

hours and weekend working to ensure that the tendered site programme will be delivered.

2.5.3 It is a Contractual requirement that the Contractor must complete the overview dates within 7days from receipt of order or letter of intent and then submit a detailed programme using the within 14 days of the order or letter of intent being received.

2.5.4 Should the Contractor fail to provide a programme within the period stated above, the Contract Administrator shall raise the contract documentation with commencement and completion dates based upon the information provided in the tender return, using the date that either the instruction to proceed or order was issued.

2.6 *Site Visits*

2.6.1 All Contractors must visit site to check present site conditions, access, etc. The Client will not accept any additional charges caused by lack of knowledge.

2.6.2 All site visits must be arranged via the Contract Administrator.

Section 3 Contractual Information

3.1 *The Form of Contract*

3.1.1 The form of Contract shall be the JCT Intermediate Building Contract with Contractor's Design 2016. A contract will be raised against each site and must be signed by the Contractor and submitted prior to commencement of the contract unless a letter of Intent is agreed between the parties.

3.1.2 The Contract will be entered into as a deed.

3.1.3 Allow for all expenses in complying with these Conditions.

3.1.4 If the tendering contactor is the incumbent maintenance contractor, by agreeing to tender for the works the maintenance agrees to terminate the maintenance contract in 2 months of being notified of the results of the award of this contact.

3.2 *JCT Intermediate Building Contract 2016 – Deletion and completions*

1st recital	The employer wishes to have the following Work carried out	As per specification ESS.JB/2023/001
	Site	The Horniman Public Museum
2nd recital	The works include the design and construction of	The lift modernisation package
3rd recital	Drawings	N/A
	Specification	ESS.JB/2023/001
	Other Documents	N/A
4th recital	The following documents shall be deemed to form and be read and construed as part ofthis Contract. List of documents in order:	
	The JCT 2016 Intermediate Building Contract	To be underwritten
	The Specification	ESS/JB/2023/001
	The Work Schedule	TBA
	In the event of any conflict or inconsistency arising between any of the Contract Documents, unless indicated to the contrary, the order of priority of the Contract. documents are deemed to be the order in which they are listed above.	
6th recital	CDP Analysis	Contractor Designed Portion – as per specification. ESS.JB/2023/001
8th recital	Construction Industry Scheme (CIS)	Is a contractor for the purposes of the CIS
10th recital	CDM regulations	The project is not notifiable
11th recital	Division of the Works into Sections	N/A
13th recital and Schedule 5	Para 1. Collaborative Working	Applies
	Para 2. Health & Safety	Applies
	Para 3. Cost Savings and value improvements	Does not apply

	Para 4. Sustainable development and Environmental considerations	Applies
	Para 5. Performance indicators and monitoring	Applies
	Para 6. Notification and negotiation of disputes	Applies
Article 3	Contract Administrator	Elevating Safety Solutions Ltd
Article 4	Quantity Surveyor	N/A
Article 5	CDMC Co-ordinator / Principal Designer	Elevating Safety Solutions Ltd Or if he ceases to be the Principal Designer such other person as the Employer shall nominate in accordance with regulation 14 (1) of those Regulations
Article 6	Principal Contractor	Lift Contractor
Article 8	Arbitration	Applies
Clause 1.1	CDM Planning Period	4 weeks
Clause 1.1	Date for completion	To be confirmed
Clause 2.4	Date of Possession	To be confirmed
Clause 2.5	Deferment of possession of the site	Does not apply
Clause 2.23.2	Liquidated damages	At the rate of 2% of the contract value per week limited to 10% of the contract value
Clause 2.30	Rectification Periods	6 months from the date of practical completion of the Works
Clause 4.7	Advance payment	Does not apply
Clause 4.9.1	Interim payments – percentages of value Percentage of the total amount to be paid to the Contractor	Bond to be provide
Clause 4.12.1	Interim payments - final date	Final date for paym payment shall be 30 days from its due date
Clause 6.7	Insurance of Works	Clause 6.7A Does not apply Clause 6.7B Does not apply Clause 6.7C applies, disapply paragraph C.1Replace with alternative provisions (*Works insurance by contractor, Existing structure insurance by Client)*
Clause 6.4.1.2	Contractor insurance	£5,000,000 Public Liability £10,000,000 Employers Statutory Liability Contractor All Risk Reinstatement value of Works
Clause 9.2.1	Adjudicator	Royal Institute of Chartered Surveyors

Section 4 Financial

4.1 *Daywork/Overtime*

4.1.1 Under no circumstances will daywork rates be paid unless the Contract Administrator gives written instruction before the said works are undertaken by the Contractor. Any daywork undertaken, including the utilisation of subcontractors for lift works, shall be charged in accordance with the daywork schedules within the tender return documentation.

4.1.2 The Contractor is to include for all overtime working that the Contractor may determine necessary to complete the works within the required completion date.

4.2 *Material Mark-ups*

4.2.1 All material and plant including sub-Contractors should be marked-up in line with the priced schedule of Dayworks and mark-up percentages in the tender return documentation.

4.2.2 The Contract Administrator reserves the right to request a breakdown of all price variations to this contract and suppliers' invoices.

4.3 *Labour Rates*

4.3.1 All labour rates are to be specified in the price schedule of Dayworks and mark-up percentages in the tender return documentation.

4.4 *The Price*

4.4.1 Will be Net excluding VAT.

4.5 *Fixed Price Basis*

4.5.1 The price will remain fixed until completion of the work.

4.6 *Payment Terms*

4.6.1 No payment will be authorised or certified until such a time that the Contracts have been signed by the Contractor and duly received by Elevating Safety Solutions Ltd, or otherwise in accordance with a Letter of Intent, if agreed between the parties.

4.6.2 No invoice is to be raised until the Contractor has received a payment certificate from the Contract Administrator.

4.6.3 The Contract Administrator will issue payment certificates to the Contractor based on their valuation of works to date.

4.6.4 Payment certificates will be issued upon review at the following stages:

a) Detailed programme uploaded, Completion of design works and comment on GA drawingsby Contract Administrator.
b) Delivery of equipment to site.
c) Works executed on site (monthly valuations).

4.6.5 The Completion certificate and the final payment will not be released until the completed Operating & Maintenance manuals, the documentation for the safety file and all certification has been received and approved by the Contract Administrator.

4.6.6 The Contract will include a 5% retention sum of the total contract value to be paid on completion of the first 12 months defects liability period.

4.7 *Weekly Site Progress Reports*

4.7.1 On commencement of the site works, the Contractor shall submit every Friday - until works are complete - a weekly progress report. Failure to submit the required weekly progress report may lead to a delay in the payment of invoices.

4.8 *Valuations*

4.8.1 Valuations will be carried out between the Contractor and Contract Administrator at the following stages:

a) Delivery of materials to site or storage facility where site storage is not available.
b) Interim site visits throughout the works.

4.9 *Invoice Procedure*

4.9.1 Once the Contractor has received the Certificate of Payment from the Contract Administrator, an invoice should be raised in the Client's name, with the original document sent directly to the Client's nominated payment office.

4.9.2 The Client will not make payment of any invoices that is not accompanied by a Certificate for Payment issued by the Contract Administrator.

4.10 *Variations to Contract*

4.10.1 Upon request, the Contractor must provide a quotation for any additional works or materials not covered within the Contract.

4.10.2 All works must be quoted in-line with the day work rates, and based on the use of direct labour even if a Sub-Contractor is ultimately utilised. The quote must clearly show the number of hours and the base material cost plus mark-up.

4.10.3 Variation orders raised by the Contract Administrator must be received by the Contractor prior to any

additional works commencing.

4.10.4 Claims by the Contractor for extension of time to the Contract should be applied for at the same time as submitting a financial variation claim.

4.11 *Safety Objectives*

4.11.1 All Principal Contractors / Main Contractors & Sub-contractors are responsible and have a legal duty to ensure work is carried out safely without risk to employees, other workers and members of the public.

4.12 *CDM (Construction Design and Management Regulations 2015)*

4.12.1 The Principal Contractor / Main Contractor are required under the Construction (Design and Management) Regulations 2015 to manage and control all matters of health and safety site. The Principal Contractor will make all Sub-contractors aware that non-compliance with any health and safety legislation or site rules may result in them being removed from site.

4.12.2 Where a project is notifiable under the CDM Regulations; the Contractor will meet all the requirements in accordance with the Regulations. A full Construction Phase Health and Safety Plan will be submitted 28 days prior to site commencement, and only on receipt of written authorisation from the Client via the Principal Designer will site works be allowed to commence.

4.12.3 The plan must be issued to the Client via the Principal Designer for review at least 28 days prior to any proposed start date. The Contractor will undertake the duties of the Principal Contractor as defined by the CDM regulations.

4.12.4 Where a project is not notifiable under the Regulations, the project will still be run in line with these Regulations. The Contractor will be named as the Main Contractor and meet all the requirements and ensure that they discharge their duties in accordance with Parts 1, 2, 4 & 5 of the CDM Regulations 2015. A full Construction Phase Health and Safety Plan must be issued at least 28 days prior to any proposed start date and only on receipt of written authorisation from the Project Managers will site work commence.

4.12.5 The Construction Phase Health and Safety Plan, including all site-specific risk assessments and method statements, must be provided in an electronic PDF format and uploaded by the Contractor on to the Pro-Con system for approval by the Client via their Principal Designer. Should the Client request a hard copy for review then this will be provided by the Contractor in addition to the electronic upload.

4.12.6 The uploaded plan shall consist of one file that incorporates an electronic index system.

4.12.7 Authorisation to proceed with site works will not be issued until the Construction Phase Health and Safety Plan has been approved as sufficiently developed by the Client via their Principal Designer / Project Manager to allow the works to commence on site.

4.13 *Sub-Contracting*

4.13.1 The Contractor shall not: Assign the Contract or any part thereof or the benefit or advantage of the Contract or any part thereof; Sub-contract the provision of the Contract or any part thereof to any person without the previous written consent of the Contract Administrator, which consent shall be at the discretion of the Contract Administrator and if given, shall not relieve the Contractor from any liability or obligation under the Contract and the Contractor shall be responsible for the acts, defaults or neglect of any Sub-contractor or his agents or employees in all respects as if they were the acts, defaults or neglect of the Contractor or his agents or employees. The Contractor will pay the Client all reasonable costs of vetting any proposed sub-contractor.

4.13.2 Sub-Contractors may be utilised for the following works however the Contractor must nominate the companies on the attached schedules within the tender return documentation, where a sub-Contractor is utilised copies of the risk assessments, method statements and insurances must be included in the Construction Phase Health & Safety Plan.

4.13.3

a) Lift Removal Works
b) General Building and Electrical Works
c) Provision of Attendances (Scaffold etc)
d) Lift Car Interior Finishes

4.13.4 Where the Contractor intends to utilise Sub-Contractors to undertake the installation works, they shall be fully inducted by the Contractor with regards to the specified works, health and safety requirements,

site rules etc. and a copy of the induction shall be recorded and retained within the Construction Phase Plan for inspection by the Contract Administrator. The Contractor must nominate the proposed Sub-Contractor on the attached schedules in the tender return documentation for approval by the Contract Administrator. The Contract Administrator may without explanation reject the use of a proposed Sub-Contractor.

4.13.5 The Contractor shall ensure that the details of all proposed Sub-Contractors and their work is included within the tender submission together with supporting documentation; and thereafter, await the Contract Administrator's approval.

4.13.6 Where the contractor intends to utilise a sub-contract test engineer to undertake the testing and commissioning of the lift, they shall not be associated with or an employee of the sub-contract company that has undertaken the site installation works. The Contractor will also be required to provide copies of proposed test engineers qualifications and insurances.

4.14 *Labour*

4.14.1 Due to the nature of the works, single man working will not be allowed and the Contractor must base their offer on there being a minimum of two personnel on site at any time. Should during a site visit by the Contract Administrator or other duly authorised person it be found to be only a single man on site, they will be stopped working and removed from site until such time two men are available.

4.14.2 No action by the Contract Administrator or other duly authorised person under this Clause shall entitle the Contractor to an extension of time or to recover any loss or expense arising there from.

4.15 *Working Hours*

4.15.1 Normal working hours are to be between 0830hrs and 1730hrs Monday to Friday excluding Bank Holidays. Additional working hours can be arranged via prior agreement with the Contract Administrator.

4.15.2 All works on site are to be planned for continuous working as per the times stated above, and Monday to Sunday where an accelerated programme has been agreed. Should the installation engineers be required to attend a training course whilst the works are on site, the Contractor shall provide at least 15 working days' notice of the course to the Contract Administrator

4.16 *Personnel*

4.16.1 Each unit being worked on must have a qualified fitter present at all times and a copy of their qualifications submitted on request.

4.17 *Identification Cards & Uniform*

4.17.1 Where there is a conflict in Client's site rules, these shall take precedent over the following.

4.17.2 The Contractor shall ensure that all persons employed or engaged in the carrying out of the works are provided with an Identification Card, and that such persons, whether employed by Sub-contractors or otherwise, always carry such Card whilst on the site.

4.17.3 An Identification Card shall bear a photograph of the holder, indicate the name of the Customer, be authenticated by a senior representative of the Contractor, and be signed by the holder.

4.17.4 The Contract Administrator or other person authorised by the latter in writing, shall always have the power to request persons employed or engaged on the works to show their Identification Cards.

4.17.5 The Contract Administrator or other duly authorised person may order any person who fails when requested to show their Identification Card to leave the site. Any such person so ordered shall immediately leave the site and shall not return thereto until permitted to do so by the Contract Administrator or other authorised person.

4.17.6 Operatives must be provided with and wear Company Uniform. Clothing should be of a standard colour and display the company Logo or Badge to distinguish the firm's corporate identity.

4.17.7 No action by the Contract Administrator or other duly authorised person under this Clause shall entitle the Contractor to an extension of time or to recover any loss or expense arising there from.

4.18 *Dilapidation Survey*

4.18.1 Dilapidation photos will be undertaken by the Contractors project manager on the first morning on site, to establish the condition of the areas before the hoardings are erected.

4.18.2 The Contractor shall forward to the Contract Administrator within 5 working days of the site commencement a dilapidation report detailing any existing damage to the areas. Where a report is not

submitted by the Contractor it shall be deemed that there is no damage to the existing areas.

4.19 *Security*

4.19.1 All personnel should sign the visitor's book at reception on arrival and departure.

4.19.2 All keys provided for access shall be signed out in the morning and signed back in on completion of works each day.

4.19.3 If any access door needs to remain unlocked and unmanned during unloading etc. then the operation should be discussed and agreed with the site manager.

4.20 *Fire Precautions*

4.20.1 The Contractor shall take all necessary precaution to prevent personal injury, death or damage to property or the works.

4.20.2 The Contractor shall comply with the current Joint Code of Practice "Fire Prevention on Construction Sites".

4.20.3 Prior to undertaking any 'Hot Works' the contractor shall obtain a hot works permit from the site manager daily, this may require prior notice. The Contractor shall be responsible for ensuring all smoke detectors and fire sensors connected to the building fire alarm system are isolated in the local area that the works are being undertaken prior to commencing works and that they are re-instated onceworks have been completed and the hot works permit closed. No system shall be left isolated overnightunder any circumstances.

4.20.4 Any hot works shall be completed a minimum of 2 hours before the contractors site personnel or sub-contractor leave site.

4.21 *Equipment Delivery*

4.21.1 The Contractor must confirm by e-mail to the Contract Administrator that all new materials and equipment has been delivered to site prior to decommissioning the existing units.

4.22 *Movement of Equipment*

4.22.1 Care must be taken when moving equipment through the premises. Prior to any movement the Contractor must provide a method statement and risk assessment stating the route and necessary safety precautions. The Contractor will be liable for any damages sustained to the property.

4.22.2 The Contractor should allow for undertaking the movement of heavy equipment outside normal working hours to minimise disruption to the building operations.

4.23 *Applicable Regulations*

4.23.1 The lift should comply to all current standards including, but not limited to, the following:

4.23.2 General Health & Safety

a) The Health and Safety at Work etc Act 1974 (HASAW)
b) The Management of Health and Safety at Work Regulations 1999
c) The Construction, Design and Management Regulations 2015 (CDM)
d) The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)
e) The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
f) The Provision of Work Equipment regulations 1998 (PUWER)
g) Approved Document Part M - Building Regulations
h) BS 9999:2017 Code of practice for fire safety in the design, management and use of buildings

4.23.3 General Lifts

a) Health Technical Memorandum 08-02: Lifts 2016 **(All health authority buildings)**
b) BS EN 81-28 Safety rules for the construction and installation of lifts – Lifts for the transport of persons and goods - Part 28: **Remote alarm on passenger and goods passenger lifts**.
c) BS EN 81-58Safety rules for the construction and installation of lifts – Examinations and Tests Part 58: **Landing doors fire resistance test**.
d) BS EN 81-70 Safety rules for the construction and installation of lifts – Particular applications for passenger and goods passenger lifts - Part 70: **Accessibility to lifts for persons including persons with disability.**
e) BS EN 81-71 Safety rules for the construction and installation of lifts. Particular applications to

passenger lifts and goods passenger lifts. **Vandal resistant lifts**

f) BS EN 81-11 Recommendations for the installation of new and modernisation of, **hydraulic- lifts in existing buildings**
g) BS EN 81-72 Fire fighters' lifts (where practically possible).
h) BS EN 81-73 Behaviour of lifts in the event of fire
i) BS EN 81-80 Rules for improvement of safety of existing passenger and goods passenger lifts
j) BSEN13015 Maintenance for Lifts and Escalators
k) BS7255 Safe Working on Lifts
l) EN 131 Ladders
m) EN 1050 Safety of machinery
n) ISO 4190 Lift installation Part1 Class 1, II, III and VI lifts

4.23.4 Testing:

a) BS EN 81:50 Safety rules for the construction and installation of lifts – **Examinations and tests**
b) BS 8486-3/4/5/6/7/8/9 Examination and test of new lifts before putting into service. Specification for means of determining compliance with BS EN 81. **Passenger and goods passenger lifts conforming to BS EN 81-20**

4.23.5 New Lifts:

a) The Lift Regulations 2016
b) BS EN 81-20: Safety rules for the construction and installation of lifts. Lifts for the transport of persons and goods. Passenger and goods passenger lifts

4.23.6 All applicable regulations listed above shall be as amended, re-enacted or extended at the relevant time.

Section 5 Design

5.1 *Design Responsibilities*

5.1.1 Although several components may have been specified, the final design responsibility will remain with the Lift Contractor. Should the Contractor consider any of the equipment to be incompatible, then this should be made clear at the tender stage. No claim will be accepted for additional time or monies in respect of compatibility issues after the tender period.

5.1.2 Any equipment found to be incompatible should be highlighted on the deviations page within the tender documentation, with the proposed alternative and technical reasons.

5.2 *Material Protection*

5.2.1 Responsibility for protecting all the lift finishes etc. will remain with the Contractor until acceptance by the Contract Administrator on completion of the lift installation.

5.3 *Site Dimensions*

5.3.1 The Contractor will be responsible for obtaining and confirming all site dimensions including the lift travel on all existing buildings, prior to submitting their tender offer to ensure they are able to submit a fully compliant bid. No clarification stating that the offer is subject to a detailed site survey will be accepted, any such clarification will invalidate your tender.

5.4 *Detailed Technical Survey*

5.4.1 The Contractor will ensure that any detailed technical site survey required to prepare general arrangement drawings and allow the lift equipment to be ordered will be completed within two working weeks from the date that the order to proceed is issued.

5.5 *General Arrangement Drawings*

5.5.1 The Contractor within four working weeks from receipt of order or instruction to proceed, provide a set of Lift GA Drawings for the Contract Administrator to comment on. Copies will be supplied in PDF electronic format with an up-to-date drawing register for each issue.

5.5.2 The lift GA drawing for the motor room layout must clearly show any point loading imposed on the motor room slab and the locations of light switches, lights, lifting beams, isolators, consumer units, emergency stop switches, heaters and thermostat, plinth ladders, plinth barriers and guarding around any hatches in the motor room.

5.5.3 The lift GA drawing for the shaft must clearly detail the car and counterweight guide positions, DBG's, brackets, shaft lighting and switches, buffers, limit switch location, encoder location, pit ladder and emergency stop switches.

5.5.4 The lift GA drawings must clearly show, with dimensions, the Man Safe Areas in the lift pit and on the car top.

5.5.5 The Contractor will also be required to submit with the GA Drawings, the following detailed drawings for approval by the Contract Administrator (supplied PDF electronic format):

a) Structural Engineers drawings and calculations (where applicable)
b) Car operating panel layout
c) Motor room layout
d) Lift car interior layout details
e) Landing entrance layout including indicators, pushes and architraves.

5.5.6 The GA drawings will be commented on in writing within one working week.

5.6 *Existing Building Drawings*

5.6.1 There are no existing site drawings available for the project, the Contractor must ensure that all costs associated with obtaining any necessary structural data etc., are incorporated within the tender sum.

5.7 *Asbestos or Suspected ACM's*

5.7.1 The Client's Management Survey will be provided.

Section 6 Testing and Commissioning

6.1 *Contractor Testing*

6.1.1 On completion of the lift works, the Lift Contractors shall undertake full testing and commissioning of the lift including all full load, balanced load and no-load testing of the lift car, drive and safety gear systems.

6.1.2 The Lift Contractor shall also check the installation for full compliance with the specification.

6.1.3 Any item identified during the testing and commissioning by the Lift Contractors test engineer must be addressed prior to the witness testing of the installation.

6.1.4 Where the Lift Contractor intends to use a sub-contract test engineer, they must not be associated with any sub-contractor undertaking the installation works. Full details of the proposed test engineer relevant qualifications must be provided to the Contract Administrator, prior to the testing and commissioning being undertaken. A representative of the Contractors management/supervisory team must be present during the witness testing where a sub-contract tester is utilised.

6.1.5 Self-testing of installations will not be allowed under any circumstances.

6.2 *Witness Testing*

6.2.1 On completion of the installation test carried out by your company, a full test will be carried out with the Contract Administrator or his representative present.

6.2.2 A written request on the Elevating Safety Solutions Ltd witness test request form must be submitted, at least 7 Working days prior to the required attendance. Elevating Safety Solutions Ltd will confirm attendance and although we will endeavour to meet this date, the witness test date may be delayed for up to 48 hours, subject torelevant commitments at the time of the request. Any delay in handover caused by the delay in witness test will be deemed sufficient cause for an application for an extension of time.

6.2.3 The following documents must be received by Elevating Safety Solutions Ltd no later than 36 hours prior to the witness test, failure to supply these will prevent the witness test from proceeding:

a) A signed test certificate.
b) Declaration of Conformity (if applicable)
c) Electrical certificates for shaft lighting, isolators etc
d) Lift entrance fire certificate
e) Photographs of the landing entrances to confirm that all building and decorative finishes are complete.

6.2.4 Interpretation of project ready for witness test: - When arriving on site the lift must be fully tested and operational, a completed signed test certificate must be available, and any outstanding items listed by your tester completed. All builders & electrical works including the removal of the hoardings must be complete.

6.2.5 The installation engineers or approved Sub-Contractor undertaking the installation works shall be present at the time of the witness test to complete any items identified during the witness testing. Where the testing is sub-contracted the Contractors Project, Manager shall also be present at the witness test.

6.2.6 The unit must be ready and comply with all other conditions prior to 09:00hrs on the day of witness testing.

6.2.7 All UPS devices must be fully charged and ready for emergency hand winding testing.

6.2.8 The unit must be ready for operational service once the witness test has been completed.

6.2.9 The Contract Administrator will require at least 48 hours' notice of a cancellation of witness test. The Contractor will remain liable for any travel costs incurred prior to the cancellation of the witness test i.e., train fares purchased in advance.

6.2.10 Should the lift not be ready for the test and the 48-hour notice of cancellation not issued, then the Contractor will be liable for the costs of the additional visit at a rate of £650.00 per visit. Any revisit witness test date shall be subject to a further five working days' notice period the invoice issued by Elevating Safety Solutions Ltd for any additional visits must be paid promptly by the Contractor; the final project paymentmay not be certified for payment until such time that any invoice for additional visits is paid by the Contractor.

6.2.11 Any items noted during the witness testing must be completed within a maximum of 24 hours of the witness test being undertaken, the lift will not be allowed to be placed into service until all listed items are completed, unless authorised by the Contract Administrator. Failure to complete the identified items within the required timeframe will mean that the project is not complete and may lead to Liquidated

Damages being applied at the rate detailed in the Contract Information

6.3 *Lift Completion*

6.3.1 Practical completion of the lift will not be achieved until all required electronic documents have been received, and the Contractor has confirmed, that all snagging itemsreported on the witness test report are completed.

6.3.2 The Contract Administrator will revisit site to confirm that all the items are complete. Should it be found that items are still outstanding; then a revisit will be required.

6.4 *Documents Required*

6.4.1 A completion certificate will not be issued until all the necessary documents and interface tools for the control system and other equipment are in the possession of the Contract Administrator. These are to be provided within a maximum of two working weeks from the date of handover of the lift.

a) One hard copy and one electronic copy in PDF format of the following documents will be provided:
b) Full Test Certificates.
c) C E Certification (Declaration of Conformity Document) and/or UKCA document.
d) NIC EIC Certificate for all non-lift electrical systems.
e) Rope certificate.
f) Lifting beam certificate.
g) O&M manuals.
h) Full controller and drive manuals giving the complete set-up & commissioning procedures and a full set of as fitted electrical wiring diagrams.
i) Health & Safety File Information (CDM)

6.5 *Electrical Drawings*

6.5.1 One full set of laminated electrical drawings shall be provided by the Contractor, and securely fitted to the inside of the controller cabinet door. The schematics must be of sufficient sizes so that they are clear and legible.

6.6 *Operating and Maintenance Manuals*

6.6.1 Complete Operating & Maintenance manuals shall be submitted in electronic pdf format and set out in accordance with Table 1 below for approval by the Contract Administrator. The Contractor, on request, shall provide one hard copy.

Table 1	
Section:1 Introduction and Guide	Table of contents How to use guide. Emergency Information Contractual and Legal Information
Section:2 Health and Safety	Guidance to relevant legislation COSHH Risk assessments Disposal information
Section:3 General Description of the Project	System operation Design parameters
Section:4 Operating Procedures	General Automatic operation Routine inspection's fault conditionsEmergency procedures Fault finding First Aid

Section:5 Maintenance Procedures	Generic maintenance procedures for equipment or links to specific manufacturer's information, Maintenance task matrix
Section:6 Manufacturer's Schedules	Plant schedules Asset Register Spares List Manufacturer's contact details
Section:7 Commissioning data and Certification	All certification listed and linked. An Essential safety Component register
Section:8 Manufacturer's Literature	All equipment listed and linked directly to Section 6
Section:9 Drawings	All drawings listed and linked
Section:10 Residual Risk register	Residual Risk register

Part 2 – Specification

Section 1. Site Establishment

1.1 *Task Lighting*

1.1.1 The Contractor will provide adequate task lighting within the lift shaft, which is to be installed prior to works commencing, and should remain until such time the new lift shaft lighting becomes operational.
1.1.2 The temporary lighting must achieve at least 100 Lux throughout the designated construction zone.
1.1.3 The Contractor will provide all other temporary lighting as required to allow for safe working.

1.2 *Storage*

1.2.1 A suitable location is available for a steel container to be positioned on site, subject to access restrictions; the Contractor will provide the container and any additional security or storage as may be required.
1.2.2 Where the Contractor wishes to locate a container on the road or in a parking bay adjacent to the site, they shall be responsible for obtaining suitable permits from the Local Authority and all associated costs.
1.2.3 The Contractor shall ensure that the container is removed from site at the earliest possible opportunity and at the latest by the date of the witness test.

1.3 *Health & Safety Station*

1.3.1 The contractor shall set up a Health and Safety station; this shall be located either in the motor room or inside one of the hoardings. The station shall consist as a minimum of a white notice board & shelf. The Construction Phase Plan together with the visitors signing book, accident book, first aid kit, fire extinguisher and site rules shall all be held at the Health & Safety station and all required notices shall be displayed.

1.4 *Welfare Facilities (provided)*

1.4.1 The use of communal welfare facilities has been agreed and will be provided by the Client. The Contractor will ensure that the designated facilities are maintained in a clean condition throughout the works. The Client reserves the right to withdraw these facilities should the Contractor fail to maintain them in a clean and tidy condition or fail to meet other rules confirmed at the pre-start meeting regarding the use of the facilities. If the Welfare facilities are withdrawn by the Client due to the failure by the Contractor to maintain them in a suitable condition, the Contractor shall be responsible for all costs incurred by the Client in returning their facilities to a satisfactory level as well as the cost of providing suitable facilities for their site personnel.

1.5 *Portable Fire Fighting Equipment*

1.5.1 Portable firefighting equipment (extinguishers) must be present within the working areas. The equipment must be of the correct type to deal with the potential risks involved with the works and hold an up to date test marking.

1.6 *First Aid*

1.6.1 The Health and Safety (First-Aid) Regulations require employers to provide adequate and appropriate first-aid equipment, facilities and people so their employees can be given immediate help if they are injured ortaken ill at work.
1.6.2 The minimum first-aid provision on any work site is:

a) A suitably stocked first aid kit;
b) An appointed person to take charge of first aid arrangements;
c) Information for employees about first-aid arrangements

1.6.3 The minimum requirement for the first aid box is as follows, this is a suggested contents list only and the contents of any first-aid kit should reflect the outcome of your first-aid needs assessment:

a) A leaflet giving general guidance on first aid.
b) Individually wrapped sterile plasters (of assorted sizes), appropriate to the type of work including hypoallergenic plasters if necessary.
c) Sterile eye pads.
d) Individually wrapped triangular bandages, preferably sterile.
e) Safety pins.
f) Large, individually wrapped, sterile, unmedicated wound dressings.

g) Medium-sized, individually wrapped, sterile, unmedicated wound dressings.
h) Disposable gloves

1.6.4 As Principal Contractor, the Contractor should undertake a first aid assessment for the project and appoint sufficient trained first aiders. Where the assessment of first-aid needs identifies that a trained first aider is not required for the project, The Contractor should appoint someone who will be permanently on site to take charge of first-aid arrangements. The role of this appointed person includes looking after first-aid equipment and facilities and calling the emergency services when required.

1.7 *Fire Rated Hoarding*

1.7.1 In accordance with BS 8899, a temporary full height enclosure should provide a minimum fire resistance of 60 min in accordance with BS 9999.
1.7.2 These hoardings will be designed to meet site conditions to ensure no fire exit or main exit routes are obstructed.
1.7.3 The hoardings will have a minimum depth of at least 750mm, and a width more than the landing structural opening, but also encompass the landing pushes and indicators. The contractor must be able to carry out all building works on the landing entrances from within the hoarding.
1.7.4 The hoardings will have a hinged door fitted with a slam lock and spring closer to ensure the door is locked automatically when closed and requires the use of a key to open.
1.7.5 The hoardings must incorporate temporary lighting to a suitable level to provide a safe working environment.
1.7.6 The design criteria of the hoardings must be detailed in the Construction Phase Plan

1.8 *Entrance protection*

1.8.1 Once the new landing entrances have been erected in their entirety including the fitting of all mechanical and electrical locking devises, The Contractor may utilise landing entrance barriers of a suitable design and size to create a safe working space when working at landings or within the shaft. The landing entrance protection barriers must display all relevant signage.
1.8.2 Under no circumstances shall a landing entrance be left unattended with the landing doors in an unlocked condition, an instance of this will be classed as serious Health & Safety failure, and the Contractor removed from site.

1.9 *Signage Required*

1.9.1 A sign including suitable pictograms shall be fixed to the door of each hoarding stating “Danger Lift Well” and “Access Forbidden to Unauthorized Personnel”. All other relevant signage including the requirement to wear PPE, “Lift out of Service” and “Keep Locked” shall also be displayed on the hoarding.

Minimum Required Signage for Hoardings

1.9.2 Names and contact details of the site manager, first Aider and fire Marshall etc. shall be clearly displayed on the lower terminal floor hoarding.
1.9.3 Details of the Fire Muster point must be clearly displayed on the lower terminal floor hoarding.
1.9.4 Emergency contact details, directions and postcode of the local hospital should be displayed on the lower terminal floor hoarding.
1.9.5 On the entry/exit floor hoarding a laminated copy of the F10 document (where project is notifiable) shall be displayed
1.9.6 A notice should also be displayed on this hoarding to identify the location of the Construction Phase Health & Safety Plan.

Section 2. Building Works

2.1 *Building Sub-Contractors*

2.1.1 Building works can only be undertaken by qualified Building Sub-Contractors suitably trained and CSCS carded for the works that they will be undertaking. The use of the lift engineers to undertake any building works will not be allowed and it is the Lift Contractors responsibility to ensure correctly qualified building contractors are utilised. The Lift Contractor will be required to provide details of the Building Sub-Contractor that they intend to use together with details of their CSCS card numbers within 6 weeks of receipt of order or instruction to proceed. The Building Sub-Contractor will then be vetted by the Contract Administrator and approved.

2.1.2 Building Sub-Contractors that have not been vetted and approved by the Contract Administrator will not be allowed to undertake works on site. Any delays to the project due to the Lift Contractor not obtaining suitable approval of their Building Sub-Contractor prior to works commencing will not be reason for a programme extension and the Lift Contractor shall be responsible for all costs incurred whilst vetting and approval are undertaken.

2.2 *Off-loading*

2.2.1 Off-loading will be carried out by the Contractor; no assistance will be provided by others.

2.2.2 When moving equipment through the building, the floor area along the route shall be protected with a layer of Impact resistant cushioned floor covering with anti-slip backing. Where the possibility of damage to the floor may occur by the movement of heavy equipment, a layer of 3mm thick hardboard or MDF boarding shall be applied over the floor impact resistant cushioned floor protection.

2.3 *Existing Lift Removal*

2.3.1 All lift components specified for replacement are to be removed in their entirety. All fixings should be cut back to ensure a flush finish.

2.3.2 The Contractor will be responsible for removing all redundant material from site and meeting all the applicable Regulations regarding transport and final disposal. All redundant oils shall be collected in a suitable container for transport by a Registered Company.

2.3.3 When moving equipment through the building, the floor area along the route shall be protected with a layer of Impact resistant cushioned floor covering with anti-slip backing. Where the possibility of damage to the floormay occur by the movement of heavy equipment, a layer of 3mm thick hardboard or MDF boarding shall be applied over the floor impact resistant cushioned floor protection. Suitable protection should also be providedto any wall surfaces that may be damaged by the movement of the equipment.

2.3.4 The client reserves the right to retain redundant components to support the remaining units on site. Any components retained will be moved to an agreeable location on site for storage by the contractor.

2.3.5 Full traceability of all disposed waste materials and substances, with supporting documentation, shall be retained by the Contractor and provided to the Contract Administrator on request.

2.3.6 All skips shall be of the lockable type; or the Contractor shall utilise a drop and load system, with the skip being delivered in the morning and collected before the end of the days' shift.

2.4 *Scaffolding*

2.4.1 The Contractor is to provide and fix all necessary scaffolding, staging, and ladders. In addition, guarding to all openings and the protection of work are to be provided during the entire site works. Scaffolding must have toe-boards edge protection where voids exceed 300mm. Guarding and the provision of safe access to the lift-well and motor-room – as required by the Health and Safety at Work Act – are the responsibility of the Principal Contractor.

2.4.2 The scaffolding will be tagged by the erector. Periodic inspections by a competent person shall not exceed 7 days from the commissioning date.

2.5 *Landing Making Good*

2.5.1 The Contractor should make good the surrounds of all entrances, after the door / frames are finally positioned and fixed. These works shall be to a high-quality finish and match the existing; including the re-instatement of any skirting, dado rails or any other decorative finishes.

2.5.2 The entrance threshold screed shall be cut back to a minimum depth of 150mm, and once the new entrance

sill/frame is finally positioned and fixed, the cut recesses will then be filled with a high strength cementitious mortar. The mortar type used must have the ability to cure within a 24-hour period.

2.5.3 The floor aesthetic finish shall be of a material equivalent to the existing and securely fixed at each landing entrance. A neat join will be made in a straight line between the return walls either side of the landing entrance. The colour of the infill shall match the existing or contrast if the original is unavailable. Samples must be forwarded to the Contract Administrator for approval.

2.6 *Fire Rating of Lift Shaft, Apertures and Entrances Surrounds*

2.6.1 The contractor must ensure that all making good around the lift shaft and the fire rated entrances are designed and installed to achieve a minimum fire rating of 60 minutes integrity and insulation in accordance with the criteria of BS 476: Part 22.

2.6.2 Fire-fighting shaft construction separating fire-fighting shaft from rest of building shall be 120 min from the side remote from shaft and 60min from the shaft side as stated in BS999 Fire safety in the design, management and use of buildings – Code of practice We have provided a sample construction details below however the contractor must provide the method of making good and confirm compliance before commencing the works..

2.7 *Shaft and Pit Clean Down / Paint*

2.7.1 The contractor will include for a complete clean down of the lift shaft, pit and motor room/pump room. All surfaces must be cleaned and where required they shall be degreased using a suitable water-based product.

2.7.2 The lift shaft wall and ceiling should be dust sealed and painted in two coats of white non-flake paint.

2.7.3 The pit will be painted in a heavy-duty red floor paint up to sill height.

2.7.4 The shaft and pit will be painted after the removal of the existing lift prior to the new installation.

2.7.5 On completion of the painting of the pit, the Man Safe Area shall be permanently marked on the pit floor.

2.8 *Lift Shaft Structure*

2.8.1 The contractor will be responsible for any modifications to the shaft required for support steelworks including the removal of any redundant pulley beams or bearings to allow the installation/modernisation as specified. The contractor will include for a structural engineer's survey and report to ensure that the existing structure will take the new loads imposed. A copy of the structural engineer's report shall be provided to the Contract Administrator.

2.9 *The Lifting Points and Craneage*

2.9.1 The Contractor is to provide and fix all temporary or permanent lifting points at the top of the lift well and within the motor room where applicable, as required for the new installation. The points must be suitably tested and marked showing the safe working load in metric KG units.

2.9.2 Where existing beams are being retained, they shall be suitably tested and marked showing the safe working load.

2.9.3 A certificate must be held on site for all lifting points and equipment and a copy issued to the Contract Administrator upon request.

2.10 *Drill Fixings/Inserts*

2.10.1 On an existing lift shaft, drill fixings may be required, and these should normally utilise a chemical fixing system. The Contractor shall assess the structure of the shaft and the suitability of their proposed fixings at tender stage and if required they should verify the suitability of the fixing with their structural engineer prior to submitting their offer. Any concerns shall be clearly identified within the tender documents.

2.11 *Other Building Services*

2.11.1 The Contractor shall detail within their tender price for the temporary or permanent removal of any other building services that may impede the removal/installation of the lift equipment.

2.11.2 The Contractor must clearly state in their tender return documents any building services that require alteration; but which are not included in their offer.

Section 3. Electrical Works

3.1 *Electrical Installations & Testing*

3.1.1 All electrical works included in this section must be carried out by an Approved Contractor or Conforming Body enrolled with **NICEIC**. On completion of the electrical installation the equipment will be tested prior to use by the lift contractor.

3.1.2 The electrician must have a CSCS card clearly defining the person(s) as qualified electrician and a copy must be sent to the contract administrator.

3.1.3 On completion an Electrical Installation Certificate shall be issued in accordance with British Standard 7671 – requirement for Electrical Installation(s).

3.1.4 The schedule of circuit details for the installation must clearly define all the separate elements of the electrical works i.e. lift isolator, consumer unit, motor room light, shaft lights etc.

3.1.5 A copy of the certificate must be sent to the contract administrator and a copy inserted within the construction. phase safety plan.

3.2 *Lift Isolator*

3.2.1 The existing mains isolating switch will be replaced, the Contractor shall check the fuse rating of the unit either within the motor room or at its distribution point in the intake room to ensure the fuse rating will be in accordance with the new lift system's power demands..

3.3 *Emergency Lighting*

3.3.1 Non-maintained LED emergency light fitting shall be installed as per the list below. The emergency lighting shall have a LED emergency bulkhead light(s) that has an output of 5 watts for 3 hours in the event of a power outage. It has an ultra-slim Flame-retardant polycarbonate housing.

a) Lift Motor room or pump room
b) Car Top, positioned to allow personnel to exit hazardous areas
c) Lift Pit, positioned to allow personnel to exit hazardous areas,
d) On MRL units there must be an emergency light unit installed either in the controller panel or the maintenance access panel to ensure all the switches and indicators for the emergency release procedures are illuminated in the event of a power failure.

3.3.2 Test switches shall be installed:

a) in the motor room to test all units installed within this area as applicable.
b) a car top test unit will be installed to test the car top and pit unit.
c) On MRL units there a must a test switch in the controller panel or the maintenance access panel.

3.4 *Well & Pit Lighting*

3.4.1 Permanent LED lighting is to be provided in the lift well. The lighting must give a minimum light level of 150 Lux at 1 metre from the pit floor (with car immediately over) and 1 metre above the car roof at all points in the lift well. Lights must be positioned no more than 0.5 metres from the highest and lowest points of the Lift well and at intermediate points to achieve this light level. At least one fitting is to be placed at intervals no greater than 3 metres between centre lines, and must be provided with suitable mechanical protection.

3.4.2 On all firefighting and evacuation lifts the shaft lights fittings shall be installed to achieve an ingress protection (IP) rating of IP56 throughout the installation and IP67 in the pit area.

3.4.3 On machine room less units with machinery in the lift shaft, then the lighting in this area must achieve at least 200 lux.

3.4.4 The lighting shall utilise 3 way switching, the switches must be located within the, lift pit, on the car top adjacent to the emergency stop button and in the controller. The well lights must be able to be switched both OFF and ON from all locations. The switches shall be labelled "LIFT WELL LIGHT SWITCH."

3.4.5 The lighting must be tested and certified in accordance with BS 7671 Requirements for Electrical Installations (current at time of tender) and should not be used until certified.

3.5 *Pit Sockets*

3.5.1 A twin 13amp socket outlet shall be provided in the pit(s) of the well and the lift motor room, the socket(s) as a minimum should be of a metal clad design and be IP56 rated. All sockets must be individually protected by a residual current Device (RCD).

3.6 *Motor Room Lighting*

3.6.1 The existing motor room lighting shall be replaced with LED fittings to provide a minimum of 200 Lux at floor level adjacent to the control panel if located in the existing motor room.

3.6.2 The switch to control the motor room light must be located adjacent to the motor room entrance and be labelled "LIFT MOTOR ROOM LIGHTING", the switch shall also incorporate a facility to test the emergency lighting within the motor room.

3.6.3 The new motor room lighting shall incorporate at least one maintained emergency light fitting located adjacent

to the control panel. This is a high-risk task area therefore the illuminance for the emergency lights should be 10% of the normal mains illuminance or at least 15 Lux - whichever is the greater and within a minimum response time of 0.5s.

3.7 *Electrical Testing*

3.7.1 All electrical equipment should be supplied, installed, and tested by the Contractor in accordance with the current edition of BS 7671Requirements for Electrical Installations.

Section 4. Detailed Lift Specification

4.1 *Project Overview*

4.1.1 The project is for the modernisation of one hydraulic passenger lift.
4.1.2 Life expectancy: 20 Years
4.1.3 The new lift components shall utilise open protocol systems, no closed systems will be considered.

4.2 *Specific Details for lifts as modernised*

	Visitors Lift
Drive	Hydraulic
Hydraulic Layout	Twin indirect side acting rams
Usage	Passenger/Goods Lift
Load	26 Person 2000KG
Speed	Approximately 0.5/sec
Floors	4
Floor Designation	Front: LG, G,1 Rear: Store (opposite LG),G1
Door Configuration	Two panel Side Opening as existing
Standards	EN81:80 EN81:70 EN81:72
Control Type	Full Collective
Floors served	As Existing
Car Size	As Existing
Shaft Dimensions	As Existing

4.3 *Life expectancy*

4.3.1 All lift installations must be designed for continuous duty operation and with a minimum life expectancy of 20 Years MINIMUM, when suitably maintained.
4.3.2 Spare parts (or suitable alternatives) are to be available for a minimum period of 20 years. The Contractor shall provide evidence of this as part their tender return submission.

4.4 *Lift Performance*

4.4.1 The contractor must provide the flight times for the drive system as part of the tender return. Flight time is defined as the time measured from the instant the car doors are closed at the departure floor until the doors are 800 mm open at the next adjacent floor.

4.5 *Stainless Steel*

4.5.1 All stainless steel specified throughout the specification will be grade **304**. The contractor must provide evidence that the correct grade of stainless steel has been installed throughout the installation including but not limited to the lift car, all entrances, architraves, lift call and indicator faceplates and control panel(s) when installed in a staff/public area.
4.5.2 All stainless steel will have a brightened polished finish. The contractor must ensure that all stainless steel

throughout the installation has the same polished finishes.

4.5.3 Any drawing provided must clearly state the proposed grade of stainless steel as well as the pattern and the finish.

4.5.4 The contractor must provide a sample for approval prior to manufacture.

4.6 *Energy Efficiency*

4.6.1 Lifts should be installed to meet energy-saving criteria, in particular BREEAM (Building Research Establishment's Environmental Assessment Method). The units will achieve at least two out of the three credits available. This will be achieved by utilising variable-voltage variable-frequency regenerative drives, together with other measures necessary to receive accreditation.

Section 5. Drive and Control System

5.1 *Simplex Operation*

5.1.1 The units will operate in a full collective operation.

5.2 *Control Manufacturer*

5.2.1 The controller must be supported from within the UK with all spares and technical support available from within the UK.

5.3 *Control cabinets*

5.3.1 The control panel may be installed as per the following options:

a) Utilise the existing motor room

b) or installing the controller and drive within the lift shaft and utilising a maintenance access panel on the landing.

5.3.2 The door will be locked utilising a standard Cam Lock with 3 keys. The controller must have a fire certificate as part of the entrance design or fire-resistant material fitted to the rear, achieving the same rating as specified or the doors. This must be shown on the GA Drawings. The control panel must be designed for the category 1 environment.

5.3.3 Controller Lighting – The controller or maintenance access panel must incorporate both normal and emergency lighting to meet current standards the lighting must achieve 200 lux. The controller lighting must automatically activate when the controller door is opened.

5.3.4 Heat generated by the panel components shall be fully catered for by adequate ventilation, including fan assistance. Replaceable filters shall be fitted to prevent dust, dirt and insect ingress. The cabinet must not affect the entrance fire rating.

5.3.5 Any components which may generate significant quantities of heat shall be placed outside the controller cabinet in the lift shaft and be suitably enclosed and ventilated, with forced ventilation where necessary. These components shall not have any effect on the operation of the panel.

5.4 *Controller Panel Test Buttons*

5.4.1 A full set of test buttons shall be installed externally on the controller cabinet door when installed in a motor room and internally when installed in a staff/public area, this will include the changeover switch. All switches will be clearly identified by durable vinyl labels printed with typed English wording.

5.5 *Service/Interrogation Tools*

5.5.1 Any remote interrogation devices required for fault-finding, setting up and general maintenance must be included within the offer. This includes all the components including the controller, drives and door operators.

5.5.2 The units will be permanently fixed in a suitable location to allow the maintenance engineer or other authorised person(s) to safely work on the unit.

5.5.3 All tools provided must have unrestricted access and no time or number of usages limitations. Password access will be acceptable subject to the relevant codes being included in the operating and maintenance manuals.

5.5.4 All equipment will become the property of the client on completion of the project.

5.5.5 Any software provided by the contractor must be provided with the relevant hardware to run the software.

5.5.6 The offer must include any interface modules between the tool and components.

5.5.7 All the equipment will be demonstrated at the handover of the lift(s) and the units will not be formaly accepted until all the equipment has been made available.

5.5.8 Any offer not complying with the Service/Interrogation Tools section, may be deemed closed protocol for the purposes of this contract and the tender rejected on this basis.

5.6 *Variable Frequency Drive*

5.6.1 All traction controllers will incorporate a variable frequency drive for enhanced floor levelling and ride installed to the relevant standards. The variable frequency control shall be used to vary the speed by varying the frequency of the three-phase motor voltage and shall incorporate RFI filtering.

5.6.2 The drive shall be rated to a minimum of 120% of the full load amperage that will be placed upon it.

5.6.3 A closed loop control shall be used, with the encoder incorporated into the machine.

5.7 *Component Marking*

5.7.1 Component Identification: All internal components shall be identified by permanent labels, which shall bear the same designation as the schematic wiring diagrams. A key of abbreviations used shall be permanently affixed to the inside of the enclosure.

5.7.2 Main Switches and Controls: All main switches and controls within the lift control cabinet, in particular for emergency hand winding operation, will be clearly identified by durable vinyl labels printed with typed English wording. Main Switches and Controls

5.8 *Automatic Return to Floor Facility*

5.8.1 In the event of failure of one of the systems, the controller will provide an Automatic Return to Floor Facility. The facility will safely drive the lift to the next available floor level at a controlled speed and then open the doors to release passengers. The unit will remain at the level with the landing and car indicators displaying the out of order display until the unit inspected and rest by an engineer.

5.9 *Door Nudging Facility*

5.9.1 The lift car door operator shall have a nudging feature which shall operate following three attempts to close the doors, whereas each operation has failed due to an obstruction being detected either by the infra-red safety edge or the door pressure switches.

5.9.2 When in the nudging mode the door control board shall emit a high frequency alarm signal clearly audible at the lift car entrance and the doors shall begin to close in slow speed until the door is fully closed and the door closed contact and car gate contact are made or the doors reaches a point where the door operator detects an high pressure indicating a physical obstruction preventing the doors from closing at which point the doors shall re-open and park in the open position causing the lift to go out of service.

5.10 *Door Dwell Settings*

5.10.1 The door dwell timer should be set to five seconds (5 s) for general passenger lifts and seven seconds (7 s) for all other lifts or where general passenger lifts are used for other traffic types.

5.10.2 The dwell time should shorten to 0.5 s whenever the door-close or a push-button is operated.

5.10.3 In addition, the control panel shall limit the number of times the landing doors will re-open due to the landing call station being pressed before the lift departs.

5.11 *Selector (Shaft encoder)*

5.11.1 An absolute shaft information system shall be used for positioning of lift cars.

5.11.2 The magnetic measuring system must be resistant and not affected by dust, dirt, moisture, smoke or high temperatures.

Measuring principle	absolute
Repeat accuracy	+/- 1 mm

5.11.3 The encoder system shall be fitted in accordance with the manufacturer's instructions. Where fitted within the lift well the encoder tape shall be mounted on galvanised brackets, complete with tensioning device and pinned at top and bottom of the well after final positioning and adjustment. The encoder unit and any device mounted on the lift car used to identify door zones shall be securely mounted on galvanised Unistrut supports, fixed to car suspension channels.

5.12 *Limit Switches*

5.12.1 Limit switches shall be fitted; the limit switches shall be supplied pre-wired with a termination box for connection to shaft wiring. A ramp shall be fitted to the lift car sling, the existing ramp may be retained if found to be suitable to operate the new limit switches.

5.12.2 The test limit must be positioned allow for the inspection of the equipment installed at the top of the shaft.

5.12.3 The limit switches shall be arranged so that the roller operates in the direction of travel, roller at top in the up direction and at the bottom for the down direction.

5.13 *Emergency Release of Trapped Passengers*

5.13.1 In the event of a power failure or failure of the Automatic Return to Floor Facility the lift will be moved to the nearest floor by using the Emergency Release buttons incorporated in the controller door. This will include an activation switch, movement button(s), visual/audio floor level indicator and a movement indicator. It must be possible to identify the position of the lift in relation to the floor level with a reasonable degree of accuracy (typically ±50 mm) from the rescue position (in a machine room or landing). Should the machine be visible to the operator then no lift movement indicator will be required.

5.13.2 A lift position indicator shall be provided in an easily-viewed position either within the motor room or in the control panel. The power for this indicator should be derived from a maintained UPS.

5.13.3 A UPS device to release the brake will be included and as part of the operation, power to the brake will be terminated once the unit has arrived at floor level. The unit must be within 50mm of floor level before the floor level indication is activated and the power to the UPS terminated.

5.13.4 Full testing of the emergency release system will be undertaken as part of the witness test, this shall include the movement of the lift under various load conditions. It is the Contractor's responsibility to ensure that any UPS device is fully charged to allow testing to be undertaken.

5.13.5 A detailed set of instructions shall be fixed to the front of the control panel.

5.14 *Uninterrupted Power Supply (UPS) Monitoring*

5.14.1 When a UPS it utilised as part of the emergency release procedure, whether to drive the machine or just to release the brake, the control panel shall have a system to monitor the condition of the UPS device at all times.

5.14.2 Should the UPS device fail, the lift shall return to the main exit floor and park with the doors open and all car and landing push buttons isolated. The fault logger within the control panel and the car & landing indicators shall display the message "UPS DEVICE FAILURE".

5.15 *Handwinding & Instruction Notice*

5.15.1 A set of handwinding instructions specific for the new system shall be clearly displayed in the controller cabinet.

5.15.2 The notice will be printed on a durable vinyl sheet with English wording

5.16 *Emergency unlocking*

5.16.1 If the unlocking triangle is on the frame and the key hole downwards in the horizontal plane the maximum height of the unlocking triangle hole from the landing floor shall be 2,70 m. The length of the emergency unlocking key shall be at least equal to the height of the door minus 2,0 m.

5.16.2 Where the emergency unlocking key is of a length greater than 0,20 m it is regarded as a special tool and shall be available at the installation site.

5.16.3 After an emergency unlocking, the locking device shall not be able to remain in the unlocked position with the landing door closed.

5.16.4 If there is no access door to the pit, other than the landing door, the door lock shall be reachable safely within a height of 1,80 m and a maximum horizontal distance of 0,80 m from the pit ladder, or a permanently installed device shall allow a person in the pit to unlock the door.

5.17 *Fault Logging*

5.17.1 The controller should have an inbuilt fault logging facility which will clearly display the fault in English wording; the use of fault codes will not be accepted. The data access and display shall be incorporated within the controller or remote depending on the controller location.

5.17.2 It shall not be possible to alter or affect the control software whilst retrieving fault-logging DATA (Read Only Access).

5.17.3 Additional features:

a) 100-event fault logging facility indicating event, elevator position, time of event, current status, current time and date.
b) User help menu
c) Car and landing call input
d) Elevator position, direction and status
e) Time and date adjustment
f) Trip counter to measure the number of drive motor starts. This must be locked; no site reset will be acceptable.
g) Battery back up memory

5.18 *Fire Recall - This shall be initiated on the activation of the fire alarm system.*

5.18.1 The controller will have volt free contacts installed specifically designed for connection to the fire alarm system by others.

5.18.2 The system will include the main fire recall to be to the nominated fire exit floor, this will be switched via the fire alarm system.

5.18.3 On operation of the fire alarm system, all lift car and landing controls with the exception of the door open and emergency alarm shall be rendered inoperative. All existing calls will be cancelled and door reversal devices, which may be affected by heat or smoke shall be rendered inoperative.

5.18.4 The lift shall return to the fire exit level, and shall park at this level with the car and landing doors open. If the lift is travelling away from the fire exit level, it shall make a normal stop at the nearest possible floor without opening the doors and return to the fire service access level.

5.18.5 An audible signal shall sound when the lift is under inspection control and the car top intercom shall be activated. The audible signal shall be cancelled when the lift is removed from inspection control.

5.19 *Economy Mode*

5.19.1 The lift controller must have the capability to shut down the following lift components after a pre- determined time of inactivity.

a) Car Lights
b) Fans
c) Indicators
d) Drive

5.19.2 The above components should be reactivated by the landing pushes or on a predetermined time.

5.20 *Shaft Wiring*

5.20.1 Wiring within the lift well, other than trailing flexes, shall be enclosed within high impact PVC trunking and or high impact PVC conduits, If the same ducting or cable contains conductors whose circuits have different voltages, all of the conductors or cables shall have the insulation specified for the highest voltage.

5.20.2 Any shaft wires or cable runs not housed in trunking, other than the main trailing flexes, will be fixed with P-clips screwed to the shaft wall at intervals no greater than 400mm. The wiring must be neatly run and fixed to avoid wires being caught by the lift as it passes.

5.20.3 Any wiring on the car top will be run in trunking or flexible conduit to remove the risk of it becoming damaged and to avoid tripping hazards and from personnel inadvertently standing on it. If necessary, the Contractor will provide secure and robust tread-boards to protect car top equipment and cabling.

5.20.4 Where the wiring runs between the trunking and control panel any cut outs in the trunking and control panel, the cut outs shall be protected using plastic edge protection, this should be glued into place prior to the wiring being run through it to prevent it becoming dislodged.

5.20.5 All trunking will be installed to comply with current standards.

5.20.6 All cables shall be BASEC approved. All cables shall have copper conductors and be multi-stranded. Cables running from the controller, except for the travelling cables, shall be PVC insulated 600/1000 volt grade complying with BS 6004 installed in conduit and / or trunking. The cross-sectional area of the conductors of the electric safety circuits shall be not less than 0.75mm².

5.20.7 All cables shall be terminated in purpose made clamps or pinch type terminals. Connector strips with unlocked gripping screws or without centre stops shall not be used.

5.20.8 To ensure continuity of mechanical protection, the protective sheeting of conductors shall fully enterthe casings of switches and appliances or shall terminate in suitably constructed glands. Likewise, cables passing through metalwork or apertures where there is a risk of mechanical damage shall be suitably protectedby the use of brass bushes.

5.20.9 Trailing cables shall comply with BS 6977 and shall be of the flat form type construction, correctly terminated and supported on purpose made brackets and clamps so that there is no strain on the cores or terminals to which they are connected. The terminals at each end of these cables shall be similarly arranged and individually marked for identification. With those cables operating at different voltages these should be effectively segregated from each other.

5.20.10 Travelling cables shall include at least 10% spare ways per cable and before fitting shall be hung down the lift shaft for at least 24 hours with their lower ends suitably weighted and free to rotate to eliminate any tendency to twist in service.

5.20.11 All travelling cables shall be anchored at the top and effectively anchored at the half way point in the lift

shaft. In addition to the anchorage at the halfway point, additional clamps shall be fitted so that there shall not be more than 3m between clamping points above the halfway point. Means shall be provided to prevent travelling cables fouling any fitting or equipment in lift shaft.

5.20.12 All components shall be earthed in accordance with current electrical regulations; this includes the landing push stations and indicators.

5.20.13 To eliminate the risk of electromagnetic interference (EMI), and achieve compliance with the EC directive on electromagnetic compatibility (EMC), the minimum cable separation distances specified within current standards shall be ensured.

5.21 *Earth Continuity*

5.21.1 The Contractor shall ensure the adequate earthing of all metal work such as the lift car, landing door frames, machine, controller and guides. When tested the earth continuity should not exceed 0.5 ohms.

5.21.2 the most remote landing lock contact shall cause without undue delay, the operation of the lock circuit protection device.

5.21.3 The earth continuity and fusing of the lock will be tested as part of the witness testing of the installation.

5.22 *AC Gearless/ Geared Machine*

5.22.1 An AC Gearless permanent magnet motor or a geared machine including sheave, encoder and brake will be fitted.

5.22.2 The machine will have type-approved brakes with certificates against uncontrolled and unintended car movement.

a) The braking device acting on the shaft of the traction sheave as part of the protection device against overspeed of the car moving in the upwards direction.
b) The braking device acting on the shaft of the traction sheave as part of the protection device against unintended car movement.

5.22.3 The new machine shall be designed to comply with all current standards and be rated to a minimum of 120% of the required full static load. (i.e. static load required 2000kg, the new machine must be rated for a minimum static load of 2400kg). The Contractor will be required to provide detailed calculations for the static loading and the details of the proposed machine to the Contract Administrator for approval. Where the Contractor has estimated a car, sling or counterweight weight, they shall include within their offer where these items are being retained for the cost to weigh them on site prior to ordering the drive unit.

5.22.4 The new gear unit shall be rated as follows:

a) 180 Starts per hour
b) All rotating parts should be painted yellow
c) The unit will have been in service for at least 2 years with a proven track record.

5.23 *Stopping and levelling accuracy*

5.23.1 The lift drives should provide a stopping accuracy of ±3 mm under all conditions of load, direction of travel and position in the well.

5.24 *Main Suspension Ropes*

5.24.1 New suspension ropes complete with new eyebolts and fixings will be installed to comply with all current standards.

5.24.2 The contractor shall allow within their offer for a return visit to site during the warranty period to shorten the main hoisting ropes where required.

5.25 *Guarding*

5.25.1 All rotating components within the lift shaft will be fully guarded. All guards will be designed to allow visual inspection via an inspection panel constructed with mesh panels and in an angled frame, compliant to current standards. The inspection panel will allow visual inspection without the need to remove the unit. It should be possible to remove and replace the guards without the need for tools.

5.25.2 The guarding shall be painted orange.

Section 6. Lift Shaft Items

6.1 *Counterweight*

6.1.1 A steel frame type counterweight shall be installed. The counterweight shall travel without creating noise and arranged so that the weights are fixed and unable to move.
6.1.2 The counterweight must be balanced at 50%.
6.1.3 The counterweight shall be painted with two coat of safety yellow paint.

6.2 *Counterweight Guide Shoes*

6.2.1 The counterweight must be fitted with heavy pattern guide shoes fitted with renewable **Polyethylene (PE/PEP) linings**. The type of liner does not require lubrication and therefore the contractor will fix a permanent engraved Acrylic notice in the area of the shoe stating (Polyethylene Shoe Liners Fitted Do NOT lubricate the guides).
6.2.2 As an alternative roller guide shoes can be fitted. The roller guide shoes shall have a low rolling resistance, high abrasion and wear resistance, low oscillation, be silent running and be maintenance free. The rollers shall be of a suitable design for the required loading.

6.3 *Guides*

6.3.1 New cold drawn, machined T-section guide rails shall be installed, the guides shall have a minimum blade width of 16mm.
6.3.2 The length of the guides shall be designed to ensure that with the car or counterweight sat on fully compressed buffers, they would accommodate a further guided travel of at least 0.1+ 0.035V2.
6.3.3 The guides will be correctly plumbed and boned to ensure the guides are erected in a true plumb condition and alignment with a constant DBG (Distance Between Guides) measurement along the full travel of the lift.
6.3.4 All guide joints shall be dressed and polished to ensure a smooth transit of the lift car in both directions when passing over the joints. Any marks caused by the testing of the safety gear or other testing shall be dressed and polished before the lift is placed into service.

6.4 *Overspeed Governor*

6.4.1 A unit shall be installed to be compliant with all current standards and shall be type tested. When fitted in a location where access will be difficult when the safety gear has been engaged then a test and reset switch will be fitted in the controller and the unit shall automatically reset
6.4.2 The overspeed governor shall, by means of an electrical safety device initiate the stopping of the lift machine at latest at the moment when the car speed reaches the tripping speed of the governor. If after release of the safety gear, the overspeed governor does not automatically reset itself, an electric safety device shall prevent starting of the lift while the overspeed governor is in the tripped condition.
6.4.3 The direction of rotation, corresponding to the operation of the safety gear, shall be marked on the overspeed governor.
6.4.4 The overspeed governor shall be driven by a very flexible wire rope of not less than 6.5mm in diameter.
6.4.5 The governor shall incorporate means for checking of the safety gear operation at contract speed.
6.4.6 Test certificates shall be supplied for the governor by the manufacturer.
6.4.7 The governor tension weight shall be fitted with a suitable rope guard. The breakage or slackening of the governor rope shall cause the motor to stop by means of an electric safety cut out device.
6.4.8 On the overspeed governor a data plate shall be fixed indicating:
a) the name of the manufacturer of the overspeed governor;
b) the type of approval sign and its references;
c) the tripping speed for which it has been adjusted.
d) The CE conformity marking.

6.5 *Shaft and Pit Clean Down*

6.5.1 The Contractor will include for a complete clean down of the lift shaft, pit, car top and motor room. All surfaces must be cleaned and where required they shall be degreased using a suitable water-based product.

7.1.1 New buffers shall be fitted; these shall be designed in accordance with current regulations for the rated load and speed.

Section 7 Lift Pit items

7.1 Buffers

7.1.1 New buffers shall be fitted; these shall be designed in accordance with current regulations for the rated load

and speed.

7.2 *Pit Ladder*

7.2.1 A permanent fixed pit ladder shall be fitted to allow safe access and egress to and from the lift pit area.

7.2.2 The ladder shall be able to withstand the weight of one person counting for 1500 N; made of aluminium, extends to a minimum height of 1,10 m measured vertically above the landing sill;

7.2.3 The cross-section of the ladder uprights shall not exceed width of 35 mm, and depth 100 mm.

7.2.4 Ladder rungs will have a minimum width of 280mm and be equally spaced between 250 – 300mm.

7.2.5 The location of the ladder in the pit shall be at least 200mm minimum between back of any rung and wall of the pit in the case of vertical ladder, the distance between the edge of the landing entrance and the middle of rungs of the ladder in the working position shall be 600 mm maximum for easy reach.

7.2.6 The ladder must be designed allow safe access and egress to the lift pit in accordance with current legislation

7.3 *Pit Stop Switch*

7.3.1 The pit stop shall be located within a vertical distance of minimum 0,40 m above the lowest landing floor and a maximum of 2,0 m from the pit floor and within a horizontal distance of maximum 0,75 m from the door frame inner edge. The stop switch may be combined with the inspection station.

7.4 *Pit Maintenance Control*

7.4.1 A permanently installed inspection control station shall be installed within the lift pit, the unit shall be operable within 300mm of a refuge space and include a RCD protected socket outlet.

7.4.2 The return of the lift to normal operation shall only be made by operation of an electrical reset device mounted in the bottom terminal floor push station.

7.5 *Access Shaft Lighting Switch*

7.5.1 Means to switch the shaft lighting prior to entering the lift pit shall be positioned within a maximum horizontal distance of 750mm from the pit access doorframe inner edge and at a minimum height of 1000mm above the access floor level.

7.6 *Emergency release*

7.6.1 An alarm initiation device to the alarm system shall be installed at places where the risk of trapping exists operable from the refuge space(s).

7.7 *Refuge spaces and clearances in the pit*

7.7.1 When the car is at its lowest position at least two clear areas where a refuge space can be accommodated shall be provided on the pit floor. In the case of more than one refuge space they shall be of the same type andnot interfering with each other. A sign in the pit readable from the entrance(s) shall clearly indicate the allowed number of persons and the type of posture considered for the refuge spaces(s) accommodation.

7.8 *Counterweight Guard*

7.8.1 A new rigid imperforate counterweight screen shall be fitted, this shall be mounted not more than 0.3 metres from the pit floor and extend up to a position at least 2.5 metres high, the screen shall be at least equal to the width of the counterweight plus 0.1 metres on either side.

7.8.2 The new counterweight screen shall be securely fixed to the guides or wall to ensure its rigidity and painted orange to identify it as a guard.

7.8.3 Where there is a space behind the counterweight which exceeds 0.3 metres in depth, an additional counterweight screen shall be fitted of the same design and dimension as the front screen.

Section 8. Lift Car Items

8.1 *Lift Car Guide Shoes*

8.1.1 The lift car shall be fitted with heavy pattern spring loaded guide shoes fitted with renewable **Polyethylene (PE/PEP) linings**. The type of liner does not require lubrication and therefore the contractor will fix a permanent engraved Acrylic notice in the area of the car shoe stating (Polyethylene Shoe Liners Fitted Do NOT lubricate the guides).

8.1.2 The alternative would be to install Roller guide. The roller guide shoes shall have a low rolling resistance, high abrasion and wear resistance, low oscillation, be silent running and be maintenance free. The minimum dimensions for the rollers on the lift car shall be 150mm diameter x 25mm thickness.

8.2 *Lift Car Sling(if being replaced)*

8.2.1 The car frame shall be provided of standard channel section and the complete frame shall be capable of sustaining a fully loaded car without deformation with an evenly distributed load. The frame shall be of bolted construction. The sling design shall incorporate tie-rods to assist in obtaining a statically balanced lift car. The sling shall be treated with a rust inhibiting product, primed and painted with two coats of paint

8.2.2 The isolation shall be of oil-resistant resilient rubber compound pads of suitable density for the contract load and car weight.

8.2.3 Buffer plates shall be provided to the underside of the car frame, centre lines of which shall exactly meet the centre position of the new buffers.

8.3 *Safety Gear*

8.3.1 A Bi-directional safety gear shall be fitted (sheave brake acceptable). The safety gear shall be type tested and sealed to suit the ratedspeed and load of the lift.

8.3.2 As a complete system the safety gear shall interface with the sling and overspeed governor. The contractor shall allow for all adaptation plates necessary to fit the new safety gear to the lift car sling.

8.3.3 A data plate shall be fixed to the safety gear indicating:

a) the name of the manufacturer of the safety gear;
b) the type examination sign and its references.
c) The CE conformity marking.

8.3.4 The safety gear should be full tested and adjusted by the Contractor prior to the witness testing of the lift to ensure the correct stopping/sliding distances are achieved.

8.3.5 The witness test will include a test at rated speed with rated load on instantaneous safety gears and at 125% of rated load at rated speed or lower for progressive safety gears. Where the test is undertaken at a speed lower than the rated speed, the Contractor shall provide to the person undertaking the witness testing the manufacturer's information on the safety gear which shall include the curves to illustrate the behaviour of the type tested progressive safety gear when dynamically tested with the suspension attached.

8.3.6 After the test, the lift will be inspected to ascertain that no deterioration has occurred which could adversely affect the normal operation of the lift.

8.3.7 A copy of the safety gear type test certificate and fitting instructions shall be provided within the O&M manuals.

8.4 *Load Weighing*

8.4.1 A load-weighing device will be fitted to the car; this device will cause the lift car to bypass landing calls when there is a 80% load within the lift car and not allow the lift to move when the safe working load is exceeded by 10% with a minimum of 75kgs until the load has been reduced.

8.4.2 On operation of the 80% floor bypass, the landing indicator shall display "LIFT CAR FULL" for the relevant lift, until the lift carload has been reduced.

8.4.3 On the operation of the load weighing device, the digital indicator within the lift car will clearly show lift overloaded, in addition there will be an audible buzzer or an announcement by the speech unit and the automatic doors shall return to the fully open position.

8.5 *Static Balancing of the lift Car*

8.5.1 The lift car shall be statically balanced following fitting of all equipment; Plumbing adjustments shall be made by adjustment of car sling tie-rods.

8.6 *Lift Car Enclosure(if being replaced)*

8.6.1 The car will be designed to be utilised in a heavy-duty application where the general public load and unload heavy trolleys. The rear wall and car fronts must be of a substantial design to ensure that inadvertent trolley impacts will not damage or distort the rear walls or car fronts.

8.6.2 Car interior drawings shall be provided, indicating the car interior in plan and in elevation, including details of all operating fixtures. Electronic copies of each drawing shall be submitted for comment beforecommencement of manufacture. The car shall be constructed from non-combustible material.

8.6.3 Sound isolation and mounting to interface cabin to the sling shall be provided, this shall provide a minimum 4 points of contact. Wall and ceiling panels manufactured from stainless steel, multi point welded.

8.6.4 Natural ventilation will be provided behind stainless steel grills, these grills shall be removable for maintenance purposes by authorised personnel only. The effective area of ventilation apertures in the upper part of the car and the lower part of the car shall be not less than 1% of the available car area.

8.6.5 The car roof shall be of 1.5 mm minimum thickness stainless steel sheet. It shall be able to support the weight

of two persons, i.e. to withstand a vertical force of 2000N at any position without causing deformation. All equipment and wiring fitted to the car roof will be provided with mechanical impact protection in the form of galvanised trunking and conduit or walk board.

8.6.6 Natural ventilation will be provided behind stainless steel grills, these grills shall be removable for maintenance purposes by authorised personnel only.

a)	Car front wall	TBC	
a)	Car side wall	TBC	
b)	Car rear wall	TBC	
c)	Floor Finish	TBC	
d)	Mirror	Tinted	
e)	Ceiling	TBC	
f)	Hand rails	TBC	
g)	Landing Doors	Pattern Stainless Steel	[Rimex 12LG; or similar approved]
h)	Car Doors	TBC	

A provisional sum for the car finishes may be provided so that the final car finishes can be agreed during the procurement process.

8.7 *Lift Car and Emergency Lighting*

8.7.1 The car shall be provided with electrical lighting that is permanently installed ensuring a light intensity of at least 200 lux on the control devices and when measured at floor level utilising a LED lighting system. There shall be at least two lamps connected in parallel.

8.7.2 There shall be emergency lights with an automatically rechargeable emergency supply, which shall come on automatically upon failure of the normal lighting supply and is capable of ensuring a lighting intensity of at least 20 lux for 3 hours:

8.8 *Handrail In Lift Car*

8.8.1 The lift will have a handrail manufactured by INTRAD type, RHR-45 fitted to one side of the car at a height of 900mm

8.8.2 The rail will be positioned on the same wall as the Car Operating Panel (COP); it will be supplied in two sections one for either side of the COP. The handrail will angle into the wall either side of the COP.

8.8.3 Finish: Colour from manufacturer's available colour range, to be confirmed by client.

8.9 *Buffer Rails*

8.9.1 Bump rails shall be fitted to the rear wall and both side walls of the lift car. The rear wall shall be fitted with 3 bump rails, and both side walls with 2 bump rails.

8.9.2 The bump rails must be Intrad RA2 (Option 04) heavy to severe duty, fitted in accordance with the manufacturer's instructions.

8.9.3 Finish: Colour from manufacturer's available colour range, to be confirmed by client.

8.10 *Lift Car Operating Panel (COP)*

8.10.1 The lift car shall have one car operating panel(s) mounted 400mm in from the nearest return and designed to ensure that all the pushes are between 900mm and 1100mm. The unit should fully comply with the requirements of EN81-70.

8.10.2 The COP faceplate will be flush with car walls, and have the following features:

a) All Pushes will be vandal resistant;
b) All pushes will have a minimum presell size of 60mm;
c) 30mm tactile legend and braille;
d) Push designation in Alpha-numeric;
e) Illuminating call acceptance LED colour blue all floors, green exit floor and Yellow alarm;
f) Audible call acceptance;
g) Exit floor shall be green and raised;
h) Auto-Dialler EN81-70 Pictogram;
i) The final push designation and exit floor shall be agreed with the Contractor Administrator.

8.10.3 Engraving on the COP:

a) Emergency operating instructions shall be clearly engraved above the car pushes; written in English;

b) "Company Logo" – 10 mm high figures minimum infilled in black
c) "Lift Identification number" - 10 mm high figures minimum infilled in black
d) "CE Number" - 10 mm high figures minimum infilled in black
e) "Maximum load" Kilograms and Persons - 12 mm high figures minimum infilled in black
f) All Key switches "Switch Operation" "On" "Off" - 4 mm high figures minimum infilled in black
g) "Emergency Call" 10mm High Figures infilled "Red"
h) "Auto dialler operational text" i.e. Press alarm button for 3 seconds if unanswered press again - 8mm figures infilled in black.

8.10.4 A category 2 vandal resistant digital Indicators with a character height of 50mm will be installed between 1600mm and 1800mm from the car floor. Display will be Alpha numeric with the following display capability in English.

8.10.5 The indicator must display the following.

a) Lift Position
b) Lift Overloaded
c) Evacuation Control
d) Fire Service
e) Out of Order
f) Under Inspection
g) UPS Device Failure (where applicable)
h) Direction of travel

8.10.6 Alarm. -This should be yellow with a minimum presell size of 50mm and clearly distinguishable from all other pushes, when pressed it should activate an audible alarm fitted on the ground floor and the Warden Call. It should be positioned to ensure that it would be difficult to inadvertently press during normal lift usage. In the event of power failure, the push halo shall be illuminated by the light/alarm emergency power supply. An additional low level alarm button designed to activate the warden call system shall also be installed.

8.10.7 A car preference key switch of a radial key barrel design and a low profile shall be fitted on all lifts with auto doors. The key switch shall be marked "Car Preference" and On and Off The car preference key switch shall be of a captive key design, which will not allow the key to be removed when the key is in the on position.

8.10.8 A car light emergency light test key switch shall be provided; this shall be of a two-position design allowing the lights to be isolated when required causing the emergency light to operate. The key switch shall be marked "Emergency Light Test" and On and Test. The key switch shall be installed on within the COP and be of a radial key barrel design with a low profile. The key switch shall be of a captive key design, which will not allow the key to be removed when the key is in the Test position. The contractor will provide 5 new keys per unit.

8.10.9 Faceplate finish: The finish will be stainless steel.

8.11 *Speech Synthesiser*

8.11.1 The lift shall have a voice synthesiser installed with volume adjustment control and a hush feature. This shall announce the following as standard in English.

a) Floor identification
b) Direction of travel
c) Doors opening
d) Doors closing
e) Under Inspection control
f) Lift out of Service

8.12 *Autodialler*

8.12.1 A third party autodialler system will be installed to provide trapped passengers and engineers with easy and clear hands-free connection to emergency help. The AutoDial needs to meets the EN-81 28 lift standards. This device shall allow a two-way voice communication allowing permanent contact with a rescue service. After initiation of the communication system no further action of the trapped person shall be necessary.

8.12.2 The autodialler must be compatible with the following telephone line types, the contractor must confirm compliance in the tender return documentation.

	Line Type	Details
1	PSTN	PSTN stands for Public Switched Telephone Network, and is a traditional land line
2	ISDN2	Integrated Services Digital Network and is also known as Basic Rate Interface, or BRI and these are known as Digital Lines.
3	ISDN30	Primary Rate Interface, or PRI. Incorporates the same features as ISDN2 the difference being the number of channels involved
4	SIP (VoIP)	Session Initiation Protocol and is the line type for connecting VoIP/Internet Telephony to a phone system.

8.12.3 The autodialler shall be able to be re-programmed by dialling into the unit from either a land line or mobile phone; closed protocol systems will not be accepted.

8.12.4 In the event of an emergency, the alarm button will activate the AutoDial unit automatically calling the first of up to 4 pre-programmed emergency telephone numbers. This will establish two-way communication between the trapped persons and the dedicated rescue centre. If the call is not answered within 1 minute, the AutoDial will automatically call the second, third and fourth number in sequence and then start again with the first number until a connection is made. Engineers trapped on the car and in the pit will activate the system by activating dedicated alarm buttons fitted within these areas.

8.12.5 Emergency operating instructions shall be clearly engraved above the car pushes; written in English.

8.12.6 The system will play a recorded speech message giving details of the lift location on connection to the rescue centre. The autodialler shall include multipoint stations installed in the car, car top, pit, and motor room.

8.13 *Car Doors*

8.13.1 The door will be of a heavy-duty design and be suitable for a goods lift application.

8.13.2 The use of Zone locking should be avoided.

8.13.3 This will consist of an automatic variable frequency belt driven operator incorporating any remote interrogation devices required for fault-finding, setting up and general maintenance. All remote interrogation devices will be issued to the Contract Administrator on completion of the project.

8.13.4 The new door panels shall be of a heavy-duty double skin construction with a mild steel panel and frame with rear bracing ribs and back skin then clad with 1.5 standard pattern stainless steel, this shall include sound reduction materials between the front and rear skin.

8.13.5 The doors will have reinforced top tracks utilising steel core door hanging rollers with a minimum outer diameter of 92mm. The rollers will incorporate sealed deep groove ball bearings with an outer diameter of 40mm and be fitted with a low noise durable polyurethane elastomeric tire. They shall be designed with a static load rating of 4.75kN and a dynamic load rating 9.56kN.

8.13.6 All associated equipment including the door shoes will be designed for a heavy-duty application and shall be of a high-quality design.

8.13.7 The entrance shall be installed as per the manufacturer's instructions including all running clearances and set up for optimum performance. Running clearance between the sill and the bottom of the door panel will not be less than 3mm or exceed 6 mm. All other clearances will be between 3mm min and 6mm max.

8.13.8 The new bottom door tracks shall be manufactured from Stainless Steel.

8.13.9 Finish: Patterned Stainless Steel to match the car.

8.14 *Non-contact Safety Edges*

8.14.1 The unit will operate over a distance between 25mm and at least 1800mm above the car door sill.

8.14.2 The door detection edges shall be of the illuminating LED type which illuminate along the full edge green when it is safe to enter the lift car and flash red when the doors are closing, the detectors shall be mounted on the lead edge of the doors so that they are visible from the landing and lift car. The edges must be fitted utilising the brackets designed by the manufacturer. If this is not feasible then an alternative method of fixing may be forwarded for consideration. The screened cables from the edges up to the control box will be securely fixed with the clips provided within the installation kit.

8.14.3 Under no circumstances will it be acceptable for the edge to be supplied from the car light circuit.

8.14.4 The control box will be fitted on top of the lift car in close proximity to the door operator. Care should be taken when installing the control box and cables to ensure maintenance personnel etc. are unlikely to inadvertently stand on the equipment. If this is not possible the contractor shall provide mechanical protection.

8.15 *3D Sensors*

8.15.1 The contractor will install a flush mounted IMS 100 Pro manufactured by Cedes to monitor the entrance area.

Section 9.
Landings

9.1 *Shaft Fascias*

9.1.1 Fascias manufactured from sheet steel with a minimum thickness of 1.6mm shall be provided to the entrance elevation of the lift shaft. Fascias shall extend from cill to header between all floors to give a flush shaft over the complete lift travel including overruns. Fascias shall extend a minimum of 100mm either side of the clear lift door opening.

9.1.2 The fascias shall be of rigid construction adequately braced and fixed to the lift landing cills and headers by flat head machine screws. Fascias shall be hot dipped galvanised with on-site cut ends painted with a zinc rich solution or 'Zintec' powder coated yellow.

9.1.3 A conventional toe guard shall be fitted to the lowest entrance which shall extend the full width of the clear opening and comply with all current regulations.

9.2 *Landing Entrances*

9.2.1 Landing entrances, including landing box frames and sill supports, shall be installed.

9.2.2 The new door panels shall be of a heavy-duty double skin construction with a mild steel panel and frame with rear bracing ribs and back skin then clad with 1.5 standard pattern stainless steel, this shall include sound reduction materials between the front and rear skin.

9.2.3 The doors will have reinforced top tracks utilising steel core door hanging rollers with a minimum outer diameter of 92mm. The rollers will incorporate sealed deep groove ball bearings with an outer diameter of 40mm and be fitted with a low noise durable polyurethane elastomeric tire. They shall be designed with a static load rating of 4.75kN and a dynamic load rating 9.56kN.

9.2.4 All associated equipment including the door shoes will be designed for a heavy-duty application and shall be of a high-quality design.

9.2.5 The entrance shall be installed as per the manufacturer's instructions including all running clearances and set up for optimum performance. Running clearance between the sill and the bottom of the door panel will not be less than 3mm or exceed 6 mm. All other clearances will be between 3mm min and 6mm max.

9.2.6 The new bottom door tracks shall be manufactured from Stainless Steel.

9.2.7 Finish: Patterned Stainless Steel to match the car

9.2.8 Fire rating to EN81-58 E120 2 hours

9.3 *Landing Position Indicators*

9.3.1 Each landing will have a category 2 vandal resistant digital Indicators fitted above or at the side of each landing entrance. The indicators will be fitted at a height between 1800mm and 2300mm,

9.3.2 The new position indicators will be flush mounted, or surface mounted with the old apertures being made good to the same standard as existing.

9.3.3 Scrolling double segment indicators with the capability to display the following:

a) Lift Position
b) Lift Overloaded
c) Fire Service
d) Out of Order
e) Under Inspection
f) UPS Device Failure (where applicable)
g) Direction of travel

9.3.4 A lift arrival gong shall be positioned within the landing indicator station and activate when the doors starts to open. The unit will give different audible sounds depending on direction of travel.

9.4 *Lift Car Toe Guard*

9.4.1 A galvanised lift car toe guard will be fitted together with support brackets to reduce drumming.

9.4.2 The toe guard shall extend the full width of the clear opening and comply with all current regulations.

Section 10. Landings

10.1 *Shaft Fascias*

10.1.1 Fascias manufactured from sheet steel with a minimum thickness of 1.6mm shall be provided to the entrance elevation of the lift shaft. Fascias shall extend from cill to header between all floors to give a flush shaft over the complete lift travel including overruns. Fascias shall extend a minimum of 100mm either side of the clear lift door opening.

10.1.2 The fascias shall be of rigid construction adequately braced and fixed to the lift landing cills and headers by flat head machine screws. Fascias shall be hot dipped galvanised with on site cut ends painted with a zinc rich solution or 'Zintec' powder coated yellow.

10.1.3 A conventional toe guard shall be fitted to the lowest entrance which shall extend the full width of the clear opening and comply with all current regulations.

10.2 *Landing Entrances*

10.2.1 Landing entrances, including landing box frames and sill supports, shall be installed.

10.2.2 The new door panels shall be of a heavy-duty double skin construction with a mild steel panel and frame with rear bracing ribs and back skin then clad with 1.5 standard pattern stainless steel, this shall include sound reduction materials between the front and rear skin.

10.2.3 The doors will have reinforced top tracks utilising steel core door hanging rollers with a minimum outer diameter of 92mm. The rollers will incorporate sealed deep groove ball bearings with an outer diameter of 40mm and be fitted with a low noise durable polyurethane elastomeric tire. They shall be designed with a static load rating of 4.75kN and a dynamic load rating 9.56kN.

10.2.4 All associated equipment including the door shoes will be designed for a heavy-duty application and shall be of a high-quality design.

10.2.5 The entrance shall be installed as per the manufacturer's instructions including all running clearances and set up for optimum performance. Running clearance between the sill and the bottom of the door panel will not be less than 3mm or exceed 6 mm. All other clearances will be between 3mm min and 6mm max.

10.2.6 The new bottom door tracks shall be manufactured from Stainless Steel.

10.2.7 Finish: Patterned Stainless Steel to match the car

10.2.8 Fire rating to EN81-58 E120 2 hours

10.3 *Landing Position Indicators*

10.3.1 Each landing will have a category 2 vandal resistant digital Indicators fitted above or at the side of each landing entrance. The indicators will be fitted at a height between 1800mm and 2300mm,

10.3.2 The new position indicators will be flush mounted.

10.3.3 Scrolling double segment indicators with the capability to display the following:

a) Lift Position
b) Lift Overloaded
c) Fire Service
d) Out of Order
e) Under Inspection
f) UPS Device Failure (where applicable)
g) Direction of travel

10.3.4 A lift arrival gong shall be positioned within the landing indicator station and activate when the doors starts to open. The unit will give different audible sounds depending on direction of travel.

10.4 *Landing Call Station*

10.4.1 The landing call stations shall be designed to ensure that all the pushes are between 900mm and 1100mm from finished floor level.

10.4.2 The new stations will be flush mounted and category 2 vandal resistant.

10.4.3 A pit reset key switch shall be installed on the bottom terminal floor. The key switch will be of a radial key barrel design with a low profile and with a spring return on operation. The contractor will provide 5 new keys per unit.

10.4.4 All pushes should have the following features:

a) All pushes will have a minimum presell size of 60mm;
b) 30mm tactile legend and braille;

c) Dual illuminating call acceptance
d) Audible call acceptance.

10.4.5 Face plate finish: Stainless steel.
10.4.6 A 100mm square Braille tactile notice shall be placed next to the landing station identifying the floor level.
10.4.7 The new landing stations should include a No Entry indicator which will illuminate in the event of the fire return being activated.

10.5 *Lift Emergency Alarm*

10.5.1 An audible/visual (LED/Strobe) lift emergency alarm shall be positioned above the main floor entrance; this alarm is to be clearly distinguishable from any other alarms within the building. The audible alarm shall only sound whilst the alarm button is activated, however the visual alarm will latch and continue to display until reset.
10.5.2 A reset button will be installed below the alarm.
10.5.3 The alarm will be powered from a dedicated 3-hour minimum maintained emergency power supply.
10.5.4 The alarm bell shall be clearly identified by a permanent engraved acrylic label.

Section 11. Lift Car Top Items

11.1 *Car Top Handrail*

11.1.1 If voids in excess of 300mm exist on the car top a car top handrail or guarding shall be fitted.
11.1.2 The handrail shall comply with the requirements of EN81 and be provided with adequate bracing to ensure strength and rigidity. Mid-rails and toe guards will be provided.
11.1.3 The car top layout should be designed to ensure that all equipment is installed on the handrail for ease of access and maintenance.

11.2 *Refuge spaces on car roof and clearances in headroom*

11.2.1 When the car is at its highest position two clear areas where a refuge spaces can be accommodated for two persons shall be provided on the car roof.
11.2.2 A sign on the car roof readable from the landings giving access to the car roof shall clearly indicate the allowed number of persons and the type of posture considered for the refuge space.
11.2.3 Where a counterweight is used a sign shall be placed on or near the counterweight screen stating the maximum allowed clearances between the counterweight and the counterweight buffer when the car is at its upmost landing level in order to maintain the car headroom dimensions.

11.3 *Working areas in the car or on the car roof*

11.3.1 Where maintenance/inspection work on the machinery is to be carried out from inside the car, movement of the car shall be prevented by a mechanical device, which shall be electrically interlocked.
11.3.2 It shall be possible to leave the well via the landing door with at least a clear opening of 500mm x 700mm, or alternative means.
11.3.3 Instructions regarding the escape procedure shall be given in the lift documentation.

11.4 *Car Top Control*

11.4.1 To be provided incorporating a run/common button.
11.4.2 The alarm button on the car top control must activate the autodialler even when the autodialler unit has a separate activation button.
11.4.3 The unit will incorporate a 13 AMP RCD protected socket outlet, car top light and emergency stop button.
11.4.4 It shall be positioned within one metre of the landing entrance and be clearly visible.
11.4.5 Additional stop switches shall be fitted where the top of the lift car can be accessed from alternative landing entrances.

Section 12. Ancillary Items

12.1 *Painting of Rotating Components*

12.1.1 All rotating components shall be painted yellow.

12.2 *Data Plate*

12.2.1 A data plate shall be attached to each car cross head in a conspicuous position to provide the following

information:

a) The maximum static load in kilograms imposed on the car ropes, with the contract load in the car.
b) The contract load in kilograms and the speed in metres per second.
c) The date of refurbishment.
d) The size, lay and length of the main hoisting rope.
e) The size, lay and length of the overspeed governor rope.

12.3 *Statutory Notices*

12.3.1 All statutory notices are to be replaced; all notice shall be manufactured from rigid plastic.

12.4 *Isolating Mat*

12.4.1 A rubber electrical isolation mat should be made available for maintenance personnel working on the controller.
12.4.2 The mat shall be stored in an agreed location and clearly noted in the controller cabinet.

12.5 *Safety Barrier*

12.5.1 A solid barrier for temporary entrance protection must be installed in an agreed position and clearly noted in the controller cabinet.

12.6 *Document Holder*

12.6.1 A permanent steel document holder shall be installed on the car top preferably on the handrail designed to hold the all manuals applicable to the controller, variable frequency drive, door operator etc.
12.6.2 Magnetic 'Lift Out of Order' notices shall be provided, the number of notices supplied shall be equal to the number of landing entrances. These shall be stored in the landing controller/maintenance access panel on the landing.

12.7 *Keys*

12.7.1 The contractor will provide 4 complete sets of keys for each installation with each set on an individual large key ring.
12.7.2 Each set of keys will include but not limited to: Emergency release key, Controller Access key, Car preference key, Emergency light test key and pit reset key.
12.7.3 Each key on each set will be clearly identified in English stating the purpose.
12.7.4 The door release keys shall be labelled with double sided rigid plastic labels stating, 'Emergency Release Key' on one side and 'Authorised Personnel Only

Section 13 Hydraulic systems

13.1 Oil Tank

The oil storage tank shall be replaced and a new electronic valve block incorporating A3 safety shall be installed.

13.2 Hydraulic Pipes and Supports

The hose and connections shall be retained and refitted strictly in accordance with the manufacturer's recommendations.
The hose shall be fixed and supported at regular intervals in accordance with manufacturer's recommendations.
Steel tubing shall be fixed and supported at regular intervals on supports that will allow for expansion of the tube and where necessary suitable arrangements should be made in pipe runs to take up any expansions in a system.
Include for a new hydraulic hose between the power unit and the cylinder.

13.3 Hand Lowering Equipment

The hydraulic power unit should be provided with a hand pump and hand lowering device, together with suitable labels and instructions for both functions.

13.4 Ram Seals

The existing ram seals will be replaced with the manufacturers recommend RAM seals. Once installed they will be tested to full load pressure and then inspected for leaks.

TECHNICAL AND CONSTRUCTIONAL ITEMS

APPROVED LIST OF MANUFACTURERS AND SUPPLIERS

The following approved components must be used by the Contractor. No deviations will be acceptable.

ITEM	MANUFACTURER	TYPE
CONTROL SYSTER	DIGITAL /LESTER /ILE / TVC	MICRO PROCESSER, CLOSED LOOP VVVF
WINDING UNIT	SASSI	GEARED WITH A3/UMB SHEAVE BRAKE
HYDRAULIC PUMP UNIT	BUCHER	I-VALVE + A3, MIN. 60 UP STARTS/HR
DOOR OPERATOR & CAR & LANDING ENTRANCES	GAL / SELCOM	ILE, HYDRA PLUS
DETECTOR EDGE	MEMCO	PANACHROME
PUSHBUTTONS	LIFTSTORE	US91-EN AUDIBLE
EMERGENCY AUTODIALLER, INTERCOM & GSM	SAFELINE / WINDCREST	AUTODIALLER, WITH PICTOGRAMS, & IND. LOOP, EN81-28,

Part 3 – Warranty Period

Section 1 **Warranty and Maintenance**

Section 2 **Site Maintenance Activity Schedule**

1.1 *Warranty and Maintenance*

1.1.1 All components will have a full replacement warranty, which will run from completion of the installation for 12 months.

1.1.2 The warranty period will commence on the date of practical completion when each lift is placed into service.

1.1.3 On sites with 2 or more units, the warranty on all units will end 12 months from completion of the last unit. This will mean that the warranty on the other units will need to be extended for periodsin excess of 12 months, based on the installation programme.

1.2 *Comprehensive Maintenance cover*

1.2.1 The contractor will provide a full comprehensive maintenance cover for the whole installation including all retained components.

1.2.2 The comprehensive cover will commence on the date of practical completion.

1.2.3 The maintenance visits shall be a minimum of 1 visit per calendar month from the handover date to the end of the warranty period. The duration of each visit shall be minimum 1 hours on a per lift basis.

1.2.4 The contractor shall provide all the necessary labour and sundries to carry out preventative maintenance, including all callouts, labour and materials including all major components i.e. control panel, drive unit, door operator, etc.

1.2.5 The contractor shall allow for use ad maintenance of the Client's CAFM System, ElogBooks, which shall be used for the majority of contract administration.

1.2.6 Exclusions:

a) Calls and repairs resulting from misuse or vandalism subject to the correct procedures being followed.
b) Aesthetic finishes.

1.3 *Callouts*

1.3.1 The contractor will provide a call out provision 24 hours a day 365 days a year on a comprehensive basis with all calls outs with the exception of misuse and vandalism calls being included within the Contract. On placing the call the contractor will provide an ETA and a unique call identification number. On completion of the call the contractor will confirm that the work is complete by phoning the Purchasers designated representative prior to leaving site.

1.3.2 Response times:

a) 1 hour from receipt of call where passengers are trapped in the lift.
b) 2 hours from receipt of call for all other call outs.

1.4 *Callout Documentation*

1.4.1 A worksheet will be provided for every visit showing the following information as a minimum:

a) Customer's signature
b) Lift fault - this must be a full description not just a fault code
c) Clearly show any parts that have been fitted
d) Start time and finish time on site
e) Engineer's name and signature
f) Clearly show whether the work was complete or not.

1.4.2 An electronic copy of the signed worksheet (in PDF file format) must forwarded to the Contract Administrator. Hand-written report sheets should be electronically scanned at a sufficient resolution to ensure they are clearly legible.

1.4.3 The Client will require such documentation to be uploaded to heir CAFM system, ELogBooks.

1.5 *Repeat calls corrective action.*

1.5.1 If the number of call outs to the same Lift on a site exceeds three in any four -week period, the Area

Technician/Regional Engineer must attend site to inspect the Lift and provide a report on his findings.

1.5.2 An electronic copy of the Technician's report (in PDF file format) must be forwarded to the Contract Administrator. Hand-written report sheets should be electronically scanned at a sufficient resolution to ensure they are clearly legible.

1.6 *Breakdowns Following Handover of the Lift*

1.6.1 Should the number of breakdowns, other than those caused by misuse and vandalism, exceed 3 call outs within the first calendar month from handover of the lift, the Maintenance and Warranty period will be extended by one calendar month.

1.6.2 Should the number of breakdowns in the following month exceed 3 call outs, then the lift contractor shall at their own cost, have a senior field engineer on site until the faults are eliminated and trouble free lift service is obtained.

1.7 *Obsolescence*

1.7.1 Shall mean a component that is no longer available from any known source; and a modern direct replacement, upgraded component or replacement part only requiring minor modification is not available; and the part cannot be repaired by a specialist supplier. Proof of obsolescence will be required in all cases. There will be no exception to this condition; the proof must include a photo ofthe component, part number and original manufacturer.

1.8 *Misuse/ Vandalism*

1.8.1 When attending site if the engineer believes that the cause of the breakdown is due to vandalism or misuse, then he must obtain the Purchasers site representatives signature prior to commencing repairs. Failure to agree prior to work commencement could result in non-payment of any invoice raised against the said works. If the site representatives of the Purchaser and contractor are unable to agree this should be noted, and both parties sign to this effect. The lift should then be repaired and the issue of payment will be discussed at a later date. No reasonable claim for payment will be withheld.

1.9 *Electronic Service Management System*

1.9.1 It is required that the Contractor will have a suitable service management database which will provide real time information to enhance information provision and transfer. It is expected that Service Engineers will be equipped with PDAs or similar devices to allow electronic transfer of service, repair and call out sheets and the Contractor will be deemed to have included for this and any associated costs within their tendered rates.

1.9.2 The Contractor will be expected to collect and collate data in respect of relevant property, attribute condition and estimated unexpired life and to provide this data in an agreed format.

1.10 *Reporting*

a) During the warranty period the contractor will provide monthly reports by e-mail direct to Elevating Safety Solutions Ltd Limited listing all callouts and service visits attended during the period. Callouts should have a brief explanation of the problem and the actions taken. All reports should be sent to info@elevatingsafetysolutions.co.uk.

1.11 *Liability*

1.11.1 The Contractor shall be liable for any loss claim or liability or proceedings in respect of any damage whatsoever to any property or possessions of tenants in so far as such damage arises out of or inthe course of carrying out of the works unless such damage is wholly due to the act of neglect of the Customer.

1.12 *Log Cards*

1.12.1 Every lift will have a log card provided within the lift motor room. This will clearly state the following:

a) Site Information
b) Contract number
c) Site address

d) Lift ID Number (This should be either the installation number or machine/controller number)

1.12.2 All site visits including maintenance visit, callouts, repairs, SAFed inspections, technician inspections and supervisory visits must be recorded in the site log book. Any maintenance visit not recorded in the site log book will be deemed a missed visit.

1.13 *Personnel*

1.13.1 During all works including planned maintenance visits, there should be at least one trained fitter or higher qualified person on site.

1.14 *Lift Engineers*

1.14.1 A lift fitter should be suitably trained, qualified by knowledge and practical experience, provided with necessary instructions and supported within their organization to enable the required operations to be safely carried out.

1.14.2 NOTE 1 - A suitable minimum level of certified qualification is one of the following:

a) Level 3 NVQ Diploma in Engineering Maintenance (QCF) following an appropriate pathway in Servicing (EMG) and/or Repair (EMH); or

b) Level 3 NVQ Diploma in Installation and Commissioning (QCF) following an appropriate pathway in Traction Lifts (ICC) and/or Hydraulic Lifts (ICD).

c) NOTE 2 - Older certified qualifications that can be accepted as an equivalent level of qualification include:

d) Level 3 NVQ in Engineering Maintenance with appropriate endorsement for Lift Servicing or Lift Repair;

e) Level 3 NVQ in Installation and Commissioning with appropriate endorsement for Traction Lift Installation or Hydraulic Lift Installation;

f) EMTA module/segment certification and apprenticeship certification prior to the existence of the former schemes 2).

1.14.3 Other suitable certified qualifications might exist.

1.14.4 During all works including planned maintenance visits, there should be at least one trained fitter or higher qualified person on site.

1.15 *Lift Engineer Assistant (Mate)*

1.15.1 Any person undertaking or assisting with the works on the site must have a minimum of EOR/202 Basic Lift Safety certification.

1.16 *Lift Technician/ Tester*

1.16.1 Lift technicians or testers should hold qualifications relevant to the products they work on, i.e. lifts, escalators.

1.16.2 NOTE - A suitable minimum level of certified qualification is a Level 4 NVQ Certificate in Performing Testing Operations in the Lift and Escalator Industry including appropriate Unit Credits in one or both of the following units:

a) TLE4/005 “Performing testing operations on existing/ modernized equipment in the lift and escalator industry”;

b) TLE/006 “Performing commissioning tests on new equipment in the lift and escalator industry”.

1.16.3 Older certified qualifications that can be accepted as an equivalent level of qualification include a Certificate of Verified Achievement LET01 “Lift and escalator – Tester obtaining units UC/401, UC/402” and at least one of Units UT/403 and UT/405.

1.16.4 Other suitable certified qualifications might exist.

1.16.5 Lift adjusters/testers should also be trained in safe working procedures and should have the experience, skill and knowledge to undertake the commissioning of lifts following installation or refurbishment.

1.17 *Other tradespersons*

1.17.1 Other tradespersons such as general cleaners, glass cleaners, rubbish clearers, painters, electricians, welders, builders, etc., working on lift equipment should be competent in their

practising trades. They should be under supervision of their employer. They should not enter or work in a pit nor should they work in the well, on the car or any part of the lift unless:

a) they are under the supervision of trained lift personnel at all times;
b) trained lift personnel have secured the lift against movement in either direction, both electrically and mechanically;
c) where appropriate and subject to risk assessment, a permit to work has been issued.

1.18 *Technical Visits*

1.18.1 The Customer will expect the planned maintenance to include for a minimum of one technician visit per 12 months to the lift.

1.19 *Callout Invoicing*

1.19.1 Any callout deemed chargeable by the Contractor will be invoiced and forwarded to the Client. A copy should also be sent to ESS (VT) Ltd for record purposes, The Contract Administrator shall have the final decision on if a call out is deemed to be within the scope of the warranty period comprehensive maintenance or if it is a chargeable call out.

Section 2 Site Maintenance Activity Schedule

2.1 *General*

2.1.1 The activity schedule lays down the minimum acceptable level of preventative maintenance work. It does not form a definitive list, as this would prove impractical due to the various types of equipment being serviced. All equipment should be maintained as a minimum to the activity schedules of works

2.1.2 The required duration on site will not be less than the following and the contractor should price their offer based upon this schedule:

a) 2 floor lifts - Minimum duration of maintenance visit 1 hour
b) 3-5 floor lifts – Minimum duration of maintenance visit 1.5 hours
c) 6-8 floor lifts – Minimum duration of maintenance visit 1.75 hours
d) 8-10 floor lifts – Minimum duration of maintenance visit 2 hours
e) Above 10 floor – Minimum duration of service visit with engineer and assistant 2 hours
f) Escalators/Travelators – Minimum duration of service visit 1.5 hours.

2.1.3 Visual inspection will not be acceptable under any circumstance and any visit marked as a visual inspection will be deemed to be a missed visit.

2.1.4 The Contractor will be required to provide all necessary diagnostic tools to maintain the equipment to a high quality. No fee for costs to obtain such tools will be entertained by the Client.

2.2 *Prior to starting work*

2.2.1 Report to site office and sign visitors' book and obtain motor room keys.

2.2.2 Post notices on all landings stating that the lift will be out of service.

2.2.3 A suitable barrier should be placed in front of the entrance being used for access and egress. (This barrier will be provided by the Contractor and remain the property of the Contractor, not a permanent site item).

2.2.4 Check site-specific risk assessment prior to starting any work.

2.3 *First visit*

2.3.1 Carry out a site risk assessment including method statements on how maintenance work will be carried out on lifts not fully compliant with the BS7255. These assessments are to be co pied to the Customer within 60 days of the first maintenance visit in PDF format e-mailed to the Customer nominated e-mail address.

2.3.2 Install new log card. The Contractor shall provide and locate in each machine room or in the interface control panel on MRL and platform lifts a new log book in their company's standard format.

A log card shall be provided for each Lift enclosed in a plastic protective wallet the face of which shall bear the Customer's lift number and site address.

2.3.3 After every visit, repair or call out the Contractor shall enter the details of any fault and the work undertaken together with the date of said works followed by the signature of the attending Engineer. Such entry may be considered as proof of attendance and if such details are not entered, the Customer reserves the right to withhold payment. When the log card becomes full, the Contractor shall provide an additional card whilst retaining the original log card.

2.3.4 Complete the first visit report as detailed in this specification, a report is to be completed for each Lift on site and must be returned to the Customer, or the Customer's nominated representative within three months of the Contract commencement. This report shall be e-mailed in a PDF format.

2.3.5 Re-programme the autodialler to the emergency telephone numbers agreed with the Customer, identify any autodialler which cannot be reprogrammed or is faulty and report this back to the Customer with the recommended works required to allow the reprogramming or re-instatement of the autodialler system. All autodiallers must be re-programmed within 28 days of the Contract commencement date.

2.3.6 Check the lift alarm for correct operation and identify any unit which does not have a maintain ed alarm power supply. All alarms without a maintained supply must be identified within 28 days of the Contract commencement date

2.4 *Every service visit - Safety*

2.4.1 All checks must be confirmed as completed on the Engineer's work sheet.

a) Test operation of all emergency stop switches
b) Test operation of all limit switches.
c) Test operation of safety gear and governor switches.
d) Test operation of safety edge and any backup pressure switch systems.
e) Test operation of lift car alarm system and report if not working
f) Test operation telephone / autodialler and report if not working
g) Test operation of the lift car and motor room emergency lighting and rectify any faults on the emergency lighting equipment including the replacement of fittings, circuit breakers and residual current devices and report if not working
h) Check car light lamps, tubes & fittings as necessary and replace any faulty units.
i) Check for levelling accuracy and smoothness of ride, adjust as required.
j) Check for any unusual noise smell or vibration.
k) Check car floor for tripping hazards.
l) Check door gibs / shoes for wear and penetration in track.
m) The motor room and shaft lights shall be checked for operation and any failed lamps replaced as required.
n) The operation of the UPS device and report if faulty

2.5 *Every service visit - Cleaning*

2.5.1 All of the following items must be completed on every service visit.

a) Clean all door tracks and header panels.
b) Clean the lift pit, the pit shall be swept clean and all litter removed from site. All associate equipment in pit area shall be cleaned to prevent the risk of fire.
c) Clean car top
d) Clean motor room and remove all redundant lift material

2.6 *Every service visit - General*

2.6.1 All checks must be confirmed as completed on the Engineer's work sheet.

a) Check all car and landing pushes / call acceptance indicators for correct operation,

replace lamps asrequired.

b) Check all car and landing position indicators, faults should be investigated and rectified.
c) Check voice synthesizer for correct operation, faults should be investigated and rectified.
d) Check all lubrication points and lubricate as necessary.
e) On hydraulic lifts, check overflow bottles, empty on each visit and monitor oil loss levels.
f) Check operation of landing and car doors.
g) Empty guide trip trays and replenish guide lubrication pots
h) Check tension of all door fixings and adjust as necessary.

2.7 *Every Service visit - Motor Room*

a) All checks must be confirmed as completed on the Engineer's work sheet.
b) Check the brake for wear and contamination.
c) Check the controller components for signs of wear and report.
d) Check condition of drive motor, gear and generator.
e) Check hydraulic system for leaks and general condition.

2.8 *Quarterly Visit*

2.8.1 All checks must be confirmed as completed on the Engineer's work sheet.

a) Check car and landing doors for security and door shoe penetration in line with the HSE recommendations(minimum of 10 mm or as required by the manufacturer). This inspection must clearly be shown on maintenance record. Written confirmation must be forwarded to the Customer within 14 days.
b) Check hydraulic oil levels, top up as necessary. Record the date and quantity of oil added in the log card.
c) Check oil level in the gear unit, top up as necessary. Record the date and quantity of oil added in the logcard.
d) Adjust door and lock rollers to ensure the correct running clearances are maintained.
e) Check ram seal condition and report (Replace if worn on Comprehensive Contracts)
f) Check all forced gaps on the car and landing entrances, adjust as required to meet current standards.
g) Undertake a clean down of all guides brackets and other steel work in the lift shaft, where surface are oilimpregnated, a suitable water based cleaning compound shall be used to clean the surface.
h) Check all car, counterweight and ram guides and guide brackets fixings including all wall fixings for correcttension and adjust as necessary. Report any wall fixings that are loose and require replacement/re-fixing.

2.9 *Annual Visit (Technical Visit)*

2.9.1 All checks must be confirmed as completed on the Engineer's work sheet.

a) Oil dash pot (Ellison) type circuit breakers- The main isolation switches and circuit breaker shall be checked, cleaned and replenished with fresh oil. The isolation switch shall be checked for correctly rated fuses and the circuit breaker shall be tested for accurate settings or tripping times, a labelshall be attached showing the date tested & calibrated and the date next due .
b) Overloads – All overloads shall be checked for correct operation & timing and a report submitted
c) Visually inspect all bearings and pulleys and report.
d) Main contactor condition & resistance and report.
e) Rope or chain condition and report.
f) Condition of all door rollers and adjust as necessary to provide the optimum performance, specialattention should be taken to ensure the kicking rollers are set correctly.
g) Adjust all door panel and running clearances to the minimum possible.
h) Alignment of all lock rollers and general condition.
i) Adjust door operators and associated equipment for optimum performance.
j) The condition of any UPS device or rechargeable batteries and report.

k) The operation of the uncontrolled movement device and report.
l) The operation of emergency lowering system and report.
m) The operation of any re-levelling systems and report.

Tender Return

Equipment schedule

The information below provides a guideline on the specification requirements with the Specification reference not being limited to the clause stated. The detailed section of the Specification is to be used to determine the requirements of the equipment.

Equipment	Queens Lift
Hydraulic Valve Block	N
RAMS seals	N
Control Panel	N
Ropes	N
Emergency manual operation	N
Floor level indicator	N
Mains Isolator	R
Car enclosure	R/M
Car operating panel	N
Car position indicator	N
Car sling / frame	R
Car guide shoes	N
Carload weighing	N
Car platform	R
Car toe guard	N
Car door operator	N
Car door	N
Car sill	N
Car door tracks	N
Car entrance protection	N
Car top maintenance unit	N
Landing doors tracks and sills	N
Landing door locks	N
Landing door emergency release	N
Landing door surrounds making good	N
Landing shaft facia panels	N
Landing push stations	N
Landing indicators	N
Landing Architraves	R
Fire Control	N
Alarm system	N
Car guides & brackets	R
Car buffers	N
Pit Controls	N
Electrically interlocked Pit prop	N
Emergency stop switches	N
Pit access	N
Travelling flexes	N
Lift shaft, car, machine room wiring	N
Communication	N
Maintenance barrier	N
Tool board	N
Lifting beam(s)	R/M/N

Notices	N
Temporary hoardings	N
Machine room access door	R
Machine room lighting	N
Machine room ventilation	R
Machine room heating	N
Machine room socket outlets	N
Lift shaft lighting	N
Lift shaft sockets outlets	N
Main electrical supplies	R
Distribution Board /Consumer unit	N
Painting of pit	N
Painting of motor room	N
SAFED all equipment	N
Commissioning BS EN 8486 Series	N