



public works  
& infrastructure

Department:  
Public Works and Infrastructure  
**REPUBLIC OF SOUTH AFRICA**

Tender no.

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## **TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND  
REFURBISHMENTS OF LIFTS IN VARIOUS  
GOVERNMENT BUILDINGS: AREA-B**

**Tender No. CPT1005/23**



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## SECTION 1 – TERMS OF REFERENCE

### 1. GENERAL REQUIREMENTS

#### 1.1. GENERAL

The Contractor shall attend fault calls, inspect, service, repair, maintain, modify, supply, install, test and commission the installed accessible lifts (chairlifts and platform lifts) to meet the functional requirements of various areas of the precinct. All materials, equipment and appliances shall originate 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's Representative: -

- a) The latest issue of SABS 0142: "Code of Practice for the Wiring of Premises",
- b) The Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended,
- c) The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority,
- d) The Fire Brigade Services Act 1993 Act 99 of 1987 as amended,
- e) The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as amended,
- f) The Post Office Act 1958 (Act 44 of 1958) as amended,
- g) The Electricity Act 1984 (Act 41 of 1984) as amended and
- h) The Regulations of the local Gas Board where applicable

All work shall be in accordance with the requirements of the SABS1545-1; SABS1545-2; SABS1545-5; SABS1545-10; SABS1543; "Specifications for Lifts, Escalators and Passenger Conveyors" and shall comply with the Occupational Health and Safety Act 85 of 1993 and current regulations of all other codes applicable to this work.

Equipment and materials utilised shall be new and manufactured in accordance with EN-81 standards and approved by the local authorities having the appropriate jurisdiction. All equipment shall be provided by the same manufacturer.



## 1.2. SUBMISSION OF MANDATORY DOCUMENTS: BID EVALUATION (RISK ASSESSMENT)

### ELIGIBILITY IN RESPECT OF RISK TO THE EMPLOYER:

#### Standard risk management assessment criteria in respect of tenders received for routine projects in the engineering and construction works environments:

Tender offers will be evaluated by an Evaluation Committee based on the technical and commercial risk criteria listed hereunder. Each criterion carries the same weight / importance and will be evaluated individually based on reports presented to the Bid Evaluation Committee by the Professional Team appointed on the project. A tender offer will be declared non-responsive and removed from any further evaluation if any one criterion is found to present an unacceptable risk to the Employer.

In order for the evaluation reports to be prepared by the Professional Team, the Tenderer is obliged to provide comprehensive information on form DPW-09 (EC). Failure to complete the said form will cause the tender to be declared non-responsive and removed from any further consideration. The Employer reserves the right to request additional information over and above that which is provided by the Tenderer on said form. The information must be provided by the Tenderer within the stipulated time as determined by the Bid Evaluation Committee, failing which the tender offer will *mutatis mutandis* be declared non-responsive.

### TECHNICAL RISKS:

#### Criterion 1: Experience on comparable projects during the past 10 years.

The tendering Service Provider's experience on comparable projects during the past 10 years. The number of current and previous comparable projects performed by the Tenderer as per the evaluation report prepared by the Consultant Team, based on its research and inspection of a representative sample of the Tenderer's current and previous work as reflected on form DPW-09 (EC), as well as, if necessary, of any additional work executed by the Tenderer, not reflected on form DPW-09 (EC). Failing to provide contactable references will result in the tender offer will be *mutatis mutandis* declared non-responsive.

### TECHNICAL RISKS: EXPERIENCE (as per the DPW-09)

The bidder must ensure that the completed lift projects listed on the DPW 09 have an accumulative minimum value of R30 000 000.00 within the last 10 years, from 2013 calculated up to the closing date.

Aspects to be regarded as "comparable" includes (but may be extended according to circumstances): size of projects (measured against monetary value or other project quantifying



parameters), nature of projects (building, engineering, high/low rise, etc.), locality/area of execution (site-specific influences, knowledge of local conditions, etc.), complexity of project, projects for similar client department irrespective of end purpose of buildings/facilities created or in progress of being created and time scales of projects (normal, fast track, etc.) and stage of its/their development.

**Criterion 2: Contractual commitment and quality of performance on comparable projects during the past 10 years.**

Adherence to contractual commitments and quality of performance of comparable current and previous projects performed by the Tenderer on comparable projects during the past 10 years as per the evaluation report prepared by the Consultant Team, based on its research and inspection of a representative sample of the Tenderer's current and previous work as reflected on form DPW-09 (EC), as well as, if necessary, of any additional work executed by the Tenderer, not reflected on form DPW-09 (EC). Failing to provide contactable references will result in the tender offer be *mutatis mutandis* declared non-responsive.

Aspects to be considered include, but are not limited to the following:

1. The level of progress on current projects in relation to the project programme or, if such is not available/applicable, to the contractual construction period in general;
2. The degree to which previous projects have been completed within the contractual completion periods and/or extensions thereto, and the extend of penalties imposed;
3. Project performance: time management & programming of works, timeous ordering of materials and appointment of subcontractors;
4. Financial management: payment to suppliers and cash flow problems;
5. Quality of workmanship: extent of reworks and timeous attention to remedial works;
6. Personnel resources: suitably qualified and experienced, turnover in site staff and labour force, specifically site manager and foreman;
7. Personnel management: extent of labour disputes and ability to resolving labour disputes amicably;
8. Sub-contractors: extent of turnover in subcontractors, general liaison and payment problems experienced;
9. Contract administration: contractual aspects such as complying to laws and regulations, insurances, security, submission of required documentation timeously, reaction to written contract instructions, appointments of subcontractors, etc. as can generally be expected in standard/normal conditions of contract.
10. Health & Safety: adherence to regulations and compliance, and number of transgressions & serious incidents.
11. Plant & equipment: sufficient resources on site and in time.
12. Delays: extent of causing delays, submission of claims timeously, and abuse of or exaggerated delay claims.
13. Final account: extent to which the contractor assisted in finalising the final account.





### **Criterion 3: Suitably qualified and appropriately experienced human resources**

Allocation of suitably qualified and appropriately experienced human resources, both in respect of principals and/or other staff (contract manager, site agent, site foreman including other professional, technical and/or administrative) of the tendering Service Provider to the project, as proof that the tendering Service Provider will be able to react/respond appropriately to the Services required herein. The Company Organogram with CV's and certified ID's of all principals and employed workforce as well as proof of Professional Registration will be verified. Current and future workload of the tenderer in relation to capacity and capability will also be considered. The tenderer should demonstrate that he or she possesses the necessary professional and technical qualifications and -competence in relation to the scope of work and work to be undertaken.

#### **1.2.1. EXPERIENCE (AS PER THE DPW-09)**

The bidder must include on the DPW-09 a minimum of 3 completed projects in lift repairs and lift maintenance clearly indicating the project description, Employer's Representative details (company worked for), contract value/amount, start date and the end date of the project with an accumulative minimum value of R30 000 000.00 within the last 10 years, from 2013 calculated up to the closing date:

#### **1.2.2. RESOURCES**

##### **a. TEAM LEADER QUALIFICATION AND EXPERIENCE-REGISTERED WITH ECSA**

The Department requires the services of a team leader registered as a Registered Lift Inspector with the Engineering Council of South Africa (ECSA). The bidder must submit the Curriculum Vitae and proof of registration.

Team Leader must have a minimum of 5 years' experience in the lift Industry & baseline determination, Training credentials, and Continued Professional Development in the Lift Industry.

##### **b. TEAM MEMBER(S) QUALIFICATION AND EXPERIENCE - Lift Mechanic(s)**

The Department requires the services of Qualified "competent lift mechanics" as contemplated in the Occupational Health and Safety Act, Act 85 of 1993

The bidder must submit the Curriculum Vitae (CV), qualifications, registration(s) and proof of competency certificate of a Qualified "competent lift mechanic" with a minimum of 3 years' experience.

##### **c. TEAM MEMBER QUALIFICATION AND EXPERIENCE - Construction Health & Safety Officer**



The Department requires the service of a team member to be registered with the SACPCMP as a Construction Health and Safety Officer.

The bidder is to submit the CV, Qualification, and proof of registration with the SACPCMP as a Construction Health and Safety Officer in accordance with the Occupational Health and Safety Act and Regulations with a minimum of 3 years' experience.

The Department reserves the right to independently validate all the above-mentioned certificate(s) should it deem necessary.

The Contractor shall provide sufficient qualified technical staff, field staff and safety personnel to ensure the Works under this contract are satisfactorily carried out safely and meet the performance targets and programmes. The Contractor shall also provide competent attendant(s) to monitor any works in relation to the lift maintenance (e.g. cleaning of lift pits, electrical system maintenance, etc.) at no extra charge.

### **1.3. SITE VISITS BEFORE SUBMITTING TENDER**

Before completing and submitting tenders, the tenderers are advised to visit the sites to appreciate and familiarise the extent of the work. Venue address can be viewed at the Employer's Representative's office and site visit could be arranged by contacting the Employer's Representative whose name is given in the Notes to Tenderers of the tender document. Failure to visit the 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 are for indication of the approximate information only and the tenderer shall have no claim against the Employer's Representative should the actual detail vary considerably from the list.

### **1.4. TAKING OVER OF EXISTING LIFTS**

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

Upon taking over the maintenance of the lifts, the new Contractor shall carry out a thorough examination for each lift and submit an examination report by an approved inspection authority for every lift to the Employer's Representatives within two (2) weeks from the date of commencement of Contract. The Contractor shall check the running conditions of the lifts and shall immediately inform the Employer's Representative of any defect found. Apart from the above defective components or equipment claimed by the Contractor, it is deemed that all lifts available



to him are in good working order and the Contractor shall be required to accept full responsibility of maintaining the lifts.

Unless the lift 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 maintenance.

### **1.5. HANDOVER OF LIFTS PRIOR TO TERMINATION OF EXPIRY OF CONTRACT**

One month prior to the termination or expiry of the Contract, the existing Contractor shall arrange a scheduled handover to the Employer's Representative for all lifts of the current Contract. The Contractor shall carry out a thorough examination on each lift within one month prior to the termination or expiry of the Contract and submit a test/examination report issued by an approved inspection authority for every lift to the Employer's Representative two weeks prior to the termination or expiry date of the Contract. The current Contractor shall ensure that the lifts 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 lifts 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 expense and to the satisfaction of the Employer's Representative before arranging for another inspection of the lift.

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



## 1.6. STOCK OF SPARE PARTS, REPLACEMENT AND USE OF ALTERNATIVE BRAND

In the execution of servicing and maintenance, repair and operation work on site, apart from transport, necessary labour, tools, equipment, and 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 the site within 24 hours for replacement/rectification works excluding lift motors.
- 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 at all times. The essential spare parts shall include but not be limited to major items such as controller cards, driving chain, handrails, etc. Replacement of equipment, parts and components shall be made in accordance with the manufacturer's spare part list. The Contractor shall be required to provide details, with supporting documents, of the stock level of their spare parts to provide the capability to meet the requirements of the scope of works.
- c) A permanent replacement of the original 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 the Employer's Representative shall be obtained prior to the replacement.
- d) Subject to the Employer's Representative's approval on each case, alternative and compatible equipment, parts and/or components are allowed to be used as contingent measures to temporarily re-instate the function and operation of the lift during on-call maintenance and emergency repair services, and subject to the Contractor's undertaking for their subsequent replacement by original products as quoted in the manufacturer's spare part list on or before a specified date to be agreed by the Employer's Representative. 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 by flooding, fire, etc., beyond the control of the Contractor and as agreed by the Employer's Representative.



## 1.7. LOGBOOK

The logbook shall be provided by the Contractor and kept at the management offices of the management agent or Employer's Representative, or appropriate places on site as agreed by the Employer's Representative. Every attendance and detail of work done to each lift shall be entered into the logbook by the Contractor to form a maintenance record, and/or to certify the Contractor's attendance visits as required by this Contract.

The logbook entries will be taken as records for the services provided by the Contractor in accordance with the requirements stipulated in the requirements of the SABS1545-1; SABS1545-2; SABS1545-5; SABS1545-10; SABS1543; "Specifications for Lifts, Escalators and Passenger Conveyors" and shall comply with the Occupational Health and Safety Act 85 of 1993 and current regulations of all other codes applicable to this work. The Employer's Representative will check the entries randomly to ascertain whether the work described in the Contract was properly executed. If the lift is found not attended to for a period of time, the monthly payment will be adjusted according to the formula given in Clause 7.2 of this Particular Specification.

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

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

## 1.8. SHUT DOWN OF LIFTS

Shut down of the lift and escalator system at the premises or site concerned during the execution of works shall be kept to a 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's Representative.

If shutdown is deemed necessary and is not caused by any incident which requires to be reported to the Facilities Manager, the following guidelines must be observed:

- a) Shut down of any lift must be strictly on a 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.



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

The Contractor shall provide and fix at all landings with appropriate notice and guard railing during each shutdown 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 Representative'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.

### **1.9. ACCESS CONTROL**

The Contractor shall ensure that the lifts included in this Contract are properly and adequately executed in good working order, safe operation condition and for their efficient performance. Before leaving the site and on completion of execution of work each time, the Contractor shall report to the Facilities Management department for the signing off of each job card. In the event of an emergency, after-hours or weekend work, all job cards shall be signed off by the Security Control Room as would be directed to the Contractor during such incidences.

### **1.10. INFORMATION TO BE SUBMITTED TO THE EMPLOYER'S REPRESENTATIVE**

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 approval from the Employer's Representative, and notify the Employer's Representative or his representative of the method, sequence and program for execution of the works before the execution of the Works in all cases of maintenance, overhaul, repair, modification, addition and/or improvement work.

The Contractor shall, at all times, ensure no/minimal interference to the 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's Representative against any claim arising from his fault.



## 1.11. REMEDY FOR CONTRACTOR'S FAILURE TO PERFORM

As specified in Clause 7.3 of this Particular Specification and should there be any repairing work outstanding for over seven (7) calendar 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's Representative in accordance with the Contract within a reasonable time, the Employer's Representative may give the Contractor a five (5) calendar 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's Representative shall be entitled to carry out such work or instruction by his workmen or by other contractors. Without prejudice to any other remedy, all additional expenditure properly incurred by the Employer's Representative in having such work or instruction carried out shall be recoverable by the Employer's Representative from the Contractor by deduction from amounts of money due to the Contractor under this Contract or any other contract between the Employer's Representative and the Contractor.

## 2. CONTRACTUAL COMMENCEMENT DATE

The commencement date of the construction period is stipulated to start once site handover has been granted an official contractual commencement and handovers have been completed for a period of five years (60 months). The Contract period (from when the letter of appointment is accepted until the completion of the project is 74 months). The construction period is 60 months.

## 3. HOURS OF WORK

All normal work under this Agreement will be performed during regular hours of regular working days of the elevator trade: Monday through Friday 8:00 a.m. to 5:00 p.m. ("Regular Hours"). The contractor agrees to designate an elevator mechanic to perform on-site preventive maintenance procedures for elevators exclusive of emergency callback service, emergency repairs, scheduled repairs or safety tests which should be assigned to separate repair personnel.

If work is required outside of Regular Hours, the Employer's Representative will pay only the difference between normal and overtime labour at the Contractor's billing rate, except as otherwise provided.



#### 4. IMPORTED EQUIPMENT

This equipment will not be subject to fluctuations in the rate of exchange.

However, should the Contractor choose to be protected against fluctuations in the rate of exchange on imported equipment, the following conditions will apply:

- (a) The Materials Offered Ex-Import (DPW23), which forms part of this tender document, must be completed by the Contractor.
- (b) Any fluctuations in the rate of exchange will be for the account of the Government and shall be calculated from a date seven (7) days prior to the date of the Contractor's tender to a date seven (7) days after receipt by the Contractor's bank of the negotiable bill of lading or the exporter's invoice, provided this latter date is not later than 30 days after the date of payment. Thereafter, fluctuations in the rate of exchange shall not be for the account of the Government.

#### 5. PROGRAMMING AND COORDINATION

Due to the nature of the scope of work for the lifts in various areas/sites, a fixed sequence of operation is required to properly repair and maintain the lift systems over a specific period. The work shall be closely scheduled in order not to delay the entire project.

The Lift Contractor shall familiarise himself with the requirements of the other trades and shall examine the plans and specifications covering each of these sections.

The lift space requirements shall be carefully checked with other trades to ensure that the mechanical and electrical parts can be installed in the proper sequence in the space allocated.

#### 6. SUBMITTALS

##### Layout and Shop Drawings

Layout drawings are required for all lift work, including car enclosure and landing entrance coordinating drawings. Drawings shall show top clearance above cross-heads and counterweight frames, machine room layouts with power requirements and heat release data, location of all equipment on tops of cars, overhead beams and elevations, and reactions which will be transmitted to the building structure during normal operation of lifts.





Shop drawings are required for car enclosure, landing entrances and signal fixture work showing construction, finish and fastening details. Furthermore, shop drawings shall clearly show the motor room construction detail, and shaft construction detail including all the required internal supporting beams, pit dividing walls for multi-lift shafts and pit sump pump drains. Composite shop drawings shall be submitted for areas, which require close co-ordination with the work of the different trades. All special equipment and fixture faceplates shall be submitted for approval. Drawings and samples or brochures shall be submitted for each type of fixture. The final design and material proposed for fixture faceplates and special equipment shall be approved by the Representative/Agent.

#### Samples

All exposed materials and finishes shall be submitted to the Representative/Agent for approval in sample form.

The Lift Contractor shall furnish such samples as may be called for and the Representative/Agent may reject all materials or workmanship not corresponding with the samples. All approved samples shall be held in safe keeping until such time as the work to which they apply has been completed.

## 7. TESTS CERTIFICATES AND INSPECTIONS

The Lift Contractor shall carry out all the tests and checks required in terms of the document SABS1545-10 Annexure A and/or B and issue the necessary Certificate of Compliance prior to final completion.

Upon completion of the installation of all equipment and once it is in full operation the Lift Contractor shall completely test the lift equipment to demonstrate that the equipment is provided in compliance with the specification. The total costs for this test shall be included in the tendered amount.

The Lift Contractor shall decide on such tests and shall give at least 72 hours written notice to the Representative/Agent, before commencing the test.

In the event of the plant, equipment or installation not passing the test, the Representative/Agent shall be at liberty to deduct from the Contract amount all reasonable expenses incurred by the Employer's Representative and/or the Representative/Agent attending the test.

Whenever any installation or equipment is operated for testing or adjusting as provided for above, the Contractor shall operate the entire system for as long a period as may be required to always prove satisfactory performance in the occupied space served by that system until the system is handed over.



The Contractor shall provide all labour and supervision required for such operation and the Department may assign operating personnel as observers, but such observation time shall not be counted as instruction time.

After completing the installation or system, all equipment shall be tested, adjusted and readjusted until they operate to the satisfaction and approval of the Representative/ Agent.

The Contractor shall submit certificates of tests carried out to prove the efficiency of all equipment, as well as certificates to be obtained from all relevant authorities, statutory bodies, etc.

## **8. OPERATING AND MAINTENANCE MANUALS**

The Contractor shall be responsible for the compilation of a complete set of Operating and Maintenance manuals. This shall be done in accordance with the Additional Specification – Operating and Maintenance manuals.

All information shall be recorded and reproduced in electronic format as well as supplying the Representative/Agent with three sets of hard copies.

Approval of the final Operating and Maintenance Manuals shall be a prerequisite for issuing of a Certificate of Practical Completion of the installation.

## **9. BROCHURES**

Detailed brochures of all equipment offered, including the control, drive, door operator, call buttons and signals, remote monitoring station, intercoms and emergency dial-out system shall be presented together with the tender documents.

## **10. EXTENT OF WORKS**

### **10.1. GENERAL REQUIREMENTS**

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

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



In addition, the Contractor shall, as and when instructed by the Employer's Representative, repair or replace at his cost any part/component/equipment of a lift, 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's Representative.

The Employer's Representative 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 methods for the execution of the work and/or with any other action that may cause damage to the lift, its equipment and/or personnel. The Contractor shall immediately rectify such work at his expense after being instructed by the Employer's Representative.

At the Employer's Representative discretion, the Employer's Representative or other designated personnel will carry out an inspection on any lifts or escalators at any time, after major alteration/major component replacement or periodic testing and examination or upon receipt of complaints. The Contractor shall dispatch adequate and sufficient technical staff on site for the smooth progress of inspection upon request. The scope of works is intended to cover the ad-hoc repair of lift installations and full comprehensive maintenance for all existing lifts. The maintenance will be for 60 months from date of site handover to the contractor. The minimum equipment requirements are outlined but do not cover all the design and construction details. Such details are recognised as being the exclusive responsibility of the lift contractor and notification to the engineer for design adoption and implementation. It is hereby acknowledged that neither the Principal Agent nor the Consulting Engineer invented or developed any part of the lift system, but have only made selections of capacities, speed, control systems, materials, and finishes, as well as specified performance and installation criteria as may be applicable. In all cases where a device or part of the equipment is referred to in the singular, it is intended that such reference shall apply to as many devices as are required to complete the installation.

## **10.2. ON-CALL MAINTENANCE AND EMERGENCY REPAIR SERVICES**

### **10.2.1 CONTRACTOR'S EMERGENCY CALL CENTRE**

The Contractor shall operate a Contractor's Emergency Call Centre (CECC). The CECC shall be equipped with adequate telecommunications equipment, manned by a sufficient number of technical and administrative staff as agreed by the Employer's Representative 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's Representative or his representatives.
- b. To monitor the progress of the fault/emergency call attendance and to report to the Employer's Representative 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 fault/emergency call attendance completion within one (1) day.
- d. To feedback and resolve any complaint received on the fault/emergency call within 30 minutes of notification from the Employer's Representative 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 or a group of lifts in the main landing within one month after commencement of the contract or immediately upon any changes.

#### **10.2.2. 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 are to be enforced 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 Public Holidays.
- d. Response Time – the Contractor shall respond to the Company's call for service and arrive at the site:
  - within 30 minutes in case of lift trap; and
  - within 60 minutes in case of non-lift trap.
- e. After receiving instructions from the Employer's Representative or his representative, either verbal or written, all faulty systems should be restored to its normal condition within one (1) day or as the date agreed by the Employer's Representative.



- f. Should the Contractor fail to respond promptly within the specified period, the Contractor shall immediately contact the Employer's Representative or his representative and provide sufficient justification for his incapability to comply with the requirement of response.
- g. For any serious lift incident including the death or injury of a person, the Contractor shall immediately contact the Employer's Representative or his representative.
- h. If the lift is beyond emergency repair, the contractor is required to install a suitable notice indicating "Out of Service" at a prominent position and inform the Employer's Representative and any other party as directed by the Employer's Representative.
- i. If the Contractor cannot complete the rectification works within the specified period, the Contractor shall submit a written report, explaining the non-compliance, to the Employer's Representative within one calendar day after such non-compliance is found.

### **10.2.3. 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 4.2.2(c).

Should any passenger be injured as reported, the Registered Lift Engineer shall arrive at the site of the incident within two (2) hours to conduct a detailed investigation of the incident and thorough examination of the lift.

The emergency services shall include overtime work, 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 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's Representative 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. For outdoor equipment 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 an 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 practical.



The 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.

The Contractor shall submit to the Employer's Representative, a detailed inspection, service and repair report within 48 hours of receipt of each 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 is taken
- l. Preventive measure
- m. Location For all major incidents that the Employer's Representative 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.

For monitoring the performance on attending fault calls, the Contractor shall submit to the Employer's Representative a monthly report by electronic means together with a signed hard copy as shown in 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's Representative for approval and the monthly report shall include the following information: -



- a. No. of fault calls received for each lift of each location.
- b. No. of fault calls in (a) attended within 30 minutes as specified in Clause 4.2.2(d) of the Particular Specification.
- c. No. of fault calls in (a) attended within one hour as specified in Clause 4.2.2(d) of the Particular Specification.
- d. No. of fault in (a) rectified within 24 hours as specified in Clause 4.2.2(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 breakdowns 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's Representative or his representatives.

### **10.3. PERFORMANCE TARGET ON MAINTENANCE SERVICES**

The Contractor shall submit records of the following service performance and corresponding Performance Indicator (PI) reports with detailed calculations to the Employer's Representative in the first week of the following month.

#### **10.3.1. 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 breakdowns;
- iii. Time duration of system interruption for planned maintenance; and
- iv. Reasons causing system breakdown.

The performance target shall monitor the availability of lift service to the critical premises.

The "Service Availability" shall be evaluated as follows: -

1 -

*Total downtimes of li(s) in minutes*



---

*Total operating time (minutes)*

*x 100%*

Where

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

### 10.3.2. RESPONSE TIME TO FAULT CALLS

- i. Service response time duration (in minutes) from the fault call received (Employer’s Representative or his representative whichever is earlier) to arrival on site of incident;
- ii. Total number of system faults 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.
- iv. The monthly system “Service Availability” shall be maintained and should not be lower than 99%.
- v. The Contractor shall deliver full maintenance and repair services in accordance with the performance targets of lifts as specified in Annexure 1 to this Particular Specification.





## 10.4. 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's Representative and his representatives. All cost for all works required is deemed included in the itemized rates in the Pricing Schedule.

### 10.4.1. SCOPE OF INSPECTION AND SERVICING

The Contractor shall dispatch competent and specially trained technicians to each lift regularly according to the Maintenance Schedules specified in Annexure 2 in terms of frequency and scope of work, to keep the lifts in a clean, smooth, quiet and safe operating condition.

### 10.4.2. MONTHLY SERVICE REPORT

The Contractor shall submit to the Employer's Representative a Monthly Service Report on the routine maintenance services delivered to each lift in the calendar month executed in.

Each Monthly Service Report shall: -

- a) be submitted within one (1) week after the date of the last inspection to which the report relates;
- b) be a typed report duly signed by a Registered Lift Engineer;
- c) state the condition of the major safety components as detailed in the inspection sheet 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 motor, driving chain, handrail, etc. in the reporting month;
- e) indicate the date of the last safety test and the date of the last full load safety test for the lifts; and certify that the lift 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 monthly inspection report. Such interim report shall be submitted within seven (7) working days of such inspection.



## **10.5. PLANNED EXAMINATION TESTING AND MAINTENANCE**

### **10.5.1. GENERAL**

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

- a. Requirements of the SABS1545-1; SABS1545-2; SABS1545-5; SABS1545-10; SABS1543; "Specifications for Lifts, Escalators and Passenger Conveyors" Lifts and Escalators Ordinance, Cap. 618;
- b. Any other regulation or by-law of any local or other duly constituted authority, which may be applicable to such tests.

### **10.5.2. REPORT ON EQUIPMENT BEYOND ECONOMIC REPAIR**

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

## **10.6. ALTERATIONS, ADDITION, AND IMPROVEMENT WORKS**

### **10.6.1. 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 to suit the updated/revised operational requirements. The Employers' Representative will inform the Contractor of the extent of alteration, addition and/or improvement work for the lift and the Contractor shall prepare a request for repair report (RFRR) for the work based on the scheduled rates as priced in the tender (Repair Section Bill 3). The RFR shall be submitted to the Employers' Representative for assessment within the time frame as instructed, complete with a 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 RFRR (request for repair report). No works will be completed as stated above if not approved by the Employer's Representative with a signed



approved site instruction and cost summary prepared on the scheduled rates as priced in the bill of quantities.

### **10.6.2. RESUMPTION PERMIT**

The Contractor shall arrange the examination of the lift or escalator by a registered lift engineer after the completion of a major alteration so as to confirm that the part affected by the major alteration is in safe working order.

The Contractor shall apply and obtain the Resumption Permit for the lift from the Department of Labour, and make copies to the Employer's Representative, and any other party as directed by the Employer's Representative or his representatives for record. The lift 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 providing a suspension notice at the main landing to prevent inadvertent opening of the lift by other persons.

### **10.6.3. NATURE OF WORKS**

For all Alteration, Additions and Improvement Works, a site instruction will be issued by the Employer's Representative for this purpose. The Contractor shall include all costs for labour and materials to supply and install, test and commission the part of the system that has been altered or added by him as well as maintaining the completed work within the defect liability period at no extra cost, or until 12 months after the expiry of Contract Period. The Contractor shall be required to carry out all necessary works in the Defect Liability Period as required.

Upon completion of the Works, the Contractor shall submit a maintenance plan for the above Works to the Employer's Representative 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's Representative for record purpose.

Where the extent of Alteration, Addition or Improvement Works is such that it affects the original classification of the lift, the Contractor shall initiate such actions and submit the relevant forms to the Department of Labour. The costs of the preparation of submission will be deemed to be included in the quotation approved by the Employer's Representative as a result of the site instruction issued.



## 11. EQUIPMENT DESCRIPTION

Commencing on-site handover and successful completion of handover from the current maintenance contractor, the following lifts will be handed over to the successful bidder, and will be maintained for a total of 60 months:

S/N	Installation name	Address	Coordinates	Type of unit	Stops
1	Installation 01A: Beaufort West Land Affairs (SN01175)	754 Church Street, Beaufort West	-32.3499689,22.5845265	Stair Platform	2
2	Installation 02A: Beaufort West Police SAPS (15255H)	Bird Street, Beaufort West	-32.3470598,22.5838175	Stair Platform	2
3	Installation 03A: Bishop Lavis Police SAPS (SL0178)	Table Mountain & Myrtle Street, Bishop Lavis	-33.9461746,18.5727914	Passenger Lift	4
4	Installation 03B: Bishop Lavis Police SAPS (SL0179)	Table Mountain & Myrtle Street, Bishop Lavis	-33.9462751829, 18.5722437506	Passenger Lift	4
5	Installation 04A: Bishop Lavis Police Training College (CE3396)	101 Myrtle Street, Bishop Lavis	-33.946116,18.5686026	Passenger Lift	8
6	Installation 04B: Bishop Lavis Police Training College (CE3395)	100 Myrtle Street, Bishop Lavis	-33.9456676775, 18.5693069996	Passenger Lift	8
7	Installation 05A: Bredasdorp Justice Magistrates Offices (08L2367)	Long Street, Bredasdorp	-34.5322,20.03942	Passenger Lift	2
8	Installation 05B: Bredasdorp Justice Magistrates Offices (15174)	Long Street, Bredasdorp	-34.5322,20.03942	Stair Platform	2
9	Installation 05C: Bredasdorp Justice Magistrates Offices (15175)	Long Street, Bredasdorp	-34.5322,20.03942	Stair Platform	2
10	Installation 06A: Cape Town Caledon House (15200)	Caledon & Primrose Street, Cape Town	-33.9272344,18.4249851	Access Goods Lift	3



S/N	Installation name	Address	Coordinates	Type of unit	Stops
11	Installation 07A: Cape Town Koopman De Wet Huis (08L4447)	Strand Street 35, Cape Town	-33.9209411, 18.4212906	Paraplegic only lift	2
12	Installation 08A: Cape Town Rust & Vreugd (08L4446)	78 Buitenkant Street, Cape Town	-33.9304034, 18.4205343	Paraplegic only lift	2
13	Installation 09A: Cape Town Art Gallery (Michaelis) (08L4451)	Greenmarket Square, Cape Town	-33.922135, 18.4194447	Paraplegic only lift	2
14	Installation 10A: Cape Town Art Gallery (National) (08L4448)	Government Avenue, Company Gardens Cape Town	-33.9267147, 18.4168553	Paraplegic only lift	2
15	Installation 11A: Cape Town DPW Customs House (3799)	Heerengracht Avenue, Cape Town	-33.915486,18.4290533	Customs Hoist	2
16	Installation 11B: Cape Town DPW Customs House (SLE0001)	Heerengracht Avenue, Cape Town	-33.915486,18.4290533	Goods/Passenger Lift (East)	17
17	Installation 11C: Cape Town DPW Customs House (SLE0002)	Heerengracht Avenue, Cape Town	-33.915486,18.4290533	Passenger Lift (East)	17
18	Installation 11D: Cape Town DPW Customs House (SLE0003)	Heerengracht Avenue, Cape Town	-33.915486,18.4290533	Passenger (East)	17
19	Installation 11E: Cape Town DPW Customs House (SLE0004)	Heerengracht Avenue, Cape Town	-33.915486,18.4290533	Passenger (East)	17
20	Installation 11F: Cape Town DPW Customs House (SLE0005)	Heerengracht Avenue, Cape Town	-33.9152444,18.4284767	Goods/Passenger Lift (West)	17
21	Installation 11G: Cape Town DPW Customs House (SLE0006)	Heerengracht Avenue, Cape Town	-33.9152444,18.4284767	Passenger Lift (west)	17
22	Installation 11H: Cape Town DPW Customs House (SLE0007)	Heerengracht Avenue, Cape Town	-33.9152444,18.4284767	Passenger Lift (West)	17

**TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND REFURBISHMENTS OF LIFTS IN VARIOUS GOVERNMENT BUILDINGS: AREA-B: Tender No**



S/N	Installation name	Address	Coordinates	Type of unit	Stops
23	Installation 12A: Cape Town Heritage Museum (Bo Kaap: Iziko) (08L4443)	71 Wale Street, Cape Town	-33.9215835, 18.4149708	Paraplegic only lift	2
24	Installation 13A: Cape Town Heritage Museum (Lifts) (15187)	Queen Victoria Street, Cape Town	-33.9289218,18.4152721	Stair Platform	2
25	Installation 13B: Cape Town Heritage Museum (Lifts) (CE3327)	Queen Victoria Street, Cape Town	-33.9289218,18.4152721	Goods/Passenger Lift	5
26	Installation 13C: Cape Town Heritage Museum (Lifts) (CE3326)	QUEEN VICTORIA STREET, CAPE TOWN	-33.9289218,18.4152721	Passenger Lift	4
27	Installation 13D: Cape Town Heritage Museum (Lifts) (CE3328)	QUEEN VICTORIA STREET, CAPE TOWN	-33.9289218,18.4152721	Passenger Lift	3
28	Installation 14A: Cape Town Heritage Museum (Table) (15250)	QUEEN VICTORIA STREET, CAPE TOWN	-33.9289218,18.4152721	Lifting Table	2
29	Installation 15A: Cape Town Heritage SA Cultural & History Museum (Slave Lodge) (08L4445)	CHURCH SQUARE, CAPE TOWN	-33.9253306,18.4214449	Paraplegic only lift	2
30	Installation 15B: Cape Town Heritage SA Cultural & History Museum (Slave Lodge) (08L4450)	CHURCH SQUARE, CAPE TOWN	-33.9253306,18.4214449	Paraplegic only lift	2
31	Installation 15C: Cape Town Heritage SA Cultural & History Museum (Slave Lodge) (15253)	CHURCH SQUARE, CAPE TOWN	-33.9253306,18.4214449	Stair Platform	2
32	Installation 16A: Cape Town Heritage The Castle (Lifts) (08L4205)	BUITENKANT STREET, CAPE TOWN	-33.9266326, 18.4296647	Passenger Lift	2
33	Installation 16B: Cape Town Heritage The	BUITENKANT STREET, CAPE TOWN	-33.9266326, 18.4296647	Passenger Lift	2

**TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND REFURBISHMENTS OF LIFTS IN VARIOUS GOVERNMENT BUILDINGS: AREA-B: Tender No**



S/N	Installation name	Address	Coordinates	Type of unit	Stops
	Castle (Lifts) (HO0048)				
34	Installation 17A: Cape Town Justice Attorney General Office (CE1853)	QUEEN VICTORIA STREET, CAPE TOWN	-33.9255796,18.4175686	Passenger Lift	8
35	Installation 18A: Cape Town Justice Civil Court (CE3690)	QUEEN VICTORIA STREET, CAPE TOWN	-33.9255796,18.4175686	Passenger Lift	3
36	Installation 18B: Cape Town Justice Civil Court (CE4496)	QUEEN VICTORIA STREET, CAPE TOWN	-33.9255796,18.4175686	Passenger Lift	2
37	Installation 19A: Cape Town Justice Justicia (Court Cells) (SLE0010)	PARADE STREET, CAPE TOWN	-33.92656,18.42307	Passenger Lift	4
38	Installation 19B: Cape Town Justice Justicia (Court Cells) (0)	PARADE STREET, CAPE TOWN	-33.92656,18.42307		
39	Installation 20A: Cape Town Justice Justicia (Main) (CE1578)	PLEIN STREET, CAPE TOWN	-33.9264642, 18.4208785	Passenger Lift	3
40	Installation 20B: Cape Town Justice Justicia (Main) (CE1579)	PLEIN STREET, CAPE TOWN	-33.9264642, 18.4208785	Passenger Lift	4
41	Installation 21A: Cape Town Justice Magistrates Offices (SLE0013)	BUITENKANT STREET, CAPE TOWN	-33.926781,18.4237352	Passenger Lift	2
42	Installation 22A: Cape Town Justice Supreme Court (CE0512)	KEEROM STREET, CAPE TOWN	-33.9255796,18.4175686	Passenger Lift	4
43	Installation 22B: Cape Town Justice Supreme Court (CE0513)	KEEROM STREET, CAPE TOWN	-33.9255796,18.4175686	Passenger Lift	3
44	Installation 22C: Cape Town Justice Supreme Court (08L3644)	KEEROM STREET, CAPE TOWN	-33.9254147,18.4172557	Passenger Lift	3

**TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND REFURBISHMENTS OF LIFTS IN VARIOUS GOVERNMENT BUILDINGS: AREA-B: Tender No**



S/N	Installation name	Address	Coordinates	Type of unit	Stops
45	Installation 23A: Cape Town Justice Supreme Court (Consolidated & OTC) (OT0003)	KEEROM STREET, CAPE TOWN	-33.9254147,18.4172557	Passenger Lift	4
46	Installation 23B: Cape Town Justice Supreme Court (Consolidated & OTC) (OT0004)	KEEROM STREET, CAPE TOWN	-33.9254147,18.4172557	Passenger Lift	4
47	Installation 24A: Cape Town Library New Government Archives (CE3521)	ROELAND & MCKENZIE STREET, CAPE TOWN	-33.93153,18.42381	Passenger Lift	8
48	Installation 24B: Cape Town Library New Government Archives (CE3522)	ROELAND & MCKENZIE STREET, CAPE TOWN	-33.930755,18.423299	Passenger Lift	8
49	Installation 25A: Cape Town Library SA Library (Disabled Platform) (08L3962)	QUEEN VICTORIA STREET, CAPE TOWN	-33.92543,18.4180655	Disabled only Lift	2
50	Installation 26A: Cape Town Library SA Library (Dumbwaiter) (11317)	QUEEN VICTORIA STREET	-33.92543,18.4180655	Dumb Waiter	3
51	Installation 27A: Cape Town Library SA Library (Lifts) (CE3882)	QUEEN VICTORIA STREET, CAPE TOWN	-33.92543,18.4180655	Passenger Lift	5
52	Installation 27B: Cape Town Library SA Library (Lifts) (CE3883)	QUEEN VICTORIA STREET, CAPE TOWN	-33.92543,18.4180655	Passenger Lift	7
53	Installation 28A: Cape Town Residence Tafelsig Hof (SAPS Flats) (CE2997)	CONSTITUTION STREET, CAPE TOWN	-33.9302793,18.4267933	Passenger Lift	6
54	Installation 29A: Durbanville Naval Groenverwacht	KLIPFONTEIN ROAD, DURBANVILLE	-33.9693485, 18.5422583	Access Only Goods	2

**TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND REFURBISHMENTS OF LIFTS IN VARIOUS GOVERNMENT BUILDINGS: AREA-B: Tender No**





S/N	Installation name	Address	Coordinates	Type of unit	Stops
	(Radio Station) (CE998)				
55	Installation 30A: Elsies River Police SAPS (08L4232)	CNR VALHALLA & VIKING STREETS, ELSIESRIVER	-33.92439,18.56504	Passenger Lift	2
56	Installation 31A: George Public Offices (CE2947)	CNR YORK & COURTNEY STREET, GEORGE	-33.9558564,22.4599064	Passenger Lift	4
57	Installation 31B: George Public Offices (CE2948)	CNR YORK & COURTNEY STREET, GEORGE	-33.9558564,22.4599064	Passenger Lift	4
58	Installation 31C: George Public Offices (CE2949)	CNR YORK & COURTNEY STREET, GEORGE	-33.9558564,22.4599064	Passenger Lift	4
59	Installation 31D: George Public Offices (CE2950)	CNR YORK & COURTNEY STREET, GEORGE	-33.9558564,22.4599064	Passenger Lift	4
60	Installation 32A: George Justice Magistrates Court (Thembaletu) (OT126A)	SANDKRAAL STREET, THEMBALETHU (GEORGE)	-34.005503,22.484438	Passenger Lift	2
61	Installation 32B: George Justice Magistrates Court (Thembaletu) (OT126B)	SANDKRAAL STREET, THEMBALETHU (GEORGE)	-34.0006709,22.482269	Passenger Lift	2
62	Installation 32C: George Justice Magistrates Court (Thembaletu) (15300)	SANDKRAAL STREET, THEMBALETHU (GEORGE)	-34.0038578,22.4842001	Stair Platform	2
63	Installation 33A: Khayelitsha Home Affairs (08L3120)	CNR MAZALA & TSOLO STREET, KHAYELITSHA	-34.0486588,18.6719575	Passenger Lift	2
64	Installation 34A: Khayelitsha Justice Magistrates Court (08L2426)	CNR WALTER SISULU & STEVE BIKO STREET, KHAYELITSHA	-34.0475207,18.6758896	Passenger Lift	2
65	Installation 35A: Knysna Justice Magistrates Court (CTE0026)	MAIN ROAD, KNYSNA	-34.0360343,23.0516066	Passenger Lift	2



S/N	Installation name	Address	Coordinates	Type of unit	Stops
66	Installation 36A: Mitchells Plain Justice Magistrates Court (Disabled Platform) (CE3418)	1ST AVENUE, EAST RIDGE	-34.04724,18.62438	Disabled only Lift	2
67	Installation 37A: Mitchells Plain Justice Magistrates Court (Lifts) (08L3601)	1ST AVENUE, EAST RIDGE	-34.0469194,18.624509	Passenger Lift	4
68	Installation 37B: Mitchells Plain Justice Magistrates Court (Lifts) (08L3602)	1ST AVENUE, EAST RIDGE	-34.0473089,18.624463	Passenger Lift	4
69	Installation 38A: Mossel Bay Justice Magistrates Court (GAE14)	LOUIS FOURIE ROAD, MOSSEL BAY	-34.1834279,22.1183347	Passenger Lift	2
70	Installation 39A: Mossel Bay Police SAPS (SLO111)	GEORGE WAY 2C, MOSSEL BAY	-34.1793975,22.141014	Passenger Lift	2
71	Installation 40A: Mossel Bay Police SAPS (Dagama Kop) (08L286)	MOSSEL STREET, MOSSEL BAY	-34.1759507,22.1163865	Paraplegic only lift	2
72	Installation 41A: Oudtshoorn Police SAPS (HQ) (SLE0008)	BARON VAN RHEEDA STREET, OUDTSHOORN	-33.5900003,22.20323	Passenger Lift	6
73	Installation 41B: Oudtshoorn Police SAPS (HQ) (SLE0009)	BARON VAN RHEEDA STREET, OUDTSHOORN	-33.5895877,22.2029207	Passenger Lift	6
74	Installation 42A: Oudtshoorn Police SAPS (Training Academy) (15254)	PARK ROAD, OUDTSHOORN	-33.5948444,22.1830846	Paraplegic only lift	3
75	Installation 43A: Retreat DoC Pollsmoor Prison (08L3643)	STEENBERG, RETREAT	-34.06686,18.43337	Paraplegic only lift	2
76	Installation 44A: Riversdale Justice Magistrates Court (SL0111)	BARRY STREET, RIVERSDALE	-34.0915289,21.2604117	Passenger Lift	4



S/N	Installation name	Address	Coordinates	Type of unit	Stops
77	Installation 45A: Riversdale Police SAPS (11L295)	CHURCH & SOLOMAN STREET, RIVERSDALE	-34.10306,21.26364	Passenger Lift	3
78	Installation 46A: Simonstown SADF Da Gama Park (Caffe) (3579)		-34.155437,18.4002279	Access Only Goods Hoist	2
79	Installation 47A: Somerset West Justice Magistrates Court (CE3990)	33 CALEDON STREET, SOMERSET WEST	-34.0831833,18.8516903	Passenger Lift	2
80	Installation 48A: Stellenbosch Land Affairs (08L3637)	MARK STREET 15, STELLENBOSC H	-33.9397106,18.8544112	Paraplegic only lift	2
81	Installation 49A: Stellenbosch Land Affairs Plant Quarantine Station (C08L3130)	POLKA DRAAI, STELLENBOSC H	-33.9462284,18.8263826	Passenger Lift	2
82	Installation 50A: Stellenbosch Police SAPS (15188)	BERGZICHT & DU TOIT STREET, STELLENBOSC H	-33.935348,18.855659	Paraplegic only lift	3
83	Installation 50B: Stellenbosch Police SAPS (15189)	BERGZICHT & DU TOIT STREET, STELLENBOSC H	-33.935348,18.855659	Stair Platform	2
84	Installation 51A: Swellendam Justice Magistrates Court (15192)	RENIUS STREET 2, SWELLENDAM	-34.0257083, 20.4381254	Paraplegic only lift	2
85	Installation 52A: Westlake Justice Maritime High Court (SLE0011)	OLD CAPE ROAD, WESTLAKE	-34.0851047,18.4370402	Passenger Lift	4
86	Installation 52B: Westlake Justice Maritime High Court (SLE0012)	OLD CAPE ROAD, WESTLAKE	-34.0851047,18.4370402	Passenger Lift	4
87	Installation 53A: Westlake SADF Silvermine Bunker (CE690997)	OU KAAPSE WEG SILVERMINE, WESTLAKE	-34.0726266,18.4317541	Access Goods Only Lift	3



S/N	Installation name	Address	Coordinates	Type of unit	Stops
88	Installation 54A: Westlake SADF Silvermine Mess (War Room) (12352)	OU KAAPSE WEG SILVERMINE, WESTLAKE	-34.0726266,18.4317541	Dumb Waiter	2
89	Installation 55A: Worcester DoC Prison (Brandvlei) (15199)	BREED VALLEY	-33.7272263, 19.4735066	Paraplegic only lift	2
90	Installation 56A: Worcester DPW Public Offices (New) (CE2561)	ADDERLEY STREET, WORCESTER	-33.6475784425944, 19.444944246767093	Passenger Lift	6
91	Installation 56B: Worcester DPW Public Offices (New) (CE2562)	ADDERLEY STREET, WORCESTER	-33.6475784425944, 19.444944246767093	Passenger Lift	6
92	Installation 56C: Worcester DPW Public Offices (New) (CE2563)	ADDERLEY STREET, WORCESTER	-33.6475784425944, 19.444944246767093	Goods/Passenger Lift	5
93	Installation 57A: Wynberg Justice Magistrates Court (CE3018)	CHURCH STREET, WYNBERG	-34.0020494,18.4668307	Passenger Lift	6
94	Installation 57B: Wynberg Justice Magistrates Court (CE3019)	CHURCH STREET, WYNBERG	-34.0041346,18.4659266	Passenger Lift	6
95	Installation 57C: Wynberg Justice Magistrates Court (CE3020)	CHURCH STREET, WYNBERG	-34.0041346,18.4659266	Passenger Lift	6
96	Installation 57D: Wynberg Justice Magistrates Court (CE3021)	CHURCH STREET, WYNBERG	-34.0041346,18.4659266	Passenger Lift	6
97	Installation 57E: Wynberg Justice Magistrates Court (CE3016)	CHURCH STREET, WYNBERG	-34.0041346,18.4659266	Passenger Lift	4
98	Installation 57F: Wynberg Justice Magistrates Court (CE3017)	CHURCH STREET, WYNBERG	-34.0041346,18.4659266	Passenger Lift	4

**TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND REFURBISHMENTS OF LIFTS IN VARIOUS GOVERNMENT BUILDINGS: AREA-B: Tender No**



S/N	Installation name	Address	Coordinates	Type of unit	Stops
99	Installation 57G: Wynberg Justice Magistrates Court (CE3022)	CHURCH STREET, WYNBERG	-34.0041346,18.4659266	Passenger Lift	3
100	Installation 57H: Wynberg Justice Magistrates Court (CE3023)	CHURCH STREET, WYNBERG	-34.0041346,18.4659266	Passenger Lift	3
101	Installation 57I: Wynberg Justice Magistrates Court (CE3086)	CHURCH STREET, WYNBERG	-34.0045596,18.4635934	Passenger Lift	4
102	Installation 58A: Wynberg Residence Servamus (SAPS Flats) (CE3000)	BOWER ROAD, WYNBERG	-34.0134418,18.4616209	Passenger Lift	9
103	Installation 58B: Wynberg Residence Servamus (SAPS Flats) (CE2999)	BOWER ROAD, WYNBERG	-34.0131678,18.4603855	Passenger Lift	9
104	Installation 59A: Ysterplaat Residence Flats (CE567)	JACK FROST STREET, YSTERPLAAT AIRFORCE BASE	-33.8248,18.48766	Passenger Lift	7
105	Installation 59B: Ysterplaat Residence Flats (CE568)	JACK FROST STREET, YSTERPLAAT AIRFORCE BASE	-33.8248,18.48766	Passenger Lift	7
106	Installation 60A: Plettenburg Bay Police SAPS (?)	MAIN STREET	-34.05785,23.3719499	Passenger Lift	3
107	Installation 60B: Plettenburg Bay Police SAPS (?)	MAIN STREET	-34.05807,23.37244	Passenger Lift	3
108	Installation 60C: Plettenburg Bay Police SAPS (?)	MAIN STREET	-34.0580615,23.3724545	Passenger Lift	3
109	Installation 61A: Cape Town National Mutual (Building) (CE1366)	CHURCH SQUARE 17, CAPE TOWN	-33.9248856,18.4209002	Passenger Lift	6
110	Installation 61B: Cape Town National Mutual	CHURCH SQUARE 17, CAPE TOWN	-33.92538,18.42148	Passenger Lift	6

**TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND REFURBISHMENTS OF LIFTS IN VARIOUS GOVERNMENT BUILDINGS: AREA-B: Tender No**



S/N	Installation name	Address	Coordinates	Type of unit	Stops
	(Building) (CE1367)				
111	Installation 61C: Cape Town National Mutual (Building) (08L3882)	CHURCH SQUARE 17, CAPE TOWN	-33.9253306,18.4214449	Goods/Passenger Lift	10
112	Installation 62A: Ceres Court Lifts (08/L3115)	44 VOORTREKKER ROAD, CERES	-33.3725738525, 19.3064727783	Passenger Lift	2
113	Installation 63A: LANGA SAPS (VE0081)	WASHINGTON STREET, LANGA	-33.9446494,18.5269071	Passenger Lift	2
114	Installation 64A: Muizenberg SAPS Museum (BL131DM)	7 MAIN ROAD, MUIZENBERG	-34.1126543,18.4658802	Passenger Lift	3
115	Installation 65A: Khayelitsha SAPS (VE0028)	4 BUNGA DRIVE, KHAYELITSHA	-34.0245778, 18.6653346	Passenger Lift	3
116	Installation 66A: Caledon Magistrates Court (UC00046)	28 KERK STREET, CALEDON	-34.2322064,19.4295677	Passenger Lift	3
117	Installation 66B: Caledon Magistrates Court (UC00047)	28 KERK STREET, CALEDON	-34.2322064,19.4295677	Passenger Lift	3
118	Installation 67A: Airforce Base Overberg (HO0090)	0 BREDASDORP RD, OVERBURG	-34.5648315,20.2467624	Passenger Lift	5
119	Installation 68A: Lentegeur Police Station (KE0145)	64 MELKBOS ROAD LENTEGEUR	-34.0365852, 18.6101173	Passenger Lift	2
120	Installation 68B: Lentegeur Police Station (KE0144)	64 MELKBOS ROAD LENTEGEUR	-34.0365852, 18.6101173	Passenger Lift	2
121	Installation 69A: George Masmanyani (SL0596)	37 PLANTATION STREET, GEORGE	-33.9471643,22.4533386	Passenger Lift	2
122	Installation 69B: George Masmanyani (SL0597)	37 PLANTATION STREET, GEORGE	-33.9471643,22.4533386	Passenger Lift	2



S/N	Installation name	Address	Coordinates	Type of unit	Stops
123	Installation 69C: George Masmanyani (SL0598)	37 PLANTATION STREET, GEORGE	-33.9471643,22.4533386	Passenger Lift	2
124	Installation 70A: Iziko Museum C1 - SAELV/SCR00202 - C1 (SL0412)	25 QUEEN VICTORIA STREET	-33.9289218, 18.4152721	Passenger Lift	7
125	Installation 70B: Iziko Museum C2 - SAELV/SCR00202 - C2 (SL0411)	25 QUEEN VICTORIA STREET	-33.9289218, 18.4152721	Passenger Lift	7
126	Installation 70C: Iziko Museum C3 - SAELV/SCR00202 - C3 (SL0410)	25 QUEEN VICTORIA STREET		Passenger Lift	3
127	Installation 71A: Montagu Magistrates Court - Platform Lift (NL0670)	39 PIET RETIEF STREET, BERGSIG, MONTAGU	-33.7857655893, 20.123149253	Platform Lift	2
128	Installation 71A: Rygersdal Lift A	1 GROSVENOR ROAD, ROSEBANK	-33.9579011,18.4779132	Passenger Lift	8
129	Installation 71B: Rygersdal Lift B	1 GROSVENOR ROAD, ROSEBANK	-33.9579011,18.4779132	Passenger Lift	8
130	Installation 80A: Iziko Museum (NL0427)	25 QUEEN VICTORIA STREET, GARDENS, CAPETOWN		Passenger lift	3
131	Installation 81A: Plettenburg Magistrate Court (HO 0123)	9 JACKSON STREET, PLETTENBERG BAY	-34.0527296,23.3423737	Passenger lift	3
132	Installation 81B: Plettenburg Magistrate Court (HO 0124)	9 JACKSON STREET, PLETTENBERG BAY	-34.0527296,23.3423737	Passenger lift	3
133	Installation 81C: Plettenburg Magistrate Court (HO 0124)	9 JACKSON STREET, PLETTENBERG BAY	-34.0535065,23.3417614	Passenger lift	3
134	Installation 82A: Oudtshoorn Magistrate Court (PEE 1524)	713 BARON VAN RHEEDE STREET	-33.5712667, 22.2084418	Passenger Lift	6
135	Installation: Knysna	66 RIO STREET, KNYSNA		Stair Platform	3

**TERMS OF REFERENCE**

**CAPE TOWN: MAINTENANCE, REPAIRS AND REFURBISHMENTS OF LIFTS IN VARIOUS GOVERNMENT BUILDINGS: AREA-B: Tender No**



S/N	Installation name	Address	Coordinates	Type of unit	Stops
	Correctional Services				

## 12. ADDITIONS OR DELETION OF LIFT EQUIPMENT

Chairlifts, platforms and/or passenger lifts may be added during the contract term at a unit price agreed to by both parties.

Deleted units shall reduce the contract price by the same amount as originally included in the Contractor's bid.

## 13. 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's Representative or his representative.

Upon receipt of the contractor's claim the Employer's Representative's agent will verify the claim accordingly and issue an interim payment certificate whereupon an invoice can be submitted, the Employer's Representative must pay the Contractor within 30 days. This is subject to the invoicing being both correct and free from anomalies.

### 13.1. 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 7.2 and Clause 7.3 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 itemised 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 the location of the premises.
- e. No payment must be made by the Employer's Representative for any unauthorised service performed by the Contractor.

### **13.2. CLAIM FOR MAINTENANCE SERVICE**

For the routine comprehensive maintenance services, the Contractor is required to submit a payment claim with one original invoice and one copy of the Claim Form for each submission.

The Contractor is also required to submit a summary of the Service Report with copies of the 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 previously submitted Service Reports or outstanding Service Reports within the month shall be clearly indicated in the summary of the Service Report in detail.

maintenance service due to the date of its inclusion in the Contract by the following formula.

Payment for incomplete Quarter: -

The Employer's Representative 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 were indeed satisfactorily executed and accomplished.

The contractor shall check and verify the payment lists upon receipt of them and shall inform the Employer's Representative of any error within 14 days so that adjustment of the payment can be made accordingly.

### **13.3. DEDUCTION OF MAINTENANCE FEE FOR SUSPENSION OF SERVICE**

For any repetitive breakdown or any lift which cannot be returned to normal services by the Contractor for a period exceeding two (2) calendar days, a deduction in the monthly maintenance fee will be applied in accordance with the following details: -

- a. Employer's Representative written instruction, including alteration works 25%
- b. Reasons beyond the Contractor's control (e.g., misuse, vandalism, fire, etc.) 50%



- c. Breakdowns, repair, lack of spare parts, which arise from normal wear and tear 100% (minimum one month)

The actual deduction will be directly proportional to the number of days after the two (2) calendar day period. The Contractor will be required to settle the actual period of shutdown with the Employer's Representative on individual cases and deduct the appropriate amount from the monthly bills accordingly before submission. The payment for an incomplete month will be calculated not be certified and corrective action will be required from the contractor within a two (2) calendar day period.

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 as agreed upon by the contractor and the Employer's Representative.

- 1) Force Majeure.
- 2) Decommissioning of lift installation.

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 tests necessary for the safe resumption of services.

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

Frequency of Breakdown

% Deduction of Quarterly Maintenance Fee

- a. Breakdown, due to system fault(s), of the same lift over 2 times monthly 50%
- b. Breakdown, due to system fault(s), of the same lift over 4 times monthly 100%

#### **13.4. PAYMENT FOR WORKS COVERED BY APPROVED PURCHASE ORDERS**

13.4.1. For Works ordered undercover by a Works Order, the Contractor shall submit the payment claim with two (2) copies of the invoice, similar to that for routine maintenance, and shall attach copies of the original supplier's invoice where appropriate. The Employer's



Representative 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 Purchase Order number.

13.4.2. Additional works must be separately invoiced, and these must be submitted monthly as approved by the Employer's Representative.

Where such works are covered by the Schedules of Rates the schedules must be strictly adhered to in preparing the invoice.

### **13.5. PAYMENTS WITHHELD**

13.5.1. Failure by Contractor to provide services or comply with any provision of this Contract shall entitle the Employer's Representative (in addition to any other remedies Employer's Representative may have) to withhold payments due to Contractor as may be deemed in the Employer's Representative sole and absolute discretion to be reasonably necessary.

### **14. TERMINATION OF AGREEMENT**

14.1. The Employer's Representative may terminate this Agreement at any time upon thirty (30) days written notice to the Contractor due to the following reasons:

14.1.1. Unacceptable performance by the Contractor, which shall be determined in Employer's Representative sole and absolute discretion,

14.1.2. Contractor's failure to comply with all of its duties and obligations under this Contract,

14.1.3. Sale of building,

14.1.4. Permanent removal of equipment from service.

### **15. FAILURE TO PERFORM**

15.1. Contractor shall fully guarantee all work performed during the Term of the Contract and for a period of ninety (90) days after the termination date. Should the Employer's Representative determine during the Term or within thirty (30) days after termination that any required work has not been fully performed, has been performed improperly or not performed at all, the Contractor shall, after written notification by the Employer's Representative, correct said deficiency within ten (10) days.



Failure to correct will be construed as a default under the Contract and the Employer's Representative has the right to secure others to perform the services and deduct the costs of these services from the contractual amount due to the Contractor under this Agreement.

- 15.2. The Employer's Representative reserves the right to engage an independent party to perform an evaluation to determine responsibility pursuant to this paragraph.



## SECTION 2 – STANDARD SPECIFICATION REPAIRS

### PREAMBLE

This section of the terms of reference document is relevant to the repairs of lift equipment and the minimum requirements that should be adhered to for lift repairs.

### 1. HOISTING MACHINE

#### 1.1. TRACTION DRIVE

- (a) The brake shall be spring applied and electrically released by direct current. There shall be two shoes actuated by compression springs. The brake shall have sufficient power to hold the car at any landing with the normal amount of counterbalancing and with at least 150% of the rated load. The brake shall operate in the event of a power failure, or any other safety device designed to stop the lift.
- (b) An effective sound reducing material shall be installed between the bedplate of an or basement driving machine and the beams, the structural concrete slab, the shaft structure or the up-stands.
- (c) The driving machine and motor shall have sufficient capacity to operate the lift continuously at 100% of rated speed in both directions without overheating or hunting during levelling.
- (d) The lift machinery shall operate silently and without vibration. The lifts shall constantly operate and shall be maintained at noise levels not exceeding 56 DB (A). The noise levels shall be considered acceptable if it does not exceed 56 DB (A) measured on the landing and in the car enclosure.
- (e) Provision shall be made for a safe method of moving the car by hand in the event of a power failure and all the necessary equipment required to carry out this task shall be mounted neatly in the motor room and shall always remain on site.
- (f) The Contractor shall supply and install suitable structural steel beams with bearing plates for the mounting of the lift machine on the motor room floor, as well as supporting beams or deflector and secondary pulleys, as required. In the cases where machines are located below, the diverter sheaves shall be secured to the floor slabs and not to the overhead slabs, to prevent the transmission of vibration to the structure.



- (g) Anti-vibration mountings shall be provided to minimise the transmission of vibrations to the structure and to ensure the silent and smooth operation of all the equipment.

Tenderers shall describe the methods to be used to achieve the desired results.

## 1.2. HYDRAULIC DRIVE

- (a) An effective sound reducing material/vibration isolation shall be installed between the tank and the motor room wall.
- (b) Provision shall be made for a safe method of moving the lift by hand in the event of a power failure and all the necessary equipment required to carry out this task shall be mounted neatly in the motor room and shall always remain on site.
- (c) The lift machinery shall operate silently and without vibration. The lifts shall constantly operate and shall be maintained at noise levels not exceeding 56 DB (A). The noise level shall be considered acceptable if the noise does not exceed 56 DB (A) measured on the landing and in the car enclosure.
- (d) Oil coolers shall be provided if it is required to maintain an acceptable oil operating temperature.

The driving machine and motor shall have sufficient capacity to operate the lift continuously at 100% of the rated speed in both directions without overheating or hunting during levelling.

## 2. CONTROLLER

- (a) Programmable solid-state operation and motion controller shall be provided to control the operation, the starting, the stopping and the speed of the lift motor and to apply the brake automatically if any of the safety devices operate or the power fails.
- (b) All solid-state controllers shall be enclosed in ventilated sheet metal cabinets with integral blowers. All power resistors and heat generating transformers shall be mounted in separate enclosures if necessary to maintain the specified control panel internal temperature. The control cabinets shall be totally enclosed, vermin and insect proof, drip proof and dust proof to at least class IP42 of IEC 144.
- (c) Contacts breaking heavy currents shall be provided with magnetic blowouts and arc chutes. Contact surfaces shall be of silver-to-silver except those for heavy currents, where carbon-to-silver or carbon-to-copper contact surfaces may be used.



- (d) All terminals of the machinery and control gear shall be marked with distinctive letters or numbers, and corresponding markings shall appear on the contract drawings.
- (e) All controllers shall be generic manufactured, assembled and supplied.
- (f) As a standard, PLC lift controllers shall not be accepted. However, if these controllers are considered a generic product by the Representative/Agent and are able to meet the requirements of the specification, PLC controllers may be offered as an alternative if the following requirements are met:
  - (g) Documentation stating that the control system has been subjected to extensive testing and is verified as safe, reliable, and fully complies with SABS 1545 and all national, and local regulations and by-laws.
  - (h) If requested by the Representative/Agent, the Contractor shall provide the Representative/Agent with a full set of backup software/software modules and all associated maintenance related documentation including principal diagrams.
  - (i) Documentation from the PLC supplier is provided to verify the age of the model used, the date it is expected to be removed from the production line and the period the PLC supplier will guarantee parts and repairs.
  - (j) The Contractor shall verify that the PLC supplier is willing to maintain under a fully comprehensive agreement, the entire PLC unit(s) for at least 20 years.

### 3. CONTROL SYSTEM

- (a) The control system shall be capable of constantly producing the performance criteria specified.
- (b) The associated control equipment for each control system shall provide smooth acceleration and deceleration. In conjunction with the controller and machine, the system shall consistently provide the performance times specified.
- (c) The drive control system shall be capable of decelerating the lift to stand still without a "Levelling in" or "creeping in" phase. Only lifts with direct floor approach capabilities shall be accepted.
- (d) The motor drive unit shall provide a smooth lift performance including acceleration, steady velocity and deceleration plus levelling to various floors within the time allowance and levelling tolerances specified. This performance shall be consistent under all conditions of loading and in either direction of travel.



- (e) The motor drive unit shall be equipped with all necessary monitoring circuits to maintain a safe and reliable operation. These shall include but are not limited to the monitoring of the load, direction of rotation, speed, supply voltage, and operating currents.
- (f) The hoist motor shall be provided with a thermostatically controlled blower, if necessary, to dissipate the heat to maintain the equipment within the specified operating temperature range.
- (g) The control system shall provide a smooth acceleration and deceleration with levelling accuracy at all landings from no load to full rated load in the lift. This smooth operation shall be obtained for all lifts under stable conditions. A maximum of 0.8 seconds shall be allowed from the door close to car start.
- (h) The equipment shall be designed to operate at plus or minus 15% of normal feeder voltage and plus or minus 5% of feeder frequency without damage or interruption of lift service.
- (i) The control system shall be designed to operate the hoist motor continuously at 100% of rated speed and at 100% of rated load in both directions without overheating or hunting.

#### **4. MACHINE ROOM INDICATORS / ROPE MARKERS, MONITORS AND TESTING TOOLS**

- (a) Monitor and keyboard or handheld testing instruments for commissioning, pre-commissioning and fault analysis of the lift control system shall be provided and shall remain on-site at all times. Each group of lifts shall be supplied with its own monitor and keyboard or testing instrument.
- (b) As each lift travels through the lift shaft, a main hoisting rope marker shall indicate its floor level position by means of a mechanical selector attached to the machine control indicator. This indicator shall operate independently of the lift control and shall not be dependent on the lift supply for its operation.
- (c) The lift control system shall be capable of generating error/fault reports. Error logs for each lift showing at least forty (40) of the most recent faults shall be accessible. The error log shall clearly indicate the type of fault, lift number, date, and time the fault occurred.