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Electrical and Mechanical Services Department

May 2014

NOTE TO RESPONSIBLE PERSONS FOR LIFTS / ESCALATORS FOR PREPARATION OF LIFT / ESCALATOR MAINTENANCE CONTRACT

1. General

These sample tender specifications serve to assist responsible persons for lifts/escalators (e.g. building owners and management agencies) to procure lift/escalator maintenance services.

Responsible persons for lifts/escalators (“responsible persons” hereafter) may consider using some of the terms and conditions contained in this document for preparation of their own lift/escalator maintenance procurement documents.

This document is not meant to suit the needs of all responsible persons and building owners, and therefore should not be indiscriminately adopted. In particular, it should be noted the figures relating to operational performance contained in the specifications are requirements for specific buildings. Lift/escalator owners (“owners” hereafter) must carefully consider their **own** circumstances, needs and budget, and adjust the specifications according to their own desired performance levels. Circumstances to consider will include specific user requirements on the quality and level of maintenance and emergency service, the necessity for avoiding service stoppage, the availability of professional representatives acting on behalf of the owners.

For comprehensive maintenance contract, the maintenance contractor is required under the contract to provide all types of servicing, maintenance, repair and replacement as the need arises and within the contract sum, without any additional cost to the owner, in order to maintain the lifts/escalators in safe working order satisfying the statutory requirements, and meeting the quality and reliability requirement as stated in the maintenance contract. There may however be exception of items that are expressly stated in the contract and mutually agreed between both parties. Responsible persons must also carefully prepare the terms and conditions for the comprehensive maintenance contract to set the rights and obligations of the contracting parties at the time when the contract is awarded. These include ‘general conditions’ which are common to all types of contracts under their management, as well as ‘special conditions’ which are peculiar to a specific contract, such as payment terms, price variation clauses, penalties, third party insurance, etc.

2. Marking Scheme for Tender Evaluation

Responsible persons should note the following points in case a marking scheme is adopted for tender evaluation:

- (a) A marking scheme should be used for purchasing a service or product whose quality is of vital importance. The tenderer's experience, past performance, technical resources and technical proposals, etc. should also be carefully considered in tender evaluation.
- (b) In adopting a marking scheme for tender evaluation, the evaluation process should be divided into two parts – **technical** and **financial** assessments.
- (c) The weighting for technical and financial assessments, assessment criteria and their relative weighting, or a minimum score (where appropriate), and the formula to be used to calculate the technical and financial scores should be pre-determined, well-defined and approved by the responsible persons or their representatives before tender invitations are to be sent out. The setting of passing scores would ensure that only capable contractors with technical competency would be considered for the contract award.
- (d) When determining the relative weighting for technical and financial assessments, responsible persons could adopt a weighting of 40% (or other weighting where appropriate) for technical score, accompanied with a weighting of 60% (or other weighting where appropriate) for financial score to suit their need. If the quality of the service is of utmost importance, responsible persons may consider giving a higher weighting for the technical score.
- (e) Where a marking scheme in tender evaluation is adopted, an outline of the evaluation criteria should form part of the tender document. Any other requirements which will be considered in deciding the suitability of tender must also be indicated in the tender document.
- (f) The tender document should require tenderers to submit technical information and financial information in two separate sealed envelopes ("**two-envelope approach**") marked respectively with the texts "**Technical Document**" and "**Financial Document**" on the faces of the sealed envelopes.
- (g) A **Tender Opening Committee** should be established and take appropriate actions when opening tenders by adopting the two-envelope approach.
- (h) The Tender Opening Committee should only open the envelopes of technical proposals (those envelopes marked "Technical Document"), date-stamped with initials on all the tenders received. **The Committee should not open the envelopes of financial proposals** (those envelopes marked "Financial Document"). The Committee should then complete a tender

record in duplicate for all tenders received (i.e. the record should include full names of the tenderers), and put the technical proposals with the tender records in a sealed envelope clearly marked with “**Tender ref. XXX - Technical Proposals**”. Similarly, the Committee should put all financial proposals (in their original sealed envelopes) together with the tender records (duplicate) in another sealed envelope clearly marked with “**Tender ref. XXX – Financial Proposals**” with sign. The Committee should pass the original copies of technical proposals with the tender record to the appropriate subject owner or his representative for evaluation.

- (i) The envelopes containing the financial proposals should only be opened and passed to the appropriate subject owner or his representative for assessment after completion of the technical assessment. The tender with the highest total score will normally be recommended for acceptance.
- (j) A proposed marking scheme format is provided in Annex 2 of the “**Note to Tenderer**” of this sample specification for responsible persons’ reference. The proposed format and outline of the evaluation criteria should be stated in the tender document.

Electrical and Mechanical Services Department

May 2014

NOTES TO TENDERERS

(1) Submission of Tender

The tender should be submitted to *(Address)* _____
_____ (Attn.: _____).

(2) Pre-tender Site Visit

Pre-tender site visits can be arranged *from (date)* _____ *to (date)* _____.
Interested tenderers should complete in full the form of “**Request for Site Visit**” at **Annex 1**
and have it returned the form fully completed and signed to this office by fax (*fax*
no.: _____) on or before *(date)* _____ for arrangement of site visits. Late
submissions will not be entertained.

(3) Clarification

If the tenderer is in doubt of the precise meaning of any item or figure contained in the tender
documents, he or she can before the tender closing date seek clarification from *(the Chairman of*
Incorporated Owners/ Property Management Office/ E&M consultant) _____

(Name and Telephone No. _____).

(4) Check List

- (i) Before the tender is sealed and delivered to the Tender Box, please check the
following:
- (a) The tender has been properly signed and signature witnessed.
 - (b) All the documents issued with or requested in the tender documents such as
acknowledgements of receipt of corrigenda or addenda, are properly completed
and attached to the tender.
 - (c) Copies of the Form of Tender, the Technical Document and the Financial
Document of the Contractor’s Proposal are attached to the tender.
- (ii) Please allow adequate time for your tender to be delivered to the Tender Box. The
Tender Box is closed on the tender closing day of *(date)* _____.
Tenderers are reminded to ensure that their tenders are deposited in the Tender Box
before the closing time.
- (iii) This “Notes to Tenderer” is for guidance only and does not form part of the tender
documents.

(5) Marking Scheme

Tenderers should note that tenders will be evaluated in accordance with the marking scheme at **Annex 2**. Tenderers should note that the Employer is not bound to accept the tender with the highest overall scores or any tender. In considering the acceptance of a tender, the Employer will take account of all relevant circumstances including the following:-

- (i) The overall scores of the tender;
- (ii) The effect of incident of payments by discounting future payments to obtain the present values if the tendered prices/overall scores are very close;
- (iii) The effect of exceptionally high or low priced items; and
- (iv) The tenderer's capability (financially and technically) in undertaking the works under the contract. For the avoidance of doubt, matters such as bankruptcy, false declaration, lack of integrity, and acts of dishonesty, the latest available information and reports reflecting serious shortfall in performance, or relating to serious safety or environmental incident may be taken into account in determining whether a tenderer is fully capable of undertaking the works under the contract.

The submissions on technical resources and technical proposals are to form parts of the Contract. The tender price submitted in the Tender is deemed to be inclusive of the execution of the Works in accordance with the submissions on technical resources and technical proposals. Tenderers shall ensure that it is legally and physically possible to execute the Works in accordance with the submitted technical proposals. Should the Contractor for any reason be unable to adhere to the submissions on technical resources and technical proposals, any cost savings to the Contractor arising therefrom are to be determined by the Employer and deducted from the Contract Sum. For the avoidance of doubt, the Contractor will not be entitled to any additional payment or extension of time for completion for the execution of the Works in a manner which differs from the technical submission on technical resources and technical proposals.

The tenderer should submit technical information and financial information in two separate sealed envelopes respectively marked with the texts "**Technical Document**" and "**Financial Document**" on faces of the sealed envelopes.

Annex 1 – Request for Site Visit (Contract No. _____)

To: (Building / Property Management Office)

Address: (Building / Property Management Office's address)

Tel. No.: (Responsible person's telephone no.)

Fax No.: (Responsible person's fax no.)

Attn.: (Responsible person)

Dates and Time of Visit :	(dd/mm/yyyy at hh:mm)
Location of Site Visit:	(Location of the lift/escalator)

The following part to be filled in by the tenderer:-

We will attend the site tour:-

Number of Persons attended : (not more than 2 person)	(1) Name: (2) Name:
Company :	
Address :	
Fax :	
Contact Person:	
Contact Tel :	
Signature and Company Chop :	
Date of Issue :	

Please return by fax (fax no. _____) before (date)_____.
(Late submission will not be entertained.)

ANNEX 2 -- MARKING SCHEME IN TENDER EVALUATION FOR * LIFT/ESCALATOR MAINTENANCE CONTRACTS**(A) Technical Score Weighting Distribution**

ATTRIBUTES	PREMITTED FULL MARKS	MARKING STANDARD ¹
<u>Section 1 – Tenderer’s Experience</u>	<i>Max. 10 marks</i>	
1(a) Relevant *lift/escalator contracts completed in the past 5 years which involved submission of Form 5/Form LE5 or Form 7/Form LE7, counting from the original date set for the close of tender, to demonstrate that the tenderer has the relevant management and technical experience.	5 mark	0 mark – Min. accumulated contract sum for 5 years of HK\$ _____ 1.5 mark – 6 times as much as the minimum requirement 3.0 mark – 12 times as much as the minimum requirement 5.0 mark – 20 times as much as the minimum requirement
1(b) Relevant *lift/escalator maintenance contracts completed in the past 5 years, counting from the original date set for the close of tender, to demonstrate that the tenderer has the relevant management and technical experience.	5 mark	0 mark – Min. accumulated contract sum for 5 years of HK\$ _____ and min. average of _____ (numbers) *lifts/escalators per year 1.5 mark – 6 times as much as the minimum requirement 3.0 mark – 12 times as much as the minimum requirement 5.0 mark – 20 times as much as the minimum requirement

* Remarks : Tenders failing in any attributes with minimum requirements specified in Section 1 are to be considered as technically unacceptable and will not be given any further consideration on the whole tender.²

If foreign currencies are involved in assessing the value of the contract sum, the exchange rate for conversion to HK currency is to the average between the buy and sell TT rates sourced from the Hong Kong Association of Banks available from its website’s historical data for the date set for the close of tender or the extended date where applicable.

¹ The making standard listed below is for reference and is based on government lift/escalator maintenance contracts. Responsible persons for lift/escalators, property management agents and consultants may consider if some sections/sub-sections are applicable to their needs and/or adjust the making standard to suit their specific criteria.

² The application of the remarks is for reference only and is subject to the consideration of the responsible persons for lifts/escalators.

ATTRIBUTES	PREMITTED FULL MARKS	MARKING STANDARD ³
<i>Section 2 – Tenderer’s Technical Resources</i>	<i>Max. 18 marks</i>	<i>Tenderer is required to fill in Form 2 listed in Appendix II to the General Conditions of Tender hereof for assessment</i>
2(a) Proposed managerial, technical staff	Max. 8 marks	
2(a)(i) Number of Full-time Registered *Lift/Escalator Engineer	4 marks	0 mark – Minimum 2 1 mark – With not less than one Registered *Lift/Escalator Engineer per 300 *lifts/escalators per year count 2 mark – With not less than one Registered *Lift/Escalator Engineer per 250 *lifts/escalators per year count 3 mark – With not less than one Registered *Lift/Escalator Engineer per 200 *lifts/escalators per year count 4 mark – With not less than one Registered *Lift/Escalator Engineer per 100 *lifts/escalators per year count
2(a)(ii) Number of Registered *Lift/Escalator Workers	4 marks	0 mark – Minimum 10 2 mark – With not less than one Registered *Lift/Escalator Worker per 40 *lifts/escalators per year count 4 mark – With not less than one Registered *Lift/Escalator Worker per 20 *lifts/escalators per year count
2(b) Essential facilities	Max. 10 marks	
2(b)(i) Area of Office Accommodation	2 marks	0 mark – Minimum 50 sq. m usable floor area (UFA) 2 mark – Over 500 sq. m UFA
2(b)(ii) Area of Workshop/Storage Space	2 marks	0 mark – Minimum 25 sq. m UFA 2 mark – Over 300 sq. m UFA
2(b)(iii) 24 Hours Fault Call Communication Center	2 marks	0 mark – Minimum 2 telephone lines 0.5 mark – Each additional telephone line (up to 2 marks max.)
2(b)(iv) Number of Emergency Depot	4 marks	0 mark – Minimum 2 0.5 mark – Each additional depot (up to 4 marks max.)

* Remarks : Tenders failing in any one of the attributes with minimum requirements specified in Section 2 shall be considered as technically unacceptable and will not be given any further consideration on the whole tender.⁴

³ The making standard listed below is for reference and is based on government lift/escalator maintenance contracts. Responsible persons for lifts/escalators, property management agents and consultants may consider if some sections/sub-sections are applicable to their needs and/or adjust the making standard to suit their specific criteria.

⁴ The application of the remarks for reference only and is subject to the consideration of the responsible persons for lifts/escalators.

ATTRIBUTES	PREMITTED FULL MARKS	MARKING STANDARD ⁵
<u>Section 3 – Tenderer’s Technical Proposal</u>	<i>Max. 39 marks (Overall *passing marks: 19.5)</i>	<i>Tenderer is required to fill in Form 3 listed in Appendix II to the General Conditions of Tender hereof for assessment</i>
3(a) Possession of ISO 9001:2000 or ISO 9001:2008 Certification	2 marks	2 mark – For possession of a valid certificate for the current year
3(b) Possession of ISO 14001:2004 Certification and OHSAS 18001:1999 or OHSAS 18001:2007 Certification	2 marks	1 mark – For possession of each certificate that is valid for current year
3(c) VTC Apprenticeship Scheme	2 marks	1 mark – Not less than 2 apprentices registered under the VTC Apprenticeship Scheme in the past five years counting from the original date set for the close of tender 2 mark – Not less than 5 apprentices registered under the VTC Apprenticeship Scheme in the past five years counting from the original date set for the close of tender
3(d) Graduate Scheme “A” Training of the Hong Kong Institution of Engineers	2 marks	1 mark – Not less than 2 engineering graduate trainees registered under the Graduate Scheme “A” Training in the past five years counting from the original date set for the close of tender 2 mark – Not less than 5 engineering graduate trainees registered under the Graduate Scheme “A” Training in the past five years counting from the original date set for the close of tender
3(e) Training Plan for Staff	6 marks	0 mark – Unacceptable Training Plan 1 mark – Very Poor Training Plan 2 mark – Poor Training Plan 3 mark – Satisfactory Training Plan 4 mark – Good Training Plan 5 mark – Very Good Training Plan 6 mark – Excellent Training Plan Assessment of the Training Plan would include but not limited to the following: - Relevant training on those brands/models of lifts and escalators specified in the tender document - Technical training accredited by the manufacturer(s) of lifts and escalators specified in the tender document for strengthening staff’s conversancy in undertaking lift/escalator works

⁵ The making standard listed below is for reference and is based on government lift/escalator maintenance contracts. Responsible persons for lifts/escalators, property management agents and consultants may consider if some sections/sub-sections are applicable to their needs and/or adjust the making standard to suit their specific criteria.

ATTRIBUTES	PREMITTED FULL MARKS	MARKING STANDARD ⁶
3(f) Safety Scheme	6 marks	0 mark - Unacceptable Safety Scheme 1 mark – Very Poor Safety Scheme 2 mark – Poor Safety Scheme 3 mark – Satisfactory Safety Scheme 4 mark – Good Safety Scheme 5 mark – Very Good Safety Scheme 6 mark – Excellent Safety Scheme Assessment of the Safety Scheme would include but not limited to the following: <ul style="list-style-type: none"> - Implementation of a safety management system - Provision of safety training - Provision of related training for the brand(s)/model(s) of lifts and escalators specified in the tender document
3(g) Method Statement for Taking Up Maintenance of *Lifts/Escalators of the Brand/Model Specified in the Tender Document	12 marks	0 mark – Unacceptable Method Statement 2 marks – Very Poor Method Statement 4 marks – Poor Method Statement 6 marks – Satisfactory Method Statement 8 marks – Good Method Statement 10 marks – Very good Method Statement 12 marks – Excellent Method Statement Assessment on Method Statement would include but not limited to the following: <ul style="list-style-type: none"> - Methodology on maintaining different brand/model of *lifts/escalators specified in the tender document - Operating procedure for maintenance of lifts and escalators specified in the tender document - Whether the tenderer has direct support in technical aspects from the original manufacturer/original supplier of the brand/model of *lifts/escalators specified in the tender document - Whether the tenderer employs well experienced technicians and registered lift/escalator engineers for undertaking the maintenance for the brand/model of *lifts/escalators specified in the tender document

⁶ The making standard listed below is for reference and is based on government lift/escalator maintenance contracts. Responsible persons for lifts/escalators, property management agents and consultants may consider if some sections/sub-sections are applicable to their needs and/or adjust the making standard to suit their specific criteria.

ATTRIBUTES	PREMITTED FULL MARKS	MARKING STANDARD ⁷
3(h) Written Confirmation on Availability of Genuine Spare Parts from Original *Lift/Escalator Manufacturer	7 marks	0 mark – No valid written confirmation from original Manufacturer / original Supplier or Authorized Dealer on availability of comprehensive spare parts for the Brand of lift/escalator installations 7 mark – Valid written confirmation(s) from original Manufacturer / original Supplier or Authorized Dealer on availability of comprehensive spare parts for the Brand of lift/escalator installations is/are provided

* Remarks : Tenders failing of gaining of 50% of full mark in Section 3 shall be considered as technically unacceptable and will not be given any further consideration on the whole tender.⁸

⁷ The making standard listed below is for reference and is based on government lift/escalator maintenance contracts. Responsible persons for lifts/escalators, property management agents and consultants may consider if some sections/sub-sections are applicable to their needs and/or adjust the making standard to suit their specific criteria.

⁸ The application of the remarks for reference only and is subject to the consideration of the responsible persons for lifts/escalators.

(B) Joint Ventures

Attributes under Section (1) – Tender’s Experience

All participants or shareholders of a joint venture tenderer shall be collectively assessed as one entity. It is not necessary that every participant or shareholder must be individually qualified to tender. For the Section (1) attributes, qualifications and experience of a joint venture tenderer are to be the weighted average of each participant or shareholder in the joint venture based on their respective shares of the work by value. For example, if contractor A has 2 relevant contracts and contractor B has 3 relevant contracts, then if A and B form a joint venture and their share is 50/50, the joint venture would have $(2 \times 0.5) + (3 \times 0.5) = 2.5$ relevant contracts.

In considering a relevant contract, the full contract value will be taken into account. However, the calculation of the number of relevant contracts a tenderer or a participant/shareholder of the joint venture will be adjusted based on their respective shares of the work in any previous joint venture by value. For example, if tenderer A has completed a relevant contract in a joint venture of which he has a 50% participation by value of the contract, he will be considered to have completed 0.5 relevant contract. If this tenderer A teams up with tenderer B in a joint venture to submit a tender and their share is 50/50, tenderer A will be considered to have $(0.5 \times 0.5) = 0.25$ relevant contract. Other combinations follow a similar approach.

(C) Overall Scores

The respective weights for price and technical score are 60/40. The overall score for each conforming tender is determined according to the formula below. Normally, the tender with the highest overall score would be recommended for acceptance subject to the usual requirement that the Employer is satisfied that the recommended tenderer is fully (including technically, commercially and financially) capable of undertaking the works in the tender document.

$$\text{Technical Scores} = 40 \times \frac{\text{the technical score}}{\text{the highest technical score among those conforming tenders}}$$

$$\text{Financial Scores} = 60 \times \frac{\text{lowest price among those conforming tenders}}{\text{the tender price}}$$

Overall Scores = Technical Scores + Financial Scores

For the purpose of calculation using the formula above, a conforming tender means a tender which:

- (a) conforms to the essential requirements stipulated in the tender documents;
- (b) is submitted by a tenderer which complies with the conditions of participation;
- (c) has passed the Stage I Screening (where Stage I is applicable); and
- (d) in respect of its technical submissions, has satisfied the passing marks requirements.

A conforming tender with abnormally low or high tender price or is considered unsuitable for recommendation for the award of the contract (such as financially, commercially or technically incompetent) remains to be a conforming tender. However, any tenderer failing to reach any set passing mark as explained in Remarks of each Section above will be disregarded in the formula calculations.

For tenders with a tender price, if the tendered sums or the overall scores of those top few tenders are very close (usually the three with the highest overall scores), the Employer may discount future payments to obtain the present value and use the present value to substitute the tender price in determining the overall scores. This exercise should only apply to those top few tenders.

**SAMPLE CONTRACT FOR PROCUREMENT OF COMPREHENSIVE
LIFT/ESCALATOR MAINTENANCE SERVICES**

TABLE OF CONTENTS

Section 1	–	Form of Tender
Section 2	–	Particular Specifications
Section 3	–	Schedule of Rates

PARTICULAR SPECIFICATIONS

CONTENTS

1	GENERAL REQUIREMENTS.....	4
1.1	General.....	4
1.2	Site Visits before Submitting Tender.....	4
1.3	Taking over of Existing Lifts/Escalators.....	5
1.4	Handover of Lifts/Escalators to the Employer prior to the Termination or Expiry of the Contract	5
1.5	Attendance at Hand-over Meetings and Follow-up Submission.....	6
1.6	Provision of Experienced and Competent Staff.....	6
1.7	Provision of Tools, Consumables and Safety Facilities.....	6
1.8	Stock of Spare Parts, Replacement and Use of Alternative Make.....	7
1.9	Application Fees.....	7
1.10	Log Book.....	8
1.11	Shut-down of Lift and Escalator System.....	8
1.12	Work to be Carried out by Two or More Lift Workers.....	9
1.13	Security.....	9
1.14	Clearance of Debris and Unwanted Materials, etc.....	9
1.15	Site Safety Requirement.....	9
1.16	Information to be Submitted to the Employer.....	9
1.17	Remedy on Contractor's Failure to Perform.....	10
2	EXTENT OF WORKS.....	10
2.1	General Requirement.....	10
2.2	Site Co-ordination.....	12
2.3	On-call Maintenance and Emergency Repair Services.....	12
2.3.1	Contractor's Emergency Call Centre.....	12
2.4	Performance Target on Maintenance Service.....	16

2.5	Regular Inspection and Servicing	17
2.6	Periodic Examination, Testing and Maintenance.....	18
2.7	Alteration, Addition and Improvement Works (AA & I Works).....	21
3	SCHEDULE OF RATES.....	22
3.1	General.....	22
3.2	Rate for Items Not Mentioned in the Schedule of Rates.....	23
4	PAYMENT	24
4.1	Payment Claims	24
4.2	Claim for Maintenance Service.....	24
4.3	Deduction of Maintenance Fee for Suspension of Service	25
4.4	Payment for Works Covered by Works Orders	26

APPENDICES TO PARTICULAR SPECIFICATION

Appendix 1	Contractor's Staff and Workshop Facilities
Appendix 2	Monthly Fault Call and Emergency Repair Report
Appendix 3	Maintenance Schedule for Electric Passenger, Goods and Service Lifts
Appendix 4	Maintenance Schedule for Hydraulic Lifts
Appendix 5	Maintenance Schedule for Escalators and Passenger Conveyors
Appendix 6	Monthly Service Report for Electric Passenger, Goods or Services Lift
Appendix 7	Monthly Service Report for Hydraulic Lift
Appendix 8	Monthly Service Report for Escalator or Passenger Conveyor
Appendix 9	Monthly Service Report for Stairlift
Appendix 10	Quarterly Inspection Report for Electric Passenger, Goods, Services and Hydraulic Lift
Appendix 11	Quarterly Inspection Report for Escalator or Passenger Conveyor
Appendix 12	Performance Targets of Lift and Escalator Installations
Appendix 13	Tentative Rope Replacement Program
Appendix 14	Maintenance Services
Appendix 15	Preventive Maintenance Requirements for Air-conditioning and Ventilation Installations
Appendix 16	List of Air Conditioning Units for Lift Car and Ventilation Fans for Lift Shaft
Appendix 17	Equipment Schedule
Appendix 18	Sample form for Approval of Non-Schedule Rate

1 GENERAL REQUIREMENTS

1.1 General

The Contractor shall attend fault call, inspect, service, repair, maintain, modify, supply, install, test and commission the lifts and escalators to meet the functional requirements of various areas of the accommodation. All materials, equipment and appliances shall be originated from the original or reputable manufacturers.

All materials and workmanship shall comply with all relevant sections of the latest edition of the following and all current amendments thereto issued, unless otherwise specified on a particular Works Order or instructed by the Employer :-

- (a) Code of Practice on the Design and Construction of Lifts and Escalators issued by the Electrical and Mechanical Services Department;
- (b) Code of Practice on the Design and Construction of Buildings and Building Works for the Installation and Safe Use of Lifts and Escalators issued by the Building Authority;
- (c) Code of Practice for Lift Works and Escalator Works issued by Electrical and Mechanical Services Department (“Works Code”);
- (d) Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment issued by the Fire Services Department;
- (e) Code of Practice for Energy Efficiency of Building Services Installation 2012 Edition issued by Electrical and Mechanical Services Department;
- (f) Design Manual – Barrier Free Access issued by Building Authority; and
- (g) Guidelines on Safety of Lift Shaft Works issued by the Construction Industry Council.

The Contractor’s attention is also drawn to the requirements of BS7671 – The IET Wiring Regulations for Electrical Installations, 17th Edition. All inspection, checking, adjusting, servicing, modifying, testing, maintenance and repairing services for those lifts/escalators not exempted from such Regulations shall be carried out by competent persons provided by the contractor in a safe, prompt and workmanlike manner to the satisfaction of the Employer.

1.2 Site Visits before Submitting Tender

Before completing and submitting tenders, the tenderers are advised to visit the sites to appreciate and familiarize the extent of work. Venue address can be viewed at the Employer’s office and site visit could be arranged by contacting the Employer whose name is given in the **Notes to Tenderers** of the tender document. Failure to visit site(s) prior to tendering will not be entertained as an excuse for deviations once the tender is submitted. The technical details given in the **Equipment Schedule** is for indication of the approximate information only and the tenderer shall have no claim against the Employer should the actual detail vary considerably from the list.

1.3 Taking over of Existing Lifts/Escalators

The maintenance of the lifts/escalators is currently carried out by a maintenance contractor. With effect from the commencement date of the Contract, the Contractor shall take over the above responsibility and shall carry out the Works for those existing lifts/escalators in accordance with the requirements of this Particular Specification.

Two (2) weeks prior to the commencement of the Contract, inspection of the lifts/escalators can be arranged by the Employer upon request of the Contractor to ensure that all lifts/escalators available to him are in good working order. The Contractor shall check the running conditions of the lifts/escalators and shall immediately inform the Employer of any defect found. Apart from the above defective components or equipment claimed by the Contractor, it is deemed that all lifts/escalators available to him are in good working order and the Contractor shall be required to accept full responsibility of maintaining the lifts/escalators.

Upon taking over the maintenance of the lifts/escalators, the Contractor shall carry out a thorough examination for each lift/escalator and submit an examination report following the format given in the Appendices to the Code of Practice for Lift Works and Escalator Works for every lift/escalator to the Employer's Representatives within two (2) weeks from the date of commencement of Contract.

Unless the lift or the escalator concerned is to undergo modification or repair work, the submission of the examination report should not be delayed for more than a month from the date of taking over of maintenance. In quoting the price in the **Form of Tender**, it is deemed that the Contractor has included adequate contingencies to off-set any work he may find necessary to meet his own ongoing maintenance requirements.

1.4 Handover of Lifts/Escalators to the Employer prior to the Termination or Expiry of the Contract

One month prior to the termination or expiry of the Contract, the Contractor shall arrange a schedule handover to the Employer for all lifts/escalators of the Contract. The Contractor shall carry out a thorough examination on each lift/escalator within one month prior to the termination or expiry of the Contract and submit a test/examination report following the format given in the Appendices to the Code of practice for Lift Works and Escalator Works for every lift/escalator to the Employer's Representatives two weeks prior to the termination or expiry date of the Contract. The Contractor shall ensure that the lifts/escalators are in good working order, safe and satisfactory operation condition at the time of handover. The successive maintenance contractor shall be invited by the Employer's Representative to attend the joint site handover inspection.

During the handover inspection, any defect and/or damage found in any of the Lift/escalator caused by the negligence of the Contractor as construed from the terms and conditions of the Contract, shall be duly and timely rectified/repared at the Contractor's own expenses and to the satisfaction of the Employer before arranging for another inspection of the lift/escalator.

The Contractor's obligation under the Contract shall not be released until all lifts/escalators of the Contract are successfully handed over to the Employer. All incurring expenses including the cost of works to be carried out by others due to the unnecessary delay in handover of lifts/escalators to the Employer upon the termination or expiry of the Contract shall be fully reimbursed from the Contractor accordingly.

1.5 Attendance at Hand-over Meetings and Follow-up Submission

When requested by the Employer, the Contractor shall attend at all completed lifts/escalators at the hand-over meetings at no extra cost to the Employer, for the purpose of subsequent maintenance of the lifts/escalators. Upon accepted the mutually agreed maintenance fee if not found from the “**Schedule of Rates**”, a site instruction will be issued to cover the variations.

1.6 Provision of Experienced and Competent Staff

The Contractor shall assign at least ___ nos. of competent and experienced management and supervisory staff (i.e. supervisors/engineers), who have at least 5-year experience relate to lift/escalator installation and maintenance, to oversee the execution of this contract and liaise with the Employer or his representatives on matters of work programme, orders and complaints. The management and supervisory staff shall ensure that the Contractor’s qualified employees would carry out their duties and responsibilities efficiently and effectively. They shall ensure that the maintenance and repair work and/or testing are carried out in strict accordance with the agreed programmes. They shall also be given the overall responsibility for procurement of materials required for the works.

The Contractor shall assign at least ___ nos. of Registered Lift/Escalator Engineer carrying out lift/escalator works concerning all design, statutory and technical matters. The Registered Lift/Escalator Engineers shall be registered with the Electrical and Mechanical Services Department as a Registered Lift/Escalator Engineer under the Lifts and Escalators Ordinance, Cap. 618, and shall have at least of 3-year experience in maintenance and testing and commissioning of lift/escalator.

The Contractor shall assign at least ___ nos. of Registered Lift/Escalator Worker serving for routine and comprehensive maintenance service and emergency service, under close direct supervision of the Contractor. The Registered Lift/Escalator Workers shall have at least of 5-years lift/escalator engineering experience, the last 3 years of which shall be in lift/escalator maintenance. They shall be registered with the Electrical and Mechanical Services Department as a Registered Lift/Escalator Worker under the Lifts and Escalators Ordinance, Cap. 618.

The Contractor shall provide sufficient qualified technical staff, field staff and safety personnel to ensure the Works under this contract be satisfactorily carried out safely and meeting the performance targets and programmes.

The Contractor shall also provide competent attendant(s) to monitor any works in relation to the lift/escalator maintained (e.g. cleaning of lift pits, electrical system maintenance, generator set maintenance, repairing CCTV camera & PA system, MVAC system maintenance, drain out the accumulated water from the lift pits and fire services system maintenance...etc.) arranged by the Employer at no extra charge.

The Contractor shall also provide sufficient qualified technical and professional staff to facilitate Electrical and Mechanical Services Department to carry out the audit inspection at no extra charge.

1.7 Provision of Tools, Consumables and Safety Facilities

The Contractor shall provide all tools, consumables (e.g. oil, grease, detergents, cleaners, preservatives, cotton waste, etc.), safety facilities (e.g. working platform), personal protection equipment and other necessary materials as required for the execution of duties as required by this Contract. All necessary labour and materials of any value, tools, instruments, testing equipment,

and transportation, etc. required for carrying out fault attendance, routine and emergency inspection, testing, repair, replacement and maintenance services shall deem to be included in the itemized rates of the Schedule of Rates.

1.8 Stock of Spare Parts, Replacement and Use of Alternative Make

In the execution of servicing and maintenance, repair and operation work on site, apart from transport, necessary labour, tools, equipment, testing instruments, the Contractor shall also be responsible for keeping adequate stock of spare parts. All labour costs and costs for repair or replacement of parts whenever required shall be included under this Contract.

- (a) All the parts shall be provided to site within 24 hours for replacement/rectification works excluding lift motors. Otherwise, the Contractor shall maintain the sufficient spare parts including software of EMS (Elevator Management System) and lift machine on stock which could not be provided within 24 hours.
- (b) The Contractor shall keep adequate stocks of essential spare parts, equipment and other components which are necessary to maintain the safe and satisfactory working condition and operation order of the lift/escalator at all times. The essential spare parts shall include but not limit to major items such as travelling cable, group controller cards, compensating chain, driving chain, step chain, handrail, etc. Replacement of equipment, parts and components shall be made in accordance with manufacturer's spare part list. The Contractor shall be required to provide details, with supporting document, of the stock level of their spare parts to provide capability to meet the requirements of the Specification.
- (c) A permanent replacement of the genuine equipment, parts and/or components with alternative products shall **not** be implemented without good reasons, subject to the manufacturer's warranty that the safe and satisfactory working condition and operation order of the installation will not be affected due to the use of alternative make. The approval of Employer shall be obtained prior to the replacement.
- (d) Subject to Employer's approval on each case, alternative and compatible equipment, parts and/or components are allowed to be used as contingent measure to temporarily re-instate the function and operation of the lift/escalator during on-call maintenance and emergency repair services, and subject to the Contractor's undertaking for their subsequent replacement by genuine products as quoted in the manufacturer's spare part list on or before a specified date to be agreed by the Employer. Unless otherwise specified in the Particular Specification, the temporary and subsequent replacement works including provision of equipment, parts, components, all necessary tools and materials shall be provided under the Contract at no extra cost.
- (e) Any replacement of equipment, parts and/or components due to non-availability of spare parts and/or obsolescence shall be substantiated by the manufacturer of the product.
- (f) Expected risks shall be limited to damage caused to the lift/escalator by flooding, typhoon, fire, etc., beyond the control of the Contractor and as agreed by the Employer.

1.9 Application Fees

The Contractor shall pay all Government or other official charges or fees under the provisions of any law for the use or operation of the Equipment.

1.10 Log Book

The log book shall be provided by the Contractor and kept at management offices of management agent or Employer's representative, or appropriate places on site as agreed by the Employer. Every attendance and detail of work done to each lift/escalator shall be entered into the log book by the Contractor so as to form a maintenance record, and/or to certify the Contractor's attendance visits as required by this Contract. The log book entries will be taken as record for the services provided by the Contractor in accordance with the requirements stipulated in the Lifts and Escalators Ordinance, Cap.618. The Employer's Representative will check the entries randomly to ascertain the work described in the Contract properly executed. If the lift/escalator is found not attended for a period of time, the monthly payment will be adjusted according to the formula given in Clause 4.2 of this Particular Specification.

In addition to record in the log book, the Contractor shall also inform the Employer's Representative in writing for any anomaly found during the routine inspection which may not cause present danger to the passenger but awareness is to be taken.

If the log book is damaged, lost or fully complete, the Contractor shall inform the Employer's Representative immediately for its replacement. The replacement of log books and their return to the Employer's representative or other party as designated by the Employer is the responsibility of the Contractor under the Contract.

1.11 Shut-down of Lift and Escalator System

Shut-down of lift and escalator system at the premises or site concerned during execution of works shall be kept to minimum. The Contractor shall dispatch sufficient technical staff to execute diligently the works within a reasonable period of time or as directed by the Employer.

If shut-down is deemed necessary and is not caused by any incident which required to be reported to Director of Electrical and Mechanical Services, the following guidelines must be observed:

- (a) Shut down of any lift/escalator must be strictly on need basis and resumed as soon as possible.
- (b) Avoid shutting down all lifts or escalators within a building at the same time.

If the lift or escalator cannot be resumed before the end of the 4-hour period after the Contractor becomes aware of the serious incident, the Contractor shall display a notice in a conspicuous part of the lift or escalator by using **Form LE30**.

The Contractor shall be responsible for giving well in advance verbal and written notice to the Employer or his representative on any shut down indicating the scheduled shut down period and the resumption of the system. If extension of shut down period is required for the system, the Contractor shall report the case to the Employer and the venue-in-charge immediately. Any shut down case and details of shut down shall be recorded in the maintenance log book kept at site.

The Contractor shall provide and fix at all landings with appropriate notice and guard railing during each shut down incident. The temporary guard railing and notice should be taken away immediately when the system is resumed to normal or upon instructed. The cost of these provisions, including all necessary items under the Employer's instructions, testing procedure, and essential examination activities specified under the Works Code shall be deemed to be included in the Schedule of Rates and they will not be separately paid.

1.12 Work to be Carried out by Two or More Lift Workers

The Contractor shall remind its lift workers to take necessary safety precautions in carrying out maintenance and repair works, in particular when any safety circuit is bypassed or interfered affecting the safety of the lift users. The Contractor shall ensure that the lift works, other than for stairlifts and vertical lifting platforms, are carried out by two or more lift workers as required in accordance with the Works Code.

1.13 Security

The Contractor shall ensure that lift/escalator included in this Contract is properly and adequately executed in good working order, safe operation condition and for its efficient performance. Before leaving the Site and on completion of execution of work each time, the Contractor shall be responsible for keeping all tools, materials in safe custody, and relevant access doors and panels locked.

1.14 Clearance of Debris and Unwanted Materials, etc.

On completion of the repair or maintenance or other contract works, the Contractor shall remove, to an appropriate disposal point, all old parts or debris arising out of the works on daily basis at the Contractor's own expenses. All parts removed from the installation should be inspected and agreed by the Employer's Representative before they are to be disposed of. The Contractor shall keep the equipment and its surrounding area clean and tidy to the satisfaction of the Employer.

The Contractor shall be responsible for keeping each lift/escalator and machine room on Site in a clean and orderly condition to the satisfaction of the Employer or his representative at no extra cost. Should the Contractor fail to comply with this requirement, the Employer may order the cleaning work to be carried out by others and subsequently reimburse the full cost of the work from the amount payable to the Contractor.

1.15 Site Safety Requirement

The Contractor shall fully comply with all site safety requirements as required by laws of Hong Kong. Any cost arises from the compliance of the safety requirements shall be fully borne by the Contractor and shall be deemed to be included in the **Schedule of Rates**, and it will not be separately paid.

The Contractor shall also take all necessary safety measures, e.g. use of barriers, to the satisfaction of the Employer, to prevent people from getting accidental access to the lift shaft at all points of entry and to maintain the same during the entire period of maintenance or repair work.

1.16 Information to be Submitted to the Employer

In addition to the requirement of staff organization, Contractor's facilities, programs, plant logs and reports, etc. that stipulated in the Specification, the Contractor shall obtain the approval from the Employer, and notify the Employer or his representative the method, sequence and program for execution of the Works prior to the execution of the Works in all cases of maintenance, overhaul,

repair, modification, addition and/or improvement work.

The Contractor shall, at all time, ensure no/minimal interference to client and other contractors on site during the whole course of execution of the Works. Failure in compliance with this requirement, the Contractor shall indemnify the Employer against any claim arising from his fault.

1.17 Remedy on Contractor's Failure to Perform

As specified in Clause 4.3 of this Particular Specification and should there be any repairing work outstanding for over 15 days for whatever reasons, the maintenance fee for the lift or escalator of the concerned work would be deducted from the contract on monthly basis until the repair work is made good and the whole system is restored to its normal operation.

If the Contractor fails to carry out any work required under the Contract or refuse to comply with any instruction or order given by the Employer in accordance with the Contract within a reasonable time, the Employer may give the Contractor a 7 days' notice in writing to carry out such work or comply with such instruction.

If the Contractor fails to comply with such notice, the Employer shall be entitled to carry out such work or instruction by his own workmen or by other contractors. Without prejudice to any other remedy, all additional expenditure properly incurred by the Employer in having such work or instruction carried out shall be recoverable by the Employer from the Contractor by deduction from moneys due to the Contractor under this Contract or under any other contract between the Employer and the Contractor.

2 EXTENT OF WORKS

2.1 General Requirement

The Contractor shall provide the all-in comprehensive maintenance service and to maintain efficient and prompt response to breakdown; emergency call-out or complaint for the timely attendance of installation/equipment failure and/or unsatisfactory services.

The Contractor shall properly, effectively and efficiently operate and maintain all the lift/escalator involved in the Contract for their reliable, satisfactory and safe operation.

The Contractor shall provide all transport, labour, material for the servicing, repair, or replacement at no additional cost to the Employer such unserviceable mechanical and electrical parts including but not limited to steel wire ropes, compensating chain, travelling cables, driving chain, lighting fittings, lift shaft lighting system, fuses, indicator lamps, air conditioning units and ventilation fans for lift car, CCTV cameras, monitors and cables, socket outlets, non-structural steel works at lift shaft, lift pit and escalator pit, etc. of the lift/escalator due to normal wear and tear or at the end of their serviceable life for the normal operation of the lifts/escalators. Cleaning materials, lubricants, chain preservative, testing instruments, mobile phones etc. required for the on-call maintenance and maintenance services are also deemed to be included in the itemized rates of the **Schedule of Rates**.

For the repair and replacement of those parts accessible by others, which are: car ceiling, fan/blower louver, light diffuser, landing door, emergency door, car wall panel, car decoration, handrail, skirting, transom, entrance column, and front return panel, car flooring, landing architrave, emergency door architrave, and emergency door sill for lift; and landing plate,

lamp cover, cladding, decorative, balustrade and rubber handrail for escalator and those parts which are damaged by misuse, vandalism, accident, fire and other causes which are beyond the control of the Contractor, the Contractor could be paid separately.

The Contractor shall make good, repair or replace all parts at his own cost if the damage or defect is due to the negligence of the Contractor.

The Contractor shall replace all wire ropes for all lifts at his own cost when any one of the following conditions exists:-

- (a) Where undue stretching occurs after the initial stretch has taken place;
- (b) There is corrosion / rust;
- (c) There is birdcaging of strands;
- (d) The rope has been damaged; and
- (e) The criteria as stated in EMSD's Code of Practice for Lift Works and Escalator Works – 2012 Edition - Clause 5.4.7 (d) Replacement of Suspension Ropes

The Contractor shall replace all wire ropes, including but not limited to suspension ropes, governor ropes, compensation ropes and hoisting ropes, for those lifts listed in and according to the tentative rope replacement program as attached in **Appendix 13** hereof. The Contractor shall formulate the replacement schedule and obtain approval of the Employer or his representatives before the commencement of work. The cost of all works required is deemed included in the itemized rates given in the **Schedule SR1 of Schedule of Rates**.

The wire ropes shall be constructed to comply with BS EN 12385-1:2002, EN 12385-5:2002 and ISO 4344:2004 EDTN2. The wire ropes shall be manufactured to ISO 9001 by a reputable manufacturer. The Contractor shall submit relevant test certificates and test reports issued by Laboratories accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) or other recognized accredited laboratories for approval prior to ordering.

In addition, the Contractor shall, as and when instructed by the Employer, repair or replace at his own cost any part/component/equipment of a lift/escalator, which is proved to be defective by reason of the Contractor's negligence, inadequate servicing and maintenance, poor performance and workmanship, use of incorrect materials or materials of inferior quality. Claim in any form whatsoever made by the Contractor for such repair work or replacement of parts / component / equipment will not be accepted by the Employer.

The Employer shall reserve the right to order suspension of any work at any stage, should the work be found of poor workmanship / quality, using inferior and/or incorrect materials, applying incorrect and/or improper method for the execution of the work and/or with any other action that may cause damage to the lift/escalator, its equipment and/or personnel. The Contractor shall immediately rectify such work at his expenses after being instructed by the Employer.

At the Employer's discretion, Employer's representatives or other designated personnel will carry out inspection on any lift or escalator at any time, in particular after major alteration / major component replacement or periodic testing and examination or upon receipt of complaint. The Contractor shall dispatch adequate and sufficient technical staff on Site for the smooth progress of inspection upon request. All cost incurred is deemed included in the itemized rates in the **Schedule SR1 of Schedule of Rates**.

2.2 Site Co-ordination

The Contractor shall co-operate and co-ordinate with the Employer's personnel, venue management, Fire Services Department, power company, the public authorities, and other contractors engaged in work on Site for the smooth progress and satisfactory completion of his Works. The Contractor shall continually keep the Employer and his representative informed of all matters involving coordination for the smooth progress of the work and shall inform and obtain approval from the Employer on the execution of the work, method of execution, programme of execution.

Should the contractor be in doubt in properly handling or making good any builder's work involved, he should coordinate with the Employer and obtain approval on his proposal before the builder's work is executed.

The Contractor shall, at all times, unless otherwise prior approval is obtained from the appropriate parties, ensure that the execution of the work shall not interfere with the normal operation of the venues. The Contractor shall be responsible for any claims arising from his default.

The Contractor shall be deemed to have allowed the cost for the above cooperation and coordination work in the **Schedule SR1 of Schedule of Rates** for this contract and to have taken account of such work in assessing the labour force required for the Works.

2.3 On-call Maintenance and Emergency Repair Services

2.3.1 Contractor's Emergency Call Centre

The Contractor shall operate a Contractor's Emergency Call Centre (CECC). The CECC should be operated 24hrs a day throughout the whole year even in adverse weather condition. The CECC shall be equipped with at least two telephone lines and two facsimile machines with separate telephone lines, manned by sufficient number of technical and clerical staff as agreed by the Employer to meet the following performance requirements : -

- (a) To confirm within 15 minutes the appointment date and time for execution of fault/emergency call requests received from the Employer or his representatives.
- (b) To monitor the progress of the fault/emergency call attendance and to report to the Employer or his representatives on any unattended appointment (including missed appointment and inaccessibility to the premises) and the subsequent remedial measure no later than 30 minutes of the originally scheduled appointment time.
- (c) To report the completion of fault/emergency call attendance within 1 day.
- (d) To feedback and resolve on any complaint received on the fault/emergency call within 30 minutes of notification from the Employer or his representatives.
- (e) The Contractor shall also supply and install permanent labels made of plastic material or stainless steel indicating the Contractor's name and emergency telephone numbers for each lift/escalator or a group of lift/escalator in the main landing within one month after commencement of contract or immediately upon any changes.
- (f) To notify incidents to the Director of Electrical and Mechanical Services by specified forms as required by the Lifts and Escalators Ordinance, Cap. 618.

2.3.2 Fault Call Service

- (a) A 24 hour, 7 day per week, 365 (366 when leap years occur) days per year call-out and repair service is to be in force throughout the duration of the Contract.
- (b) All calls to the Contractor's emergency services are to be responded to promptly and the Contractor is to be on site and report to the Employer's Representative following the fault call procedures.
- (c) An emergency service is to be manned and available 24 hours a day, 7 days a week, 365 days per year (366 when a leap year occurs) throughout the year including Sundays and general holidays, rainstorm warning and typhoon periods.
- (d) Response Time

The Contractor shall respond to the Company's call for service and arrive the site:

- within 30 minutes in case of lift trap; and
 - within 60 minutes in case of non-lift trap.
- (e) Where a fault call is notified to the Contractor after 23:30 hrs and no "trapping of personnel or dangerous condition" is involved by agreement and at the absolute discretion of the Employer's Representative attendance may be deferred until work commences at 08:00 hrs the next day, at which time it must be promptly attended to.
 - (f) After receiving instructions from the Employer or his representative, either verbal or written, all faulty systems should be restored to its normal condition within one day or as the date agreed by the Employer.
 - (g) Should the Contractor fail to respond promptly within the specified period, the Contractor shall immediately contact the Employer or his representative and provide sufficient justification for his incapability to comply with the requirement of response.
 - (h) For any serious lift or escalator incident including the death or injury of a person, the Contractor shall immediately contact the Employer or his representative and refer to Particular Specification Clause 1.11 for the reporting procedures.
 - (i) For outlying islands where land transport is not available, the time limit set above shall be counted from the time when public transport or Employer's transport facility is available, whichever is earlier.
 - (j) If a failure occurs in the emergency devices of the lift, i.e. alarm, intercom system, emergency lighting system and ventilation fan of the lift car, the Contractor should take immediate action to repair. The Contractor shall send staff to step up monitoring the operation of the lift if immediate repair of the emergency devices cannot be arranged. The Contractor shall send staff to attend to the failure of the emergency devices within 1 hour upon being notified. If the affected emergency devices cannot be reinstated within 24 hours, the Contractor should notify the Director of Electrical and Mechanical Services by using **Form LE9**, and in parallel make copies to the Employer and any other party as directed by the Employer for record.

- (k) If the lift/escalator is beyond emergency repair, the contractor is required to make safe the lift/escalator and install a suitable notice indicating “Out of Service” at a prominent position and inform the Employer and any other party as directed by the Employer.
- (l) If the Contractor could not complete the rectification works within the specified period, the Contractor shall submit a written report, explaining for the non-compliance, to the Employer within one calendar day after such non-compliance is found.

2.3.3 Emergency Service Team(s)

The Contractor shall maintain Emergency Service Team(s) consisting of technically qualified, skilled and experienced technicians for prompt attendance of fault calls and to provide the On-call Maintenance and Emergency Repair Services (hereafter referred to as emergency services) at any time specified in Clause 2.3.2(c). The Contractor shall complete the attached **Appendix 1** to this Particular Specification for “Contractor’s Staff and Workshop Facilities” before the commencement of this Contract with names of team members, their contact telephone and pager number for 24-hour fault attendance.

Should any passenger is injured as reported, the Registered Lift/Escalator Engineer shall arrive at the site of incident within two (2) hours to conduct detail investigation of the incident and thoroughly examination of the lift/escalator.

The emergency services shall include overtime works, all mechanical, electrical, and electronic works, and inspection, testing, adjustment, commissioning and cleaning which are found necessary to reinstate the safe and satisfactory working condition and operation order of the lift/escalator as soon as possible and within 24 hours. The Contractor shall be required to substantiate the time required for repairing work should it be considered by the Employer to be unreasonably long.

During repair, and before resumption of services, notices indicating “Out of Service” shall be displayed prominently at all landings including that at the main entrance for the defective lift/escalator. For outdoor escalators which are out of service but without any site work being carried out, the display of “Out of Service” shall be replaced by a notice posted at a convenient location adjacent to the upper and lower landings indicating apology from the Contractor and with the anticipated date of resuming escalator service indicated, while the use of the escalators as an alternative stair by the public shall be maintained as long as it is safe and practicable.

- 2.3.4 The **Schedule SR1 of Schedule of Rates** shall have been fully inclusive to cover costs of providing the on-call and emergency service comprising transport, labour and materials, including cleaning materials, tools, inspection, measuring and testing equipment, and equipment, parts and/or components for the replacement of aged, deteriorated and/or defective items as and when necessary during the emergency services and they will not be separately paid.
- 2.3.5 In the case of happening of certain occurrences as detailed in Sections 40 and 70 of the Lifts and Escalators Ordinance, Cap. 618, the Contractor shall immediately notify the Employer and the Director of Electrical and Mechanical Services on behalf of the Employer in writing of the occurrence and, after an investigation carried out by the Contractor, submit reports to the Employer and to the Director of Electrical and Mechanical Services on behalf of the Employer, in accordance with the detail requirements

in the Ordinance.

2.3.6 Upon instructed by the Employer or his representatives, the Contractor shall submit to the Employer a detailed inspection, service and repair report within 48 hours of receipt of fault call. The report shall at least include the following information: -

- (a) Date/time of receipt of fault call.
- (b) Date/time of arrival of Emergency Service Team to the site of incident.
- (c) Date/time of reinstatement of safe and satisfactory working condition and operation order of the Lift/escalator.
- (d) Causes of fault/alarm.
- (e) List/details of emergency service being carried out including repairs and/or replacement works.
- (f) Follow-up action if required, due to off-site repair works.
- (g) Tentative time schedules for completion of off-site repair works and all other necessary works.
- (h) Photo records
- (i) Description of the fault.
- (j) Fault symptoms
- (k) Remedial action taken
- (l) Preventive measure
- (m) Location

For all major incidents that the Employer or his representatives consider necessary, the Contractor shall be required to submit major incident reports of details equivalent to a fault call report within 48 hours.

2.3.7 For monitoring the performance on attending fault calls, the Contractor shall submit to the Employer a monthly report by electronic means together with a signed hard copy as shown on the **Appendix 2** hereof on fault calls in the first week of each following month. The computer format of the monthly report shall be submitted to the Employer for approval and monthly report shall include the following information: -

- (a) No. of fault calls received for each lift/escalator of each location.
- (b) No. of fault calls in (a) attended within 30 minutes as specified in Clause 2.3.2(d) of the Particular Specification.
- (c) No. of fault calls in (a) attended within one hour as specified in Clause 2.3.2(d) of the Particular Specification.
- (d) No. of fault in (a) rectified within 24 hours as specified in Clause 2.3.2(f) of the

Particular Specification.

- (e) No. of faults in (a) rectified within 1, 3, 7, 14 or over 14 working days.
- (f) Number of breakdown and downtime in the month.
- (g) Number of fault calls that the Contractor fails to respond on time.
- (h) Mean time to respond to a call.
- (i) Other details as and when required by the Employer or his representatives.

2.4 Performance Target on Maintenance Service

2.4.1 The Contractor shall submit records of the following service performance and corresponding Performance Indicator (PI) reports with detail calculation to the Employer in the first week of the following month.

(a) Service Availability:-

- (i) Total number of hours of system breakdown, including individual component breakdown, due to all reasons other than scheduled maintenance works;
- (ii) Number of maintenance service breakdown;
- (iii) Time duration of system interruption for planned maintenance; and
- (iv) Reasons causing system breakdown.

The performance target shall monitor the availability of lift/escalator service to the critical premises. The “Service Availability” shall be evaluated as follows:-

$$1 - \frac{\text{Total downtime of lift(s)/escalator(s) in (min.)}}{\text{Total operating time (min.)}} \times 100\%$$

Where

- ◆ *Total downtime – Total down times (min.) i.e, Total loss of operating hours of each lift/escalator counted for all lift/escalator failure, “System Withheld”, from all lifts/escalators in the premise during the concerned period*
- ◆ *Total operating time – Total operating time (min) counted for the sum of total normal operation of all lifts/escalators in the premise during the concerned period, in one-month time.*

(b) Response Time to Fault Calls:-

- (i) Service response time duration (in minutes) from the fault call received

(Employer or his representative whichever is earlier) to arrival on site of incident;

(ii) Total number of system fault for each call;

(c) Fault Call Rectification :-

(i) Fault rectification time on each system fault;

(ii) Total time taken for the repair right from fault call received until fault rectified for each system breakdown (urgent or non-urgent fault repair);

(iii) Details of contingent measures taken or alternatives made, if applicable.

2.4.2 The monthly system “Service Availability” shall be maintained and should not be lower than 99%.

2.4.3 The Contractor shall deliver full maintenance and repair services in accordance with the performance targets of lifts as specified in **Appendix 12** to this Particular Specification.

2.5 Regular Inspection and Servicing

All planned maintenance works should be well planned, coordinated, equipped with sufficient staff and organized to the satisfaction of the Employer and his representatives. All cost for all works required is deemed included in the itemized rates in the **Schedule SR1 of Schedule of Rates**.

2.5.1 Scope of Inspection and Servicing

The Contractor shall dispatch competent and specially trained technicians to each lift/escalator regularly according to the Maintenance Schedules specified in **Appendix 3 to Appendix 5** in terms of frequency and scope of work, to keep the lifts/escalators in a clean, smooth, quiet and safe operating condition. The Contractor shall also check and clean the drain holes in the lift and escalator pits at the immediate point of exit from the said pits to ensure the drain provided is free from blockage due to any kind. The Contractor shall also clear all the debris and wastewater in the pit during their inspection. The Contractor shall report to the Employer for emergency repair any flooding happened in the pit during their maintenance work and attend the repair to be carried out by others.

The Contractor shall report any defects with the building fabric, cladding or the lighting/power socket, ventilation/air-conditioning in machine room, etc. and report to the Employer for any necessary repair by others which is to be attended by the Contractor. The Contractor shall provide attendance to such repair work by others at no extra cost if such works are to be carried out during regular maintenance visits. However, if such work is required to be carried out outside regular maintenance visits, or during regular maintenance visits but has extra standby time incurred, the Contractor could be paid separately when agreed by the Employer.

The Contractor shall be responsible for carrying out all the repair and replacement work of the lift car CCTV system, air conditioning units, ventilation fans, condensate drain pump and, and lighting/power socket inside the lift and escalator pit, lighting in the lift shaft and any sump pumping system in the lift and escalator pit at no extra cost to the Employer.

The Contractor shall carry out the **monthly routine maintenance works** for air conditioning and ventilation installations as per requirement stated in **Appendix 15**.

2.5.2 Monthly Service Report and Quarterly Inspection Report

The Contractor shall submit to the Employer Monthly Service Report on the routine maintenance services delivered to each lift and escalator in the calendar month and Quarterly Inspection Report on the conditions of each lift and escalator. Specimens of these reports are attached in **Appendix 6 to Appendix 11** to this Particular Specification. Each Quarterly Inspection Report shall:-

- (a) be submitted within one calendar month after the date of the last inspection to which the report relates;
- (b) be a typed report duly signed by a Registered Lift Engineer in case of lift or by a Registered Escalator Engineer in case of escalator;
- (c) state the condition of the major safety components as detailed in the Appendixes and detail any unsatisfactory items or any wrong method of operation by the users, or any improvement work which may be considered necessary;
- (d) state clearly dates of replacement for major parts such as travelling cable, suspension wire rope, motor, driving chain, handrail, etc. in the reporting quarter;
- (e) indicate the date of last safety test and date of last full load safety test for lifts; and
- (f) certify that the lift/escalator is or is not in a satisfactory and serviceable condition.

The Contractor shall issue an interim report should any routine inspection reveal any items of unsatisfactory nature not included in the last preceding quarterly inspection report. Such interim report shall be submitted within seven working days of such inspection.

2.6 Periodic Examination, Testing and Maintenance

2.6.1 General

The Contractor shall carry out periodic examination, testing and maintenance for every lift and escalator in accordance with those stipulated in the provisions of the latest edition, at the time of implementation of the Contract, of the following:-

- (a) Lifts and Escalators Ordinance, Cap. 618;
- (b) Code of Practice for Lift Works and Escalator Works;
- (c) Any other regulation or by-law of any local or other duly constituted authority, which may be applicable to such tests,

and in the presence of Registered Lift or Escalator Engineer and/or witnessed by the Employer. The Registered Lift or Escalator Engineer shall submit the duly signed **Form LE11** or **Form LE12** and obtain the use permits from the Director of Electrical and Mechanical Services annually. The use permit shall be displayed in a holder of the respective lift or escalator by the Contractor.

2.6.2 Submission of Programme

Within 6 weeks of the commencement of the Contract and the first week of each subsequent contract year thereafter, the Contractor shall submit his tentative programme covering the periodic examination and testing for all lifts and escalators for the whole contract year. The programme shall be formulated so as to minimize interruption of lift or escalator services and the inconvenience to the users.

The inspection and maintenance programme shall be formulated so as to minimize the length of the shutdown period of lift and escalator and to achieve an even workload throughout the year. All inspection, testing and servicing work shall be completed well before the expiry date of the current examination reports/certificates. The approval of this programme shall be obtained before the commencement of work on site and no deviation from the approved programme is allowed without the prior approval of the Employer or his representatives.

2.6.3 Lift Inspection

All the lifts and their associated equipment or machinery shall be thoroughly examined by the Registered Lift Engineer at intervals not exceeding the period specified in subsection (b) for periodic examination of lifts or subsection (c) for examination of lifts with load, within the last 2 months of an examination period of the lifts, the next examination period of the lifts and all their associated equipment or machinery are to:-

- (a) begin on the date immediately after the date of expiry of the preceding examination period; and
- (b) end on the 1st anniversary of the date of expiry of that preceding examination period for periodic examination of lifts; or
- (c) end on the 5th anniversary of the date of expiry of that preceding examination period for examination of lifts with load.

For lifts with homing down facilities or assigned as firemen's lifts, these functions shall also be tested in an interval not exceeding 12 months.

2.6.4 Escalator Inspection

All the escalators and its associated equipment or machinery shall be thoroughly examined by the Registered Escalator Engineer at intervals not exceeding 6 months within the last 2 months of an examination period of the escalator, the next examination period of the escalators and all their associated equipment or machinery are the period of 6 months beginning on the date immediately after the date of expiry of the preceding examination period.

For outdoor escalators provided with high level switch or travelling direction indicating panel, the operation of the same shall also be tested at an interval not exceeding 6 months. When the outdoor escalators are equipped with remote alarm transmission system that supplied, installed and maintained by others, the Contractor shall provide attendance at no extra cost during maintenance visit(s) by the Contractor.

2.6.5 Safety Equipment

Safety equipment means, in relation to a lift, the safety gear and governor or other device by which it is operated, the emergency signals and where provided, the stop switch, and all machinery and equipment connected therewith. And in relation to an escalator, means the safety gear and the governor or other device by which it is operated, the broken step chain device, the switches provided to stop the escalator in an emergency and where fitted, the broken drive chain device, and all machinery and equipment connected therewith.

2.6.6 Use Permit

On completion of the periodic examination of lift or escalator, the Contractor shall apply for a use permit for the lift or escalator in the accordance with the Lift and Escalators Ordinance, Cap 618. The Contractor shall arrange a registered lift or escalator engineer to complete and sign the safety certificate and all necessary documents as stipulated in the Code of Practice for Lift Works and Escalator Works, where applicable for the application to the Director of Electrical and Mechanical Services. The Contractor shall make copies of the full set of application of the use permit to the Employer, and any other party as directed by Employer or his representatives for record. The lift or escalator must not continue to be used or operated unless the use permit has been renewed.

The Contractor shall replace the existing use permit with the new use permit and securely fix in the specific holder of use permit of the lift/escalator on site. The Contractor shall provide photos in electronic format to the Employer's Representative to confirm the new use permit for each lift/escalator is securely fixed in place. The replacement of use permit and their return to the management agent or lift/escalator owner or other party as designated by the Employer's Representative is the responsibility of the Contractor under the Contract.

If the use permit is lost, destroyed, defaced or damaged, the Contractor shall inform the Employer and Employer's Representative immediately. The Contractor shall make application to the Director of Electrical and Mechanical Services for the issuance of a duplicate permit to replace the original permit. The Contractor shall also make copies of such application to the Employer, the lift/escalator owner, and any other party as directed by Employer or his representatives for record.

The Contractor shall make arrangements for the periodic examination of the lift and escalator and all its associated equipment or machinery within the last 2 months of the validity period of its existing use permit. Examination of lifts with load shall also make early arrangement similar to the periodic examination. The Contractor shall ensure that a new use permit is issued before the expiry of the existing use permit.

2.6.7 Report on Equipment Beyond Economic Repair

For any lift/escalator considered beyond economic repair by the Contractor, the Contractor shall submit report certifying the equipment is beyond economic repair and the report shall include full description of extent of damage, cost for repair and the estimated remaining life if implementing repair. Upon the instruction of the Employer or his representative, the Contractor shall also examine any lift/escalator to identify whether it is beyond economic repair and shall submit report including a statement on whether the examined lift/escalator is beyond economic repair together with the above mentioned description.

2.7 Alteration, Addition and Improvement Works (AA & I Works)

2.7.1 General

During the Contract Period, the Contractor may be required to carry out some of the alteration, addition and/or improvement works for a lift/escalator to suit the updated/revised operational requirements.

The Employer will inform the Contractor the extent of alteration, addition and/or improvement work for the lift/escalator and the Contractor shall prepare a quotation for the work. The quotation shall be submitted for the Employer's assessment within the time frame as instructed, complete with detailed itemized breakdown for works and technical information for materials/parts/components offered, fully priced and with sufficient and satisfactory documentary evidence in support of the quotation.

The Employer reserves the right to reject the Contractor's offer if considered unreasonable due to high "star rates" for non-scheduled items and/or inferior quality of materials/parts/component offered, and to put the said Works out for tender and employ another registered lift/escalator contractor to undertake the Works, even though such works will be connected to the system under the maintenance of the Contractor. When such Works are completed to the satisfaction of the Employer, the Contractor shall be obliged to take the Works into maintenance along with the original system. A site instruction will be issued by the Employer for this purpose.

2.7.2 Resumption Permit

The Contractor shall arrange examination of the lift or escalator by a registered lifts/escalators engineer after the completion of a major alteration so as to confirm that part affected by the major alteration is in safe working order. The Contractor shall apply and obtain the Resumption Permit for the lift or escalator from the Director of Electrical and Mechanical Services and make copies to the Employer, and any other party as directed by the Employer or his representatives for record. The lift or escalator must not continue to be used and operated unless a resumption permit has been obtained. The Contractor shall provide every means such as isolating the power supply and provide suspension notice at the main landing to prevent inadvertent opening of lift or escalator by other persons.

2.7.3 Nature of Works

For all AA & I Works, the Contractor shall include all costs for labour and materials to supply and install, test and commission the part of system that has been altered or added by him as well as maintaining the completed work half year at no extra cost, or until 6 months after the expiry of Contract Period, whichever period is shorter. The Contractor shall be required to carry out all necessary works in the Defect Liability Period as specified in the current edition of the General Specification for Lift, Escalator and Passenger Conveyor Installations in Government Buildings of the Hong Kong Special Administrative Region. The quality of material used and workmanship shall be in compliance with the same Specification.

Upon completion of the Works, the Contractor shall submit a maintenance plan for the above Works to the Employer or his representative for approval and shall provide two copies of equipment operation and maintenance manual(s) together with relevant drawing(s) where applicable to the Employer for record purpose.

Where the extent of Alteration, Addition or Improvement Works is such that it affects the original classification of the lift/escalator, the Contractor shall initiate such actions and submit the relevant forms to the Director of Electrical and Mechanical Services as required by the Lifts and Escalators Ordinance, Cap. 618. The costs on the preparation of submission are deemed included in the quotation.

The Contractor shall also follow the requirement of Code of Practice for Energy Efficiency of Building Services Installation if the major alteration works involve the addition or replacement of motor drive and mechanical drive, of a lift, an escalator, or a passenger conveyor. The Contractor shall apply and obtain a Form of Compliance from a Registered Energy Assessor and within 2 months after completion of these addition or replacement works. The Registered Energy Assessor as appointed by the Contractor shall make copy of the Form of Compliance to the Engineer, the owner, and any other party as directed by Engineer or his representative for record.

3 SCHEDULE OF RATES

3.1 General

The Contractor shall enter in the Form of Tender the Price for all Works required by this Contract.

Unless otherwise explicitly stated to be excluded, free maintenance periods of 6 months for the Works done are deemed to be included in every Works Order and the Contractor shall allow the same when Price and Unit Rates.

Apart from those specified elsewhere in the specification, the Schedule of Rates shall also include the following costs:

- (a) All incident labour, cartage, tools and equipment for cleaning, inspection, repair, re-conditioning, dismantling, reassembling, testing, setting, adjustment and painting.
- (b) Accurately calibrated instruments required for the works stipulated in this Contract.

- (c) Collecting and transporting to site any required material and spare parts supplied by the Employer from Government Stores.
- (d) All consumable materials such as waste cotton, grease, paint, etc.
- (e) All necessary documentation, preparation and submission of records, inspection and test reports.
- (f) All incident labour, transportation, tools and equipment, etc. for the on call (emergency or fault) maintenance and repair services.
- (g) Provision of temporary replacement parts, components or equipment such that suitable illumination level can be provided while the fittings are on maintenance/repair work exceeding one day overnight.
- (h) Executing work at any position, location and height unless otherwise stated.
- (i) All superintendence, establishment charges, overhead expenses and profit.
- (j) Labeling, testing and commissioning including submission of test records and certificates.
- (k) Emergency attendance, checking and necessary adjustment, cleaning and cleansing, greasing, oiling, make good and touch up painting, clearing of obstruction, supply of consumable items such as lubricant, cleansing material, non-asbestos packing, fireman's switch glass plates, fuses and indication lamp bulbs, labeling including its rectification and the like, reporting to the Employer or his representative immediately any abnormal operation of the installation or equipment found during the inspection and testing.

3.2 Rate for Items Not Mentioned in the Schedule of Rates

Generally in the absence of any specific allowance, the rates for all cost of Works shall be deemed to have been absorbed and/or included in the itemized rates in the Schedule of Rates. However, subject to the discretion of the Employer or his representative, rates for such other items not specifically mentioned in the Schedules might be separately charged which should be calculated as follows:-

- (a) Proportional Rates - Whenever there are analogous items in the Schedule for articles, material or workmanship of similar character, then at rates equal to, or in direct proportion to, the scheduled rate.
- (b) Agreed Rates - When articles, material or workmanship are so dissimilar as not to allow direct proportional assessment as laid down in (a) above, then an "Agreed Rate" shall be calculated.

The rate shall be calculated on the basis of the net labour wages paid by the Contractor for the work, and the net cost of material to the Contractor after allowing for waste where necessary and deducting all discounts, with an overall addition of 15% (fifteen per cent) to cover all overhead charges and profit. Only the formal quotation from the original manufacturer or authorized distributor would be considered for such substantiation of material cost.

- (c) An "Agreed Rate" can only be applied to one Works Order.

- (d) “Star Rates” shall be calculated in the same way as “Agreed Rates”, “Star Rates” can be applied to any Works Order issued under the contract. A sample form for approval of non-scheduled rate is given in **Appendix 18** hereof.
- (e) Rates shall, where possible, be determined before the execution of the order. If a rate should depend upon particulars that cannot be ascertained before the order is put in hand, the procedure by which the actual rate is to be arrived at when the necessary particulars are known shall be previously settled.

4 PAYMENT

In general, payment shall be made monthly in arrears to the Contractor provided that the requisite work has been carried out satisfactorily and the required inspection reports duly submitted to the satisfaction of the Employer or his representative.

Upon receipt of the invoice, the Employer’s Representative must pay the Contractor within 30 day’s. This is subject to the invoicing being both correct and free from anomalies.

4.1 Payment Claims

- (a) The Contractor shall be responsible to prepare and submit at his cost payment claims for all works with forms and procedures specified in Clause 4.2 and Clause 4.3 below or other forms and procedures specified by the Engineer from time to time.
- (b) Invoices must show the period, the lump sum for the maintenance work and the breakdown of all work for which the payment is being claimed for.
- (c) All non-maintenance invoices must be presented on a per lift basis and a fully itemized list of the work being charged for will be incorporated into the invoice.
- (d) If invoices are presented which do not fully comply with the format as detailed, they will be rejected. All invoices must portray the identity number of the lift involved and premises location.
- (e) No payment must be made by the Employer’s Representative for any unauthorised service performed by the Contractor.

4.2 Claim for Maintenance Service

For the routine comprehensive maintenance services, the Contractor is required to submit payment claim with one original of invoice and one copy of Claim Form for each submission. The Contractor is also required to submit a summary of Service Report with copies of Monthly Service Report and Quarterly Inspection Report with the Signature of the Employer’s Representative to support their invoices by the end of each month. Those previous submitted Service Reports or outstanding Service Reports within the month shall be clearly indicated in the summary of Service Report in details. The monthly invoice value will be one twelfth of the total annual value for all items under maintenance services. The payment will be calculated in pro-rata for the lift/escalator that has an incomplete monthly maintenance service due to the date of its inclusion in the Contract by the following formula.

Payment for incomplete month : -

$$(\text{Number of days under maintenance service}) \times (\text{Monthly maintenance Rate}) \times \frac{12}{365}$$

The Employer reserves the right to withhold payment in part or in whole if the Contractor cannot submit evidence and proof to substantiate that the maintenance services was indeed satisfactorily executed and accomplished.

The Employer may arrange other payment arrangements, such as to have all routine monthly payment for the jobs to be listed by means of a computer system and paid to the Contractor automatically. The Contractor shall check and verify the payment lists on receipt of them and shall inform the Employer of any error within 14 days so that adjustment of the payment can be made accordingly.

4.3 Deduction of Maintenance Fee for Suspension of Service

For any repetitive breakdown or any lift or escalator which cannot be returned to normal services by the Contractor for a period exceeding 15 calendar days¹, deduction in the monthly maintenance fee will be applied in accordance with the following details :-

<u>Reason for not be returned to Normal Service</u>	<u>% Deduction of Monthly Maintenance Fee</u>
1) Employer’s written instruction, including alteration works	50
2) Reasons beyond the Contractor’s control (e.g. misuse, vandalism, fire, etc.)	50
3) Breakdowns, repair, lack of spare parts, which arisen from normal wear and tear	100 (Minimum one month)

The actual deduction will be directly proportional to the number of days after the 15 calendar day period. The Contractor will be required to settle the actual period of shutdown with the Employer on individual cases and deduct the appropriate amount from the monthly bills accordingly before submission. The payment for an incomplete month will be calculated similar to the formula given in Clause 4.2 above.

The Contractor shall, during such out of normal service period, carry out minimum maintenance work to keep the entire lift and escalator in such a condition that it could be put back into normal operation at a later date. However, should the Contractor be unable to carry out part or whole of the required minimum maintenance work under the circumstances in 1) & 2) mentioned above and with reasons beyond their control, he shall be entitled to claim for a re-conditioning cost which shall be agreed upon by both parties on a job by job basis. The re-conditioning work shall include all labour, material, spare parts and test necessary for safe resumption of services.

¹ The use of “15 calendar days” is indicative only. The lift/escalator owner shall consider their operation need to determine the number of calendar days that will cause the deduction in the monthly maintenance fee.

In addition to the criteria on deduction of monthly maintenance fee set above, for any breakdown of any lift or escalator over the following frequency, deduction in the monthly maintenance fee will be applied in accordance with the following details :-

<u>Frequency of breakdown</u>	<u>% Deduction of Monthly Maintenance Fee</u>
1) Breakdown, due to system fault(s), of the same lift or escalator over ____ times monthly	50
2) Breakdown, due to system fault(s), of the same lift or escalator over ____ times monthly	100

4.4 Payment for Works Covered by Works Orders

For Works ordered under cover by a Works Order, the Contractor shall submit payment claim with 2 copies of invoice, similar to that for routine maintenance, and shall attach copies of original supplier's invoice where appropriate. The Employer may require the Contractor to submit measurements of quantities for materials/equipment used, etc. for checking and verification of the claimed payment. The invoices shall clearly indicate the Works Order number.

Additional works must be separately invoiced and these must be submitted monthly. Where such works are covered by the Schedules of Rates the schedules must be strictly adhered to in preparing the invoice.

Appendix 1 to Particular Specification

Contract No. _____

Contractor's Staff and Workshop Facilities

A. Details of Contractor's Staff

A1. Management Team

Name of Staff	Post	Mobile Phone No.	Fax. No.	24 Hours Emergency Hotline No.

A2. Maintenance Service Team

Name of Staff	Post	Mobile Phone No.	Fax. No.	24 Hours Emergency Hotline No.

A3. Emergency Service Team

Name of Staff	Post	Mobile Phone No.	Fax. No.	24 Hours Emergency Hotline No.

B. Details of Contractor's Workshop Facilities

Type of Accommodation	Usable Floor Area (m ²)	Address	Telephone No.	Fax. No.
Office 1				
Office 2				
Workshop 1				
Workshop 2				
Godown/Store 1				
Godown/Store 2				
Emergency Depot 1				
Emergency Depot 2				

Note:

Items in the Schedule should be extended and additional sheet(s) should be used if more information is required to be entered.

Appendix 2 to Particular Specification

Monthly Fault Call and Emergency Repair Report

Contractor Name: _____

Date : _____

Contract No.: _____

Division: _____

Region: _____

Mandatory										Optional			
Job Ref.	Call Received Date (dd.mm.yyyy)	Call Received Time (hh24:mi)	Arrival Date (dd.mm.yyyy)	Arrival Time (hh24:mi)	Works Completion Date (dd.mm.yyyy)	Works Completion Time (hh24:mi)	Activity Code (P01 / P02 / C01 / C02)	Activity Description (40 chars)	Priority (U/N)	Damage Code Group	Damage Code	Cause Code Group	Cause Code

LEGEND:

Activity Code

P01 = Preventive Maintenance

P02 = Overhaul Maintenance

C01 = Corrective Maintenance for fault without trapped passenger

C02 = Corrective Maintenance for fault with trapped passenger

Priority

U = Urgent

N = Non-urgent

Appendix 3 to Particular Specification

Maintenance Schedule for Electric Passenger, Goods and Service Lifts

Schedule No.	Description of Job
Weekly Maintenance	
1.	<p>(a) Top up lift machine gearbox and lubricate bearings.</p> <p>(b) Check brake for correct mechanical action. Ensure linings and drums are free from oil or grease. <i>See Note 1</i></p> <p>(c) Clean overspeed governor and lubricate.</p> <p>(d) Inspect bearings of drums, sheaves and pulleys. Lubricate.</p> <p>(e) Inspect motor/generator/exciter commutators and sliprings operating under working conditions and stationary. Lubricate bearings.</p> <p>(f) Clean, inspect and adjust controller contacts, interlocks and dashpots. Lubricate. Observe and adjust operation sequence and timing of contactors.</p> <p>(g) Clean floor selector, check action and adjust. Lubricate drive gear.</p> <p>(h) Top up counterweight guide shoes lubricators.</p> <p>(i) Clean up lift well as necessary. Clean pit. Inspect condition of lift well enclosure.</p> <p>(j) Clean guides and lubricate where applicable.</p> <p>(k) Check limit switches, direction switches and their operating devices. Ensure rollers and spindles are free to rotate. Lubricate.</p> <p>(l) Inspect car exterior and clean car top. Top up car guide shoe lubricators. Inspect tensioning devices for correct adjustment. Clean and inspect door operating gear and check for oil leaks. Lubricate.</p> <p>(m) Check door locks for safe operation. Ensure rollers and spindles are free to rotate. Lubricate. <i>See Note No. 2.</i></p> <p>(n) Check that car and landing doors operate freely and bottom tracks are clear of debris.</p> <p>(o) Ride in car, observe and record irregularities in starting, stopping and general running.</p> <p>(p) Check for correct operation: - Car controls, car door switches, door re-opening device, emergency stop, alarm bell and intercom system. Inspect condition of car interior and floor covering. Observe levelling accuracy.</p> <p>(q) Test operation of landing buttons, indicators, and fireman switch.</p>

Schedule No.	Description of Job
Monthly Service	
2.	<p>(a) Inspect lift machine gearing and bearings. Ensure keys and fixing bolts are secure.</p> <p>(b) Inspect brake coupling and linings for wear. See that keys and fixing bolts are secure. Check that brake release gear and hand winding wheel are readily available.</p> <p>(c) Check drums, sheaves and pulleys for visible cracks, ensure keys and fixing bolts are secure. Inspect bearings and sheave grooves. <i>See Note No. 3.</i></p> <p>(d) Check condition of wire ropes. Ensure suspension ropes are evenly tensioned. <i>See Note No. 4.</i></p> <p>(e) Inspect overspeed governor for wear. Ensure keys and fixing bolts are secure.</p> <p>(f) Extract dust from interiors of motors and generators. Inspect bearings, ensure fixing bolts are secure.</p> <p>(g) Inspect floor selector bearings. Check connections and flexes. Inspect driving rope, tape or chain for wear and correct tension.</p> <p>(h) Inspect and operate by hand the slack rope switch, safety-gear switch, broken tape or rope switch and overspeed governor switch.</p> <p>(i) Inspect guides for wear and ensure fixings are secure.</p> <p>(j) Check counterweight clearances for rope stretch. Inspect rope equaliser. Ensure main tie bolts are secure. Inspect guide shoes for wear and “float”. Ensure filler weights are properly positioned and secure. Check safety-gear for guide clearance and free movement.</p> <p>(k) Open, clean and inspect limit switches, direction switches. Inspect fixed ramps and inductor plates.</p> <p>(l) Ensure spring buffers are secure. Clean oil buffers and top up. Check for oil leaks.</p> <p>(m) Inspect conditions of landing and car sill nosings and check car clearance. Inspect lock beaks, door rollers and spindles for wear. Inspect door inter-connecting wires or chains for wear and correct tension.</p> <p>(n) Ensure car frame bolts are secure. Check guide shoes for minimum “float”. Ensure car body is secure in frame. Check safety-gear for guide clearance and free movement. Check tension of safety rope. Inspect door operating mechanism for wear and ensure driving sprockets, keys and fixing bolts are secure. Ensure that the “pick-up” between car and landing doors is correctly aligned. <i>See Note 5.</i></p> <p>(o) Open, clean and inspect car controls, floor switches, door switches. Check action of emergency opening and movable floor. Inspect car lighting.</p> <p>(p) Inspect travelling cables and their anchorages.</p>

Schedule No.	Description of Job
	(q) Open, clean and inspect landing button boxes and ensure that they and any indicator boxes are securely fixed.
Three-Monthly Service	
3.	(a) Open, clean and inspect landing door locks. <i>See Notes No. 6.</i> (b) Carry out electrical load test on emergency lighting, batteries and battery charger for a period of 1 hour.
Other Maintenance Services	
4.	(a) Renew wire rope. <i>See Note No. 4.</i> (b) Test safety gear on no load. Frequency: (i) After major repair (ii) Every year (c) Test overspeed governors and safety gear on full load. Frequency: (i) After major repair (ii) Every 5 year

Notes to Appendix 3

The attention of all personnel engaged on lift maintenance services is drawn to the need for the proper observance of all safety rules, regulations and statutory requirements. It is essential that all apparatuses are rendered, and kept, safe during servicing operations. Protective clothing and other safeguards shall be worn or used by the maintenance personnel. All defects in tools, steps, ladders and other items are to be reported immediately and the equipment shall not be used until the fault is rectified.

The lubricants used shall be of the brands and grades recommended by the component manufacturer or their approved equivalents. Ensure adequate lubrication, but avoid excessive.

Spillage shall be wiped off. Oily rags or waste shall be removed.

The following items are general guidance for the proper maintenance of the lift installation. These items are by no means exhaustive. The maintenance personnel shall follow all instructions and guideline as recommended by their relevant manufacturer.

1. A brake operating solenoid shall be adjusted to the shortest stroke that will expand the brake bands equally with minimum clearance, consistent with free running of the brake drum.
2. It is essential that a lift will not operate with a car or landing door open, and that landing doors are kept locked except when a car is standing at that floor.
3. (a) Wear on rope grooves of sheaves shall not be such as to cause rope slip.

(b) All grooves must be equal, i.e. all ropes shall sit to the same depth.

Sheave grooves shall only be allowed to be re-cut once to satisfy the above conditions.

4. Wire ropes should be renewed when any one of the following conditions exists :
 - (a) The visible number of broken wires in any length of eight diameters exceeds 10% of the total number of wires in the rope.
 - (b) Where undue stretching occurs after the initial stretch has taken place.
 - (c) There is corrosion/rust.
 - (d) There is birdcaging of strands.
 - (e) The rope has been damaged.
 - (f) The rope is more than six years old.

Wire ropes are well lubricated during manufacture and have a certain amount of reservoir lubricant. If no lubricant is apparent in the interstices between wires, apply a thin coating of a dressing recommended by the

rope maker, or approved equivalent, i.e. an acid-free grade material such as petroleum jelly.

5. 5. Where a power limiting device is incorporated in the door operating mechanism, it shall, when a door is obstructed, clear of the safety edge, operate at a force not exceeding 150N.
6. Door locks are to be examined internally at least once every six months (except if fitted with transparent covers, permitting observation of working parts and no defects are apparent). The opening up and internal examinations are to be carried out in sequence and spread evenly over the period.

Remarks : The word “Door” in the Schedule means any sliding or hinged part which gives access to the car or liftwell enclosure.

Appendix 4 to Particular Specification

Maintenance Schedule for Hydraulic Lifts

Schedule No.	Description of Job
Weekly Maintenance	
1.	<p>(a) Inspect ram and cylinder, adjust gland, lubricate.</p> <p>(b) Check control, pilot and levelling valves and adjust. Lubricate.</p> <p>(c) Inspect control rope and chain, rope gripper and terminal stops.</p> <p>(d) Inspect bearings of sheaves and pulleys. Lubricate.</p> <p>(e) Clean, inspect and adjust controller contacts, interlocks and dashpots. Lubricate. Observe and adjust operation sequence and timing of contactors.</p> <p>(f) Clean floor selector, check action and adjust. Lubricate drive gear.</p> <p>(g) Clean guides. Top up lubricators.</p> <p>(h) Clean up lift well as necessary. Clean pit. Inspect condition of lift well enclosure.</p> <p>(i) Check levelling switches. Ensure rollers are free to rotate.</p> <p>(j) Check that doors operate freely and bottom tracks are clear of debris.</p> <p>(k) Inspect car exterior and clean car top.</p> <p>(l) Observe and record irregularities in starting, running and stopping of the lift.</p> <p>(m) Check for correct operation: - car controls, car door switch, alarm bell and intercom system. Inspect condition of car interior and floor covering.</p> <p>(n) Check action of landing buttons and indicators.</p> <p>(o) Check door locks for safe operation. Ensure rollers and spindle are free to rotate. Lubricate. Check that emergency door release key is readily available.</p> <p><i>See Note 1</i></p>
Monthly Service	
2.	<p>(a) Ensure that keys and fixing bolts of sheaves and pulleys are secure and check for visible cracks and corrosion. Inspect bearings and rope grooves.</p> <p>(b) Check condition of wire ropes. Ensure suspension ropes/chains are evenly tensioned. Clean and lubricate. <i>See Note No. 2.</i></p> <p>(c) Ensure ram head bolts and cylinder fixing bolts are secure. Check for visible signs of corrosion. Check action of air release cock and anti-syphon valve.</p>

Schedule No.	Description of Job
	<p>(d) Ensure pipework, joints, bolts and fixings are visibly sound and free from corrosion and leaks. Check stop valve. Inspect oil reservoir and pump.</p> <p>(e) Open, clean and inspect: control valves, pilot and levelling valves. Check overrun and cut-off devices. Check over-load relief valve.</p> <p>(f) Inspect pump motor when operating and stationary.</p> <p>(g) Inspect floor selector bearings. Check connection and flexes. Inspect driving rope, tape or chain for wear and correct tension.</p> <p>(h) Inspect safety gear switch and operate it by hand.</p> <p>(i) Check counterweight clearances for rope stretch. Ensure main tie-bolts and filler weights are secure. Check guide shoes for wear and 'float'.</p> <p>(j) Inspect 'Jigger' counterweight assembly for visible signs of corrosion. Ensure fixings are secure. Check guide shoes for wear and 'float'.</p> <p>(k) Inspect travelling cables and their anchorages.</p> <p>(l) Inspect guides for wear and ensure fixings are secure. Check spring buffers.</p> <p>(m) Inspect condition of landing and car sill nosings and check car clearances. Inspect lock beaks, door rollers and spindles for wear.</p> <p>(n) Ensure car frame bolts are secure. Check guide shoes for wear and 'float'. Ensure car body is secure in frame. Check safety gear for running clearance and free movement. Check tension of safety rope.</p> <p>(o) Open, clean and inspect car controls, door switches and levelling switches. Check operation of emergency opening. Inspect car lighting.</p> <p>(p) Open, clean and inspect landing button boxes and ensure that they and any separate indicator boxes are securely fixed.</p> <p>(q) Open, clean and inspect landing door locks. <i>See Note No. 3.</i></p>
Three-Monthly Service	
3.	(a) Carry out electrical load test on emergency lighting, batteries and battery charger for a period of 1 hour.
Other Maintenance Services	
4.	<p>(a) Renew wire rope. <i>See Note No. 3.</i></p> <p>(b) Test safety gear on no load. Frequency: (i) After major repair (ii) Every year</p>

Schedule No.	Description of Job
	(c) Test overspeed governors and safety gear on full load. Frequency: (i) After major repair (ii) Every 5 year

Notes to Appendix 4

The attention of all personnel engaged on lift maintenance services is drawn to the need for the proper observance of all safety rules, regulations and statutory requirements. It is essential that all apparatuses are rendered, and kept safe during servicing operations. Protective clothing and other safeguards shall be worn or used by the maintenance personnel. All defects in tools, steps, ladders and other items are to be reported immediately and the equipment shall not be used until the fault is rectified.

The lubricants used shall be of the brands and grades recommended by the component manufacturer or their approved equivalents. Ensure adequate lubrication, but avoid excessive. Spillage shall be wiped off. Oily rags or waste shall be removed.

The following items are general guidance for the proper maintenance of the lift installation. These items are by no means exhaustive. The maintenance personnel shall follow all instructions and guidelines as recommended by their relevant manufacturer.

1. It is essential that a lift will not operate with a car or landing door open, and that landing doors are kept locked except when a car is standing at that floor.
2. Wire ropes should be renewed when any of the following conditions apply
 - (a) The visible number of broken wires in any length of eight diameters exceeds 10 % of the total number of wires in the rope.
 - (b) Where undue stretching occurs after the initial stretch has taken place.
 - (c) There is corrosion/rust.
 - (d) There is birdcaging of strands.
 - (e) The rope has been damaged.
 - (f) The rope is more than six years old.

Wire ropes are well lubricated during manufacture and have a certain amount of reservoir lubricant. If no lubricant is apparent in the interstices between wires, apply a thin coating of a dressing recommended by the rope maker, or approved equivalent, i.e. an acid-free grade material such as petroleum jelly.

3. Door locks are to be examined internally at least once every six months (except if fitted with transparent covers, permitting observation of working parts and no defects are apparent). The opening up and internal examinations are to be carried out in sequence and spread evenly over the period.

Remarks: The word "Door" in the Schedule means any sliding or hinged part which gives access to the car or liftwell enclosure.

Appendix 5 to Particular Specification

Maintenance Schedule for Escalators and Passenger Conveyors

Schedule No.	Description of Job
Weekly Maintenance	
1.	<ul style="list-style-type: none"> (a) Check the clearance between the steps/pallets and the skirt guard to ensure adequate clearance. (b) Inspect bearings of drums, pulleys and all moving parts. Lubricate. (c) Clean up the machine room as necessary. (d) Ride in escalator/passenger conveyor, observe whether the operation is normal. Check whether there is undue vibration. (e) Check for correct operation of all safety devices; i.e. skirt guard safety devices, handrail inlet safety switches, emergency stop buttons, step/pallets chain safety switches, step/pallets safety switches, step/pallets roller switches driving chain safety switches, comb safety switches, etc.
Bi-Weekly Maintenance	
2.	<ul style="list-style-type: none"> (a) Check for correct operation of all safety devices; i.e. skirt guard safety devices, handrail inlet safety switches, emergency stop buttons, step/pallets chain safety switches, step/pallets safety switches, step/pallets roller switches driving chain safety switches, comb safety switches, etc.
Monthly Maintenance	
3.	<ul style="list-style-type: none"> (a) Check and inspect the main drive system. (b) Check and lubricate the step/pallets rollers. (c) Check and inspect the handrail to ensure adequate tightness and proper functioning. Clean the inside surface of the handrail. (d) Check and inspect the control box. (e) Check and record the braking efficiency.
Three-Monthly Maintenance	
4.	<ul style="list-style-type: none"> (a) Check the landing comb for completeness. (b) Check the lubricating pump to see if there is enough lubricating oil. Check the quality of lubricating oil. (c) Check and clean the motor gear box. (d) Check the lighting system.
Bi-yearly Maintenance	
5.	<ul style="list-style-type: none"> (a) Remove all steps/pallets and clean the rail.

Schedule No.	Description of Job
	(b) Check for correct operation of the current overload and safety switches and non-reversal switches.
Five-yearly Maintenance	
6.	(a) Replace all the lubricating oil.

Notes to Appendix 5

The attention of all personnel engaged on escalators/passenger conveyors maintenance services is drawn to the need for the proper observance of all safety rules, regulations and statutory requirements. It is essential that all apparatuses are rendered, and kept safe during servicing operations. Protective clothing and other safeguards shall be worn or used by the maintenance personnel. All defects in tools, steps, ladders and other items are to be reported immediately and the equipment shall not be used until the fault is rectified.

The lubricants used shall be of the brands and grades recommended by the component manufacturer or their approved equivalents. Ensure adequate lubrication, but avoid excessive. Spillage shall be wiped off. Oily rags or waste shall be removed.

Appendix 6 to Particular Specification

Monthly Services Report for Electric Passenger, Goods and Services Lift

Lift Inspection Report for: (Month/Year)

Maintenance Contract No.:

Location: **Lift No.**

Contractor's Name:

Item	Description of Service	N/A	Weekly					Remarks
			Date	Date	Date	Date	Date	
Properly Done								
1	(a)	Top up lift machine gearbox and lubricate bearings.						
	(b)	Check brake for correct mechanical action. Ensure linings and drums are free from oil or grease.						
	(c)	Clean overspeed governor and lubricate.						
	(d)	Inspect bearings of drums, sheaves and pulleys. Lubricate.						
	(e)	Inspect motor/ generator / exciter commutators and sliprings operating under working conditions and stationary. Lubricate bearings.						
	(f)	Clean, inspect and adjust controller contacts, interlocks and dashpots. Lubricate. Observe and adjust operation sequence and timing of contactors.						
	(g)	Clean floor selector, check action and adjust. Lubricate drive gear.						
	(h)	Top up counterweight guide shoes lubrications.						
	(i)	Clean up lift well as necessary. Clean pit. Inspect condition of lift well enclosure.						
	(j)	Clean guides and lubricate where applicable.						
	(k)	Check limit switches, direction switches and their operating devices. Ensure rollers and spindles are free to rotate.						
	(l)	Inspect car exterior and clean car top. Top up car guide shoe lubricators. Inspect tensioning devices for correct adjustment. Clean and inspect door operating gear and check for oil leaks. Lubricate.						
	(m)	Check door locks for safe operation. Ensure rollers and spindles are free to rotate. Lubricate.						
	(n)	Check that car and landing doors operate freely and bottom tracks are clear of debris.						
	(o)	Ride in car, observe and record irregularities in starting, stopping and general running.						
	(p)	Check for correct operation: - Car controls, car door switches, door re-opening device, emergency stop, alarm bell and intercom system. Inspect condition of car interior and floor covering. Observe leveling accuracy.						
	(q)	Test operation of landing button, indicators and fireman switch.						
Item	Description of Service	N/A	Monthly					Remarks
2	(a)	Inspect lift machine gearing and bearings. Ensure keys and fixing bolts are secure.						
	(b)	Inspect brake coupling and linings for wear. See that keys and fixing bolts are secure. Check that brake release gear and hand winding wheel are readily available.						

Sample Contract for Procurement of Comprehensive Lift/Escalator Maintenance Services

Item	Description of Service	N/A	Monthly	Remarks	
2	(c)	Check drums, sheaves and pulleys for visible cracks, ensure keys and fixing bolts are secure. Inspect bearings and sheave grooves.			
	(d)	Check condition of wire ropes. Ensure suspension ropes are evenly tensioned.			
	(e)	Inspect overspeed governor for wear. Ensure keys and fixing bolts are secure.			
	(f)	Extract dust from interiors of motors and generators. Inspect bearings, ensure fixing bolts are secure.			
	(g)	Inspect floor selector bearings. Check connections and flexes. Inspect driving rope, tape or chain for wear and correct tension.			
	(h)	Inspect and operate by hand the slack rope witch, safety-gear switch, broken tape or rope switch and overspeed governor switch.			
	(i)	Inspect guides for wear and ensure fixings are secure.			
	(j)	Check counterweight clearances for rope stretch. Inspect rope equalizer. Ensure main tie bolts are secure. Inspect guide shoes for wear and "float". Ensure filler weights are properly positioned and secure. Check safety-gear for guide clearance and free movement.			
	(k)	Open, clean, inspect limit switches, direction switches. Inspect fixed ramps and inductor plates.			
	(l)	Ensure spring buffers are secure. Clean oil buffers and top up. Check for oil leaks.			
	(m)	Inspect conditions of landing and car sill nosings and check car clearance. Inspect lock beaks, door rollers, spindles for wear. Inspect door inter-connecting wires or chains for wear and correct tension.			
	(n)	Ensure car frame bolts are secure. Check guide shoes for minimum "float". Ensure car body is secure in frame. Check safety-gear for guide clearance and free movement. Check tension of safety rope. Inspect door operating mechanism for wear and ensure driving sprockets, keys and fixing bolts are secure. Ensure that the "pick-up" between car and landing doors is correctly aligned.			
	(o)	Open, clean and inspect car controls, floor switches, door switches. Check action of emergency opening and movable floor. Inspect car lighting.			
	(p)	Inspect travelling cables and their anchorages.			
(q)	Open, clean and inspect landing button boxes and ensure that they and any indicator boxes are securely fixed.				

Item	Description of Service	N/A	Quarterly	Remarks
3	(a)	Open, clean and inspect landing door locks.		
	(b)	Carry out electrical load test on emergency lighting, batteries and battery charger for a period of 1 hour.		
	(c)	Inspect and operate by hand the ascending car overspeed protection device switch and rope break protection device.		

Signature:

Name of competent technician:

Staff Identification No.:

✓ tick whichever is applicable

Appendix 7 to Particular Specification

Monthly Services Report for Hydraulic Lift

Lift Inspection Report for: (Month/Year)

Maintenance Contract No.:

Location: **Lift No.**

Contractor's Name:

Item	Description of Service	N/A	Weekly					Remarks
			Date	Date	Date	Date	Date	
			Properly Done					
1	(a)	Inspect ram and cylinder, adjust gland, lubricate.						
	(b)	Check control, pilot and leveling valves and adjust. Lubricate.						
	(c)	Inspect control rope and chain, rope gripper and terminal stops.						
	(d)	Inspect bearings of sheaves and pulleys. Lubricate.						
	(e)	Clean, inspect and adjust controller contacts, interlocks and dashpots. Lubricate. Observe and adjust operation sequence and timing of contactors.						
	(f)	Clean floor selector, check action and adjust. Lubricate drive gear.						
	(g)	Clean guides. Top up lubricators.						
	(h)	Clean up lift well as necessary. Clean pit. Inspect condition of lift well enclosure.						
	(i)	Check levelling switches. Ensure rollers are free to rotate.						
	(j)	Check that doors operate freely and bottom tracks are clear of debris.						
	(k)	Inspect car exterior and clean car top.						
	(l)	Observe and record irregularities in starting, running and stopping of the lift						
	(m)	Check for correct operation :- car control, car door switch, alarm bell and intercom system. Inspect condition of car interior and floor covering.						
	(n)	Check action of landing buttons and indicators.						
	(o)	Check door locks for safe operation. Ensure rollers and spindle are free to rotate. Lubricate. Check that emergency door release key is readily available.						
Item	Description of Service	N/A	Monthly					Remarks
2	(a)	Ensure that keys and fixing bolts of sheaves and pulleys are secure and check for visible cracks and corrosion. Inspect bearings and rope grooves.						
	(b)	Check condition of wire ropes. Ensure suspension ropes / chains are evenly tensioned. Clean and lubricate.						
	(c)	Ensure ram head bolts and cylinder fixing bolts are secure. Check for visible signs of corrosion. Check action of air release cock and anti-syphonic valve.						
	(d)	Ensure pipework, joints, bolts and fixings are visibly sound and free from corrosion and leaks. Check stop valve. Inspect oil reservoir and pump.						

Sample Contract for Procurement of Comprehensive Lift/Escalator Maintenance Services

Item	Description of Service	N/A	Monthly	Remarks	
2	(e)	Open, clean and inspect: control valves, pilot and levelling valves. Check overrun and cut-off devices. Check over-load relief valve.			
	(f)	Inspect pump motor when operating and stationary.			
	(g)	Inspect floor selector bearings. Check connection and flexes. Inspect driving rope, tape or chain for wear and correct.			
	(h)	Inspect safety gear switch and operate it by hand.			
	(i)	Check counterweight clearances for rope stretch. Ensure main tie-bolts and filter weights are secure. Check guide shoes for wear and "float".			
	(j)	Inspect "Jigger" counterweight assembly for visible signs of corrosion. Ensure fixings are secure. Check guide shoes for wear and "float".			
	(k)	Inspect travelling cables and their anchorages.			
	(l)	Inspect guides for wear and ensure fixings are secure. Check spring buffers.			
	(m)	Inspect condition of landing and car sill nosings and check car clearance. Inspect lock beaks, door rollers, spindles for wear.			
	(n)	Ensure car frame bolts are secure. Check guide shoes for minimum "float". Ensure car body is secure in frame. Check safety-gear for guide clearance and free movement. Check tension of safety rope.			
	(o)	Open, clean and inspect car controls, door switches and levelling switches. Check operation of emergency opening. Inspect car lighting.			
	(p)	Open, clean and inspect landing button boxes and ensure that they and any separate indicator boxes are securely fixed.			
	(q)	Open, clean and inspect landing door locks.			

Item	Description of Service	N/A	Quarterly	Remarks
3	(a)	Carry out electrical load test on emergency lighting, batteries and battery charger for a period of 1 hour.		

Signature:					
Name of competent technician:					
Staff Identification No.:					

✓ tick whichever is applicable

Appendix 8 to Particular Specification

Monthly Services Report for Escalator

Escalators Inspection Report for: (Month/Year)

Maintenance Contract No.:

Location: Esc/PC No.

Contractor's Name:

Item	Description of Service	N/A	Weekly					Remarks
			Date	Date	Date	Date	Date	
			Properly Done					
1	(a)	Check the clearance between the steps/pallets/belts and the skirt guard to ensure adequate clearance.						
	(b)	Inspect bearings of drums, pulleys and all moving parts. Lubricate.						
	(c)	Clean down the machine room as necessary.						
	(d)	Ride in escalator/passenger conveyor, observe whether the operation is normal. Check whether there is undue vibration.						
			Bi-weekly					
	(e)	Check for correct operation of all safety devices; i.e. emergency stopping devices, broken step/pallet chain device, broken drive chain device, broken step/pallet device, broken handrail device, non-reverse device, comb obstruction device, skirting switches, handrail entry device, phase protection relay, overspeed governor, motor protection relay, etc.						
	(f)	Check for correct operation of emergency stop switch in machinery spaces.						
Item	Description of Service	N/A	Monthly					Remarks
2	(a)	Check and inspect the main drive system.						
	(b)	Check and lubricate the step/pallets rollers.						
	(c)	Check and inspect the handrail to ensure adequate tightness and proper functioning. Clean the inside surface to the handrail.						
	(d)	Check and inspect the control box.						
	(e)	Check and record the braking efficiency.						
	(f)	Check, inspect and test the remote monitoring system if provided.						
Item	Description of Service	N/A	Quarterly					Remarks
3	(a)	Check the landing comb for completeness.						
	(b)	Check the lubricating pump to see if there is enough lubricating oil. Check the quality of lubricating oil.						
	(c)	Check and clean the motor gear box.						
	(d)	Check the lighting system.						

Signature:	<input style="width: 100%; height: 20px;" type="text"/>
Name of competent technician:	<input style="width: 100%; height: 20px;" type="text"/>
Staff Identification No.:	<input style="width: 100%; height: 20px;" type="text"/>

✓ tick whichever is applicable

Appendix 9 to Particular Specification

Monthly Services Report for Stairlift

Stairlift Inspection Report for: (Month/Year)
Maintenance Contract No.:
Location: **Lift No.**
Contractor's Name:

Item	Description of Service	N/A	Weekly					Remarks
			Date	Date	Date	Date	Date	
			Properly Done					
1	(a)	Check the emergency stop button at platform carriage.						
	(b)	Check and inspect the final limited switches at the uppermost and lowest landings.						
	(c)	Inspect the security lock for folding and unfolding of the platform.						
	(d)	Check and inspect the electrical operation of folding and unfolding of the platform.						
	(e)	Check and inspect the manual operation of folding and unfolding of the platform.						
	(f)	Check and inspect the sequential operation of ramps.						
	(g)	Check and inspect the electrical and mechanical interlock of the ramps with drive system.						
	(h)	Check the operation of bi-directional pressure sensitive sensors.						
	(i)	Check and inspect the mechanical lock of foldable barrier arms.						
	(j)	Inspect the electro-mechanical brakes.						
	(k)	Inspect the manual release of electro-mechanical brake.						
	(l)	Check and inspect the audio-visual bystander alert device.						
	(m)	Check and inspect the guide rails.						
	(n)	Check the operation of "Platform Carriage" with constant pressure operated control buttons and key-operated switch.						
	(o)	Check the emergency stop button at operation call stations.						
	(p)	Check the "Power On" indicator on Operation Call Station.						
	(q)	Check the "Activation" indicator on Operation Call Station.						
	(r)	Check the "Fault Signal" indicator on Operation Call Station.						
	(s)	Check the "Position" indicator of platform carriage on Operation Call Station.						
(t)	Check the operation of "Operation Call Stations" with constant pressure operated control switches and key-operated switch.							
(u)	Check the emergency stop button at attendant control unit.							
(v)	Check the operation of "attendant Control Unit" with constant pressure operated control buttons and emergency stop button, key-operated switch.							
(w)	Check the emergency back-up power for emergency alarm devices.							
(x)	Ensure the alarm bell operates without main power.							
(y)	Check the batteries and automatic charger.							

Sample Contract for Procurement of Comprehensive Lift/Escalator Maintenance Services

Item	Description of Service	N/A	Monthly	Remarks
2	(a)	Check the main power switch.		
	(b)	Inspect the major relays in control panel.		
	(c)	Inspect and clean the electrical components in control panel.		
	(d)	Check the main power cable, earth bonding and wiring connections.		
	(e)	Inspect the platform carriage.		
	(f)	Inspect the guide shoes.		
	(g)	Inspect the safety gear and electrical switch.		
	(h)	Test the control key switches.		
	(i)	Test the platform control buttons.		
	(j)	Check the guide rail fixings and brackets.		
	(k)	Lubricate the guide rails.		
	(l)	Inspect the flexible cables and cable clips.		
	(m)	Inspect and test the final limit switches.		
	(n)	Check the suspension chain / ropes condition if provided.		
	(o)	Check the rack and pinion gear condition if provided.		
	(p)	Check the screw and nut gear condition if provided.		
	(q)	Check all labels, notice(s) and signage in proper condition.		

Signature:

Name of competent technician:

Staff Identification No.:

✓ tick whichever is applicable

Appendix 10 to Particular Specification

Quarterly Inspection Report for Lift

Quarterly Inspection Report for Lift: (Month/Year)

Maintenance Contract No.:

Location: **Lift No.**

Contractor's Name:

Type of Installation: Passenger Lift Hydraulic Lift Goods Lift Services Lift

Date of last periodic examination as per section 22 of the Lifts and Escalators Ordinance: _____ (Date)

Date of last examination with load as per section 23 of the Lifts and Escalators Ordinance: _____ (Date)

Details of Test:

- | | | | | | | |
|--|------|--------------------------|------|--------------------------|------|--------------------------|
| (a) Normal/emergency lift, batteries and battery charger | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (b) Emergency release equipment | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (c) Machine gear box | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (d) Brake system | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (e) Hoisting rope | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (f) Sheave and pulleys | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (g) Governor and rope | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (h) Levelling at each landing | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (i) Operation of ascending car overspeed protection device switch and rope break protection device | N/A | <input type="checkbox"/> | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> |
| (j) Car / Landing doors | | | | | | |
| - Safety edges | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Door lock | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Door operation | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Door sill | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Door gap clearance | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (k) Car interior | | | | | | |
| - Normal lighting | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Load test on emergency lighting, batteries and battery charger | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Ventilation fan | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Emergency alarm | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Intercom system | N/A | <input type="checkbox"/> | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> |
| - Overload indication | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Warning notice | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Tactile braille plate | N/A | <input type="checkbox"/> | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> |
| (l) Main landing | | | | | | |
| - Firemen's switch | N/A | <input type="checkbox"/> | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> |
| - Emergency alarm bell | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Lift service call notice board | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (m) Hydraulic Lift | | | | | | |
| - Ram and cylinder | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Control, pilot and levelling valves and adjust. Lubricate. | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Control rope and chain, rope gripper and terminal stops | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Rollers and spindle | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| - Pump Motor | Good | <input type="checkbox"/> | Fair | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| (n) Measured Rate Speed: _____ m/s | | | | | | |

- (o) Measured Lift Door Opening Time (for lift door at terminal floor only): _____ sec
- (p) Measured Lift Door Closing Time (for lift door at terminal floor only): _____ sec.
- (q) Others: _____

Major Repairs:

- Remarks:** (1) The lift is in a satisfactory and serviceable condition: Yes No
- (2) Others:

Checked by: **Date:**

Certified by:	<input type="text"/>	<input type="text"/>	<input type="text"/>	Date: <input type="text"/>
	Name	RLE No.	Signature	

✓ tick whichever is applicable

Appendix 11 to Particular Specification

Quarterly Inspection Report for Escalator

Quarterly Inspection Report for Escalator: (Month/Year)

Maintenance Contract No.:

Location: **Escalator No.**

Contractor's Name:

Date of last periodic examination as per section 53 of the Lifts and Escalators Ordinance: _____ (Date)

Details of Test:

(a) Emergency stop button		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(b) Power failure protective device		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(c) Auxiliary brake system	N/A <input type="checkbox"/>	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(d) Reversing safety device				
(e) Step chain		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(f) Handrail		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(g) Handrail driving system		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(h) Hand winding device		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(i) Alarm bell		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(j) Comb plate		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(k) Balustrade skirting		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(l) Dress guard	N/A <input type="checkbox"/>	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(m) Step chain slackening / breakage safety device		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(n) Handrail slackening / breakage safety device	N/A <input type="checkbox"/>	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(o) Handrail entry guard safety device		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(p) Comb obstruction safety device		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(q) Overspeed protective device		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(r) Skirting switch		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(s) Footlight and steplight under landing				
(t) Guard at ceiling intersection	N/A <input type="checkbox"/>	Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(u) Instruction plate & warning notice		Good <input type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>
(r) Others:	_____			

Major Repairs:

Remarks: (1) The lift is in a satisfactory and serviceable condition: Yes No

(2) Others:

Checked by: **Date:**

Certified by: **Date:**
Name REE No. Signature

✓ tick whichever is applicable

Appendix 12 to Particular Specification

Performance Targets of Lifts and Escalators

Service Items	Performance Targets
1. Service Availability of Lifts and Escalators	>99%
2. Response Time to Fault Call	
(a) cases with trapped passengers	<30 minutes ^(Note 1)
(b) stoppages without trapped passenger	<1 hour ^(Note 1)
3. Fault Rectification	
(a) urgent fault ^(Note 2)	< 24 hours
(b) non-urgent fault ^(Note 2)	< 7 days

Note 1: For the performance targets on response time to fault call, the compliance level is 95% for all cases.

Note 2: Urgent fault calls refers to system or equipment failure bearing safety implication or seriously affecting the operation of the whole venue or substantial part of the venue. Faults other than urgent ones are treated as non-urgent.

Appendix 13 to Particular Specification

Tentative Rope Replacement Program

<u>Item</u>	<u>Description of Lift Installation</u>	<u>Rope Replacement Date*</u>
1.		Within 12 Months from the Commencement Date of the Contract
2.		
3.		
4.		Within 13 – 24 Months of the Contract Period
5.		
6.		
7.		Within 25 – 36 Months of the Contract Period
8.		
9.		
10.		

*Note: The date as shown in **Appendix 13** of this Particular Specification is indicative only. Contractor can propose the dates of wire rope replacement subject to the actual condition of the ropes. However, the wire ropes shall be replaced within the contractual period.

Appendix 14 to Particular Specification

Maintenance Services

1 MAINTENANCE SERVICE

- 1.1 A detailed Maintenance Schedule for each lift is to be sited in a position to be agreed, within the lift machine room for each unit. The schedule must be contained in a plastic or hard back cover and must reflect the frequency of maintenance operation of each item of equipment per lift and must be based on the outline schedule given within this document. The document must be prepared and submitted with the tender and it should be noted that no contract will be entered into until this document has the final approval of the Employer's Representative. On completion of each maintenance visit, the maintenance record card must be dated and signed by the Contractor's staff carrying out the work. Should any maintenance visits not be recorded as detailed appropriate credits against the contract value will be required.
- 1.2 Cleaning of all lift equipment and flooring in the machine rooms and pulley rooms (where applicable) and lift shaft equipment, structures and flooring must be undertaken so that all are kept clean at all times and free from rubbish and potentially inflammable material. It is essential that all build up of oil and fluff on shaft guide rails and car guide shoes and fluff on ropes, rope guards and car panels are removed immediately when evident during service visits.
- 1.3 The Contractor must provide all cleaning materials and lubricants necessary to carry out the maintenance of each lift installation. Please note that all lubricants and hydraulic fluids must be of the type specified by the original lift manufacturer's specifications.
- 1.4 The Contractor must provide all necessary tools and equipment required to facilitate the safe release of passengers, i.e. door release keys, brake release keys, hand winding wheels, etc. and must be readily available at all times within the machine room. This equipment must be clearly identified and readily accessible and positioned on a purpose made tool board which is to be placed in each machine room.

2 "STANDARD MAINTENANCE SERVICE" REQUIREMENTS

The following sections describe Standard Maintenance Services including preventive maintenance and inspection services and schedules required of the Contractor:

- 2.1 **Inclusions:** Except as specifically excluded, Contractor shall be responsible for providing all services, materials, labor, supplies, tools and equipment necessary to:
 - (a) Maintain an inventory on site of all the commonly replaceable parts necessary to repair, clean, and service lift in cabinet provided by the Contractor.
 - (b) Maintain the lifts and associated equipment in a safe, clean, quiet and smooth-riding condition.
 - (c) Repair or replace any malfunctioning part. There shall be no exceptions for parts considered to be obsolete.
 - (d) Perform periodic examinations at the intervals specified for each lift in accordance with the

requirements of the Lifts and Escalator Ordinance, Cap. 618.

- (e) Perform all inspections and maintenance operations as specified and meet the requirements under the Code of Practice for Lift Works and Escalator Works (2012 Edition) (“**Works Code**”).
- (f) Perform all tests required by the Lifts and Escalator Ordinance, Cap. 618 and specified under the Works Code.
- (g) Ensure performance with respect to door operation, landing accuracy and rated speed complies with specifications and to meet the requirements under the Works Code.
- (h) Complete all repairs and corrections required by the periodic examination report and to meet the compliance date on the report. Contractor will be responsible for all re-examination fees for failure of initial annual examination due to contractor non-compliance.
- (i) Perform the correct adjustment, repair and or replacement, when conditions warrant, of all equipment, components and parts of the lift installations not specified in item 2.2 below, and to include all machine room and shaft lighting and power sockets and all two way communication installations.
- (j) Check all lamps installed throughout each lift installation, including indicator lamps, car lighting, motor room lighting and shaft lighting, etc. during every maintenance visit, and replace the defective lamps.

2.2 Exclusions: Contractor shall **not** be responsible for:

- (a) The decorative finishes (excluding lighting, intercom, car and landing indicators, call push buttons and key switches, etc.) within the car enclosure, car and landing entrances.
- (b) Provision of access to buried piping and buried cylinders on hydraulic lifts.
- (c) Vandalism or misuse of equipment by others which can be proven by the Contractor.
- (d) The incoming main supply cable to the main isolator and distribution board in machine room.
- (e) The costs of materials and labor for the installation of any new attachments or features.

2.3 Removal of Lifts/Escalators from Contract: In the event a building is vacant or unoccupied for a period of time or if a lift/escalator is replaced or remodeled (and subsequently covered under remodeler warranty) the Employer will, at its discretion, notify the Contractor to suspend or discontinue Standard Maintenance Service for that lift/escalator and may remove it from the Contract. In such cases, the annual Standard Maintenance Service rate shall be reduced proportionately to reflect the period of suspended or discontinued service. The Employer reserves the right to rebid Standard Maintenance Service for that lift/escalator upon completion of the remodeler warranty period.

2.4 Examinations, Notifications and Inspections

- (a) Contractor shall immediately notify the Employer's representative when any parts or components within the lift/escalator system may require repair, modification or replacement, or when any condition requires the attention of the Employer.
- (b) Should a failure to, or in, the lift/escalator system occur due to the failure of the Contractor to make such repair, modification or replacement, Contractors shall be liable for any and all costs incurred by the Employer to return the lift/escalator to the original safe operation condition.
- (c) Should a failure to or in the lift/escalator system occur because the Contractor did not notify the Employer, the Contractor shall be liable for any and all costs incurred by the Employer to return the lift/escalator to the original safe operating condition.
- (d) The Employer shall have the option to Contract with another contractor for service to a lift/escalator if Contractor is unable to repair the lift/escalator for any reason.
- (e) **Inspections:** If the level of the Contractor's performance is questioned by the Employer, a third party hired by the Employer, may be called in to inspect and to verify possible negligence on the part of the Contractor. If the alleged negligence is verified, the costs of such inspection and corrective action shall be borne by the Contractor.

3 "OTHER SERVICE" REQUIREMENTS

The following sections describe requirements of the Contractor for work performed under the Contract as Other Service, as distinguished from Standard Maintenance Service:

3.1 Other Service Work shall include, but not be limited to:

- (a) repairing, resetting, adjusting or replacing lift/escalator components or associated equipment necessary resulting from misuse, fire, water, theft, or vandalism.
- (b) upon Employer's request, be present at specific times to ensure proper operation of lifts/escalators during events.
- (c) upon Employer's request, repair or replace lift/escalator components excluded from Standard Maintenance Service in Section 2.
- (d) upon Employer's request, perform services to improve or upgrade lift/escalator components.
- (e) Contractor shall be paid for time spent on site by Contractor's employees performing Other Service work at the hourly rates established by the Star Rate.
- (f) Contractor shall be paid for parts and materials purchased by the Contractor to complete Other Service work at market prices as established by invoices. No mark up of prices by the Contractor shall be allowed.
- (g) When equipment rental has been approved in advance by the Employer, Contractor shall be paid for rental of equipment necessary to perform Other Service work at market prices as established by invoices, with an allowable mark up by the Contractor not to exceed 15%.

Contractor shall supply normal tools of the trade without cost to the Employer.

4 LIFT PERFORMANCE STANDARDS AND EVALUATION

- 4.1 **Door Performance:** In evaluating door performance, complete door opening and closing times shall be used. In addition, a determination that the doors open smoothly and close smoothly without slam shall also be required. Door closing pressures shall be maintained in conformance to existing codes. Photo electric door controls and other door reopen devices shall be maintained to operate as originally installed.
- 4.2 **Landing Performance:** Landing accuracy shall be plus or minus 10 mm, regardless of number of passengers, up to rated capacity.
- 4.3 **Rated Speed Performance:** Contractor shall maintain rated speed of lifts within +/- 5%.
- 4.4 **Evaluation:** Should the Employer find that the performance standards are not met and are not being maintained, the Employer shall notify the Contractor of such Contract performance failure and give written notification.

Appendix 15 to Particular Specification

Preventive Maintenance Requirements for Air-conditioning and Ventilation Installations

The Contractor shall carry out the preventive maintenance works including but not limited to those described below to ensure efficient & effective operation of plant. In particular, the Contractor shall include any other works necessary for the safe and reliable performance of the air-conditioning installations in line with the manufacturers' recommendations in operations & maintenance manuals and good trade practices. Such works should be recommended to the Employer or his representative for his acceptance at no extra cost to the Employer. The Contractor shall make reference to the installation scope(s), requirement(s), and description(s) of the air-conditioning installations and equipment as mentioned or specified in the General Specification for Air-conditioning, Refrigeration, Ventilation and Central Monitoring & Control System Installation in Government Buildings of The Hong Kong Special Administrative Region, latest Edition (Volume I & II), to carry out the preventive maintenance works. The Contractor shall maintain the availability of the A/C installations and equipment at not less than 99% each month as calculated with the formula specified in Clause 2.4.1 of this Specification.

1 General Routines

To ensure the plant rooms and the associated equipment in safe, clean, and well-maintained conditions. These include :

- (i) To log the operating parameter in the log sheet
- (ii) To log in the log book all the maintenance activities relating to the routine maintenance of the installations
- (iii) To start up, shut down and adjust the period of operation of the air conditioning installations as required and directed by the Employer or his representatives
- (iv) To conduct routine checks on the installations to see if there are signs for misalignments, excessive vibration, overheating, leakage, blockages, under-cooling, and any abnormal equipment operations, and to locate faults, defects, and mal-functioning of equipment, and rectify them as necessary or instructed
- (v) To carry out cleaning service to ensure that the equipment including the air louver are in clean and tidy condition
- (vi) To carry out testing as required and as directed by the Employer or his representatives.
- (vii) To investigate and report on the major equipment breakdowns or accident
- (viii) To record any other data and information as required

The Employer or his representatives may order additional maintenance frequency on ad hoc basis. For maintenance works in monthly and on ad hoc basis, the Contractor shall also follow the instruction(s) of the Employer or his representatives to fulfill the maintenance requirements specified in the following clauses.

2 Particular Requirements for Split Type Air-conditioners and Window Type Air-conditioners

(a) Monthly Routines and Ad Hoc Basis

- (i) Inspect each package units, report the condition of each unit, and carry out the maintenance works as listed below.
- (ii) Clean the air filter(s).
- (iii) Clean the condenser/cooling coils if necessary or instructed.
- (iv) Clean and check the condensate drain pan and drain pipe to prevent to choking and flooding.
- (v) Clean the supply and return air grilles/diffusers.
- (vi) Grease the fans/motors bearings.
- (vii) Adjust the fan belts and replace if required or instructed.
- (viii) Check the conditions of wiring and inspect the conditions of starter, contactors, fuses/MCBs, on/off switch, spur unit etc. Replace if required or instructed.
- (ix) Check for excessive noise and vibration.
- (x) Oil and grease the compressors and check for lubricating condition and oil level.
- (xi) Check for sign of refrigerant leakage around the unit and repair such leakage, if occurred
- (xii) Examine the conditions of joints, stop valves, covers and seals for leaks and grease the moving parts.
- (xiii) Check and record the reading of operation parameter such as refrigerant, running ammeter and replace the equipment if they are found defective.

3 Particular Requirements for Ventilation Installation

(a) Monthly Routines and Ad Hoc Basis

- (i) Check each ventilation installation, report the conditions of each system, and carry out the maintenance works as listed below.
- (ii) Inspect the condition of filters, fresh/supply/exhaust air louvres/ grilles. Clean them as required or instructed.
- (iii) Grease the fans and motors bearing as required or instructed.
- (iv) Clean the fan blades and fan cabinets.
- (v) Check for any sign of corrosion on metal parts. Work to bare metal and repaint with approved paints.
- (vi) Check for loose wires and re-fix.

- (vii) Check for condition of control relays, starters, contactors, fuses etc. and replace as required or instructed.
- (viii) Clean the electrical panels.

Appendix 16 to Particular Specification

Sample Format of Monthly Maintenance Checklist for Air Conditioning and Ventilation Installations

Lift Contractor : _____

Contract No. : _____

Date : _____

Location : _____

Equipment : _____

Maintenance Services Check List for Air Conditioning Installations

(i)	Clean the air filter(s)	Properly Done										
(ii)	Clean the condenser/cooling coils	Properly Done										
(iii)	Clean and check the condensate drain pan and pipe	Properly Done										
(iv)	Clean the supply and return air grilles/diffusers	Properly Done										
(v)	Grease the fans/motors bearings	Properly Done										
(vi)	Adjust the fan belts and replace	Properly Done										
(vii)	Check the conditions of wiring & electrical parts	N/A	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Good	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Fair	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Poor	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>	
(viii)	Check for excessive noise and vibration	N/A	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Good	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Fair	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Poor	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>	
(ix)	Check for sign of refrigerant leakage	N/A	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Good	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Fair	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Poor	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>	
(x)	Examine the conditions of joints, stop valves, covers and seals for leaks and grease the moving parts	N/A	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Good	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Fair	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>		Poor	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>	

Maintenance Services Check List for Ventilation Installations

- (i) Condition of air filter(s) after cleaning Properly Done
- (ii) Condition of air louvre(s) / grille(s) after cleaning Properly Done
- (iii) Grease the fans and motors bearing as required or instructed Properly Done
- (iv) Clean the fan blades and fan cabinets Properly Done
- (v) Check for any sign of corrosion on metal parts. Work to bare metal and repaint with approved paints Properly Done
- (vi) Check for condition of electrical parts Properly Done

Tick whichever is applicable

Measured Records

General

Ambient Temp. _____ Lift Shaft Temp. _____

Air Conditioning Installations

Supply Air Temp. : _____ Relative Humidity : _____

Return Air Temp. : _____ CO2 Condensation : _____

Supply Air Flow Rate : _____ Running Current : _____

Ventilation Installations

Air Flow Rate : _____ Running Current : _____

Remarks

Serviceman's Signature

Serviceman's Name & Staff No.

Appendix 17 to Particular Specification

Equipment Schedule

Item No.	Client	Responsible SBU	Location	Lift No. Designated at Site	Type of Lift	Entrance (Stops)	Approx. Travel (m)	Capacity (kg)	Speed (m/s)	Control System	Drive System	Last Full-Load Safety Test Date (Approx.)	Installation Completion Date	Maintenance of Ventilation Fan in Lift Shaft	Maintenance of Air Conditioning Units	Rope Replacement Require	Brand
1				L1	PASSENGER	13		680	1.00	SIMPLEX	AC-2			N	N	Y	

EXAMPLE

Appendix 18 to Particular Specification

SAMPLE FORM FOR APPROVAL OF NON-SCHEDULED RATE

Contractor's name :

Ref. No. _____

NON-SCHEDULED RATE FOR APPROVAL	AGREE	STAR	
Contract No. : _____	W.O. No. : _____		
District Code : _____	Date of Issue : _____		
Title of Works : _____			
Description of Works	Quantity	Unit	Unit Rate Claimed
I have checked and considered the above non-scheduled rate being fair and reasonable			
_____		_____	
(Project Engineer)		Date	
The above non-scheduled rate is approved.			
Item No. _____			
_____		_____	
(Senior Engineer)		Date	

To be submitted in duplicate and direct to Project Engineer.

CONTRACT NO.: []

FORM OF TENDER

Annual/Biennial/Triennial* Term Contract for the Comprehensive Maintenance and Repair of Lifts and Escalators at []

NOTES:

- (1) The Appendix forms part of the Contract.
- (2) If a tender is a sole proprietorship or a partnership, the names and residential address(es) of the sole proprietor or all partners should be given in the spaces provided below.
- (3) In all cases, the tenderer must give the number and date of the business registration certificate here:-

Number:

Expiry Date:

To: Employer
[Address]

1. Having examined the Contract Area, and examined the General and Special Conditions of Contract (hereinafter referred to as 'the said Conditions'), Specifications and Schedule of Rates for the execution of the above-named Works, I/we offer to provide such articles and to perform such services for the maintenance and repair of such works as may from time to time be demanded and in conformity with the said Conditions, Specifications and Schedule of Rates for the sum of Hong Kong Dollars _____ (HK\$ _____) for a period of thirty-six (36) months.

2. I/We agree to abide by this Tender for the period of ninety (90) days from the date fixed for receiving the same and it is to remain binding upon me/us and may be accepted at any time before the expiration of that period.

3. Unless and until a formal Agreement is prepared and executed this Tender, together with the written acceptance thereof by the Employer subject to the provisions of clause 2 hereof will constitute a binding Contract between us.

4. I/We understand that the Employer reserves the right to negotiate with any tenderer about the term of the offer and is not bound to accept any tender irrespective of whether the tender is with the highest overall marks.

SignatureName (Blocks) in the capacity of duly authorized to sign tenders for and on behalf of §

Trading in Hong Kong under the style of @

Appendix 18 to Particular Specification

SAMPLE FORM FOR APPROVAL OF NON-SCHEDULED RATE

Contractor's name :

Ref. No. _____

NON-SCHEDULED RATE FOR APPROVAL	AGREE	STAR	
Contract No. : _____	W.O. No. : _____		
District Code : _____	Date of Issue : _____		
Title of Works : _____			
Description of Works	Quantity	Unit	Unit Rate Claimed
I have checked and considered the above non-scheduled rate being fair and reasonable _____ Date (Project Engineer)			
The above non-scheduled rate is approved. Item No. _____ _____ Date (Senior Engineer)			

To be submitted in duplicate and direct to Project Engineer.

Schedule of Rates

General Conditions of Schedule of Rates

A. General

The Schedule of Rates shall be that as described in the Clause 2 of the Specification Preliminaries.

Apart from those specified elsewhere in the specification, the Schedule of Rates shall also include the following costs:

- (a) All incident labour, cartage, tools and equipment for cleaning, inspection, repair, re-conditioning, dismantling, reassembling, testing, setting, adjustment and painting.
- (b) Accurately calibrated instruments required for the works stipulated in this Contract.
- (c) Collecting and transporting to site any required material and spare parts supplied by the Employer from Government Stores.
- (d) All consumable materials such as waste cotton, grease, paint, etc.
- (e) All necessary documentation, preparation and submission of records, inspection and test reports.
- (f) All incident labour, transportation, tools and equipment, etc. for the on call (emergency or fault) maintenance and repair services.
- (g) Provision of temporary replacement parts, components or equipment such that suitable illumination level can be provided while the fittings are on maintenance/repair work exceeding one day overnight.
- (h) Executing work at any position, location and height unless otherwise stated.
- (i) All superintendence, establishment charges, overhead expenses and profit.
- (j) Labeling, testing and commissioning including submission of test records and certificates.
- (k) Emergency attendance, checking and necessary adjustment, cleaning and cleansing, greasing, oiling, make good and touch up painting, clearing of obstruction, supply of consumable items such as lubricant, cleansing material, non-asbestos packing, fireman's switch glass plates, fuses and indication lamp bulbs, labeling including its rectification and the like, reporting to the Employer or his representative immediately any abnormal operation of the installation or equipment found during the inspection and testing.

B. Rate for Items Not Mentioned in the Schedule of Rates

Generally in the absence of any specific allowance, the rates for all cost of Works shall be deemed to have been absorbed and/or included in the itemized rates in the Schedule of Rates. However, subject to the discretion of the Employer or his representative, rates for such other items not specifically mentioned in the Schedules might be separately charged which should be calculated as follows:-

- (a) Agreed Rates - When articles, material or workmanship are so dissimilar as not to allow direct proportional assessment, then an “Agreed Rate” shall be calculated.

The rate shall be calculated on the basis of the net labour wages paid by the Contractor for the work, and the net cost of material to the Contractor after allowing for waste where necessary and deducting all discounts, with an overall addition of 15% (fifteen per cent) to cover all overhead charges and profit. Only the formal quotation from the original manufacturer or authorized distributor would be considered for such substantiation of material cost.

- (b) An “Agreed Rate” can only be applied to one Works Order.
- (c) “Star Rates” shall be calculated in the same way as “Agreed Rates”, "Star Rates" can be applied to any Works Order issued under the contract. A sample form for approval of non-scheduled rate is given in **Appendix 15** to Particular Specification.
- (d) Rates shall, where possible, be determined before the execution of the order. If a rate should depend upon particulars that cannot be ascertained before the order is put in hand, the procedure by which the actual rate is to be arrived at when the necessary particulars are known shall be previously settled.

C. Associated Documents

This Schedule of Rates together with its General Conditions and Special Conditions shall be read and used in conjunction with:-

- (a) The “Particular Specification” for this Contract.
- (b) The “Conditions of Contract” referred to in the Particular Specification.
- (c) The “General Specifications” referred to in the Particular Specification.
- (d) The “Equipment Schedule” and “Articles of Agreement” referred to in the Particular Specification.
- (e) The “Conditions of Tender” and “Form of Tender” issued with tender documents.

All Works shall be executed in accordance with the various conditions and instructions contained in the above-mentioned documents. Clauses and descriptions relating to workmanship, materials, plant and equipment, measurements and other matters contained in any of the above documents are not repeated in this schedule.

D. Schedule of Rates

The tenderer shall complete each cost item as indicated in schedules **SR1**. All unit rates entered by the tenderers shall be realistic and compatible with actual work performed. Failure to comply with this requirement may render the tender void or rejected, unless otherwise acceptable reasons are given.

E Rates to be Included

The rates given in the Schedule of Rates shall be deemed to have allowed for all the requirements stipulated in the documents listed in the above “Clause A”, including but not be limited to the followings:-

- (a) The complaint/breakdown/emergency call and repair work.
- (b) The unit rate as shown in schedule **SR1** shall cover the costs of wire rope replacement as stipulated in **Appendix 10** of Particular Specification.
- (c) The all-in comprehensive maintenance service shall comply strictly with the requirement as stipulated in Paragraph 2 of Particular Specification
- (d) Provision of all materials and cutting and waste on same, except where otherwise stated, including collection, conveyance, delivery, stacking and storage of same and provision of storage accommodation.
- (e) Provision of all builder's work and labour associated with the operation and maintenance duties.
- (f) Provision of all tools, plant, watching, site security and safety measures, and worksheds.
- (g) Provision, erection, maintenance, dismantling and clearing away of all scaffolding, ladders, cradles, platforms and similar items necessary for the execution of the work.
- (h) Provision of all labour and materials including fuses and indicating lamp bulbs, components and consumable parts and materials etc. for the proper call attendance, servicing and comprehensive maintenance, repair and/or replacement for the Installation.
- (i) Submission of programmes, plant log, breakdown/fault call reports, test certificates, inspection and investigation reports etc.
- (j) Clearing away debris and surplus materials, and cleaning the Works and adjacent sites on completion of each Variation Order/and Works Order as issued by the Employer.
- (k) Provision of insurance policies required by the Contract.
- (l) All superintendence, establishment charges, overhead expenses and profit.
- (m) Transportation, collection, delivery and installation of all items supplied by the Employer.
- (n) Any other expenses included in conforming with the Contract and Specifications.

Schedule SR1

Schedule of Unit Rates for Comprehensive Maintenance including Rope Replacement

Item	Description (Details to be referred to the Equipment Schedule in Appendix 14 of Particular Specification)	Unit	Comprehensive Maintenance Rate per Month in HK\$ (A)	Sub-total Amount for 36 Months* in HK\$ (36 x A)*
LIFT INSTALLATION				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
ESCALATOR INSTALLATION				
16.				
17.				
18.				
19.				
20.				
(Total of SR1 carried to Summary of Schedules)				

Note: (1) Please refer to Clause 2.1 of Particular Specification for Lift and Escalator Installation that the repairing cost arising from the all-in comprehensive maintenance work due to normal wear and tear or the like will not be separately paid, the repairing cost of which is deemed to have been included in the comprehensive maintenance rates given in the Schedule of Rates hereof.

* No. of month

Summary of Schedules

Schedule No.	Description	Amount (HK\$)
SR1	Comprehensive Maintenance including Rope Replacement and Similar Works	
Total amount (i.e. SR1) carried to Form of Tender:		

Declaration

I/We * hereby declare that my/ our * offer complies in full with the requirements as specified in the Specification.

Signature:

Name of Tenderer:

Address:

Tel No.:

Mobile No.:

Fax No.:

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** Delete wherever not applicable*