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1. INTENT OF SPECIFICATION

This specification is intended to cover the complete installation of the lift plant and outlines the minimum equipment requirements; but does not cover detailed design and construction. Such details are recognized as being the exclusive responsibility of the Lift Contractor. It is hereby acknowledged that the Consulting Engineer neither invented nor developed any part of the lift system, but has made only 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.

2. STANDARD AND CODES

All work shall be in accordance with the requirements of the SABS 1545-1; SABS 1545-2; SABS 1545-5; SABS 1545-10; SABS 1543; "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.

All equipment shall be provided by the same manufacturer.

3. COMPLIANCE WITH REGULATIONS

The installation shall be erected and tested in accordance with the following Acts and regulations:

- a) The latest issue of SANS 10142: "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) Regulations of the local Gas board where applicable.

4. SCOPE OF WORK

4.1 WORK INCLUDED

Design and provide all labour, materials, equipment and services and perform all operations required for lift work as indicated on drawings or specified herein; including free maintenance during the guarantee period.

Supply and installation of all fixing materials and lifting equipment for the installation of equipment in the lift shaft.

Supply and installation of conduit and wiring for the car lighting and socket outlets and the termination and connection thereof in the distribution board.

The lift shaft shall be provided with permanently installed electric lighting, which shall be switched from both the pit and the top floor. The highest and lowest luminaries shall be mounted not more than 500mm from the top of the shaft and from the bottom of the pit respectively, with intermediate luminaries mounted at intervals not exceeding 7000mm. The minimum illumination at 1000mm above the car roof and the lift pit shall be 50 lux.

The installation of all electrical equipment shall comply with the requirements of the SANS 10142 and a Certificate of Compliance shall be issued therefore.

4.2 BUILDER'S & ELECTRICAL WORK

Builder's Work

The building is new. The shaft, pit and headroom dimensions must be confirmed at tender stage.

The following work shall be provided by the Lift Contractor:

- A) Regular site visits to ensure that the structure is built as per the approved drawings
- B) All scaffolding and rigging equipment for the lift installation to be provided by Lift Contractor

Electrical

The Lift Contractor shall work together with electrical contractor to ensure that the correct power supply and position of power supply is provided.

If applicable, the standby power supply would be sized to run a predetermined number of lifts simultaneously. Lift contractor to ensure lifts operate automatically under standby power supply.

5. PLANNING

The Lift Contractor shall familiarise himself with the limiting dimensions of the building in order to plan the most efficient sequence of work.

Penalties for delays are applicable as detailed in the contract documents.

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 per requirements and heat release data, location of all equipment on tops of cars, overhead beams and elevations, and reaction 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, 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 coordination 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 and shall be coordinated with the architectural drawings. Final design and material proposed for fixture faceplates and special equipment shall be approved by the Consulting Engineer.

Samples

All exposed materials and finishes shall be submitted to Consulting Engineer for approval in sample form.

The Lift Contractor shall furnish such samples as may be called for. The Consulting Engineer may reject all materials or workmanship not corresponding with the samples. All approved samples shall be held in safekeeping until such time as the applicable work 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 SABS 1545-10 Annex 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 being 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 make arrangements for such tests and shall give at least 72 hours written notice to the Consulting Engineer, before commencing the test.

In the event of the plant, equipment or installation not passing the test, the Consulting Engineer shall be at liberty to deduct from the Contact Amount all reasonable expenses incurred by the Employer and/or the Consulting Engineer attending the test.

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

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. APPLICATION TO DEPARTMENT OF LABOUR

The Lift Contractor shall submit all the necessary drawings and information to the Regional Director of the Department of Labour and shall submit the necessary application for the erection and use of the lifts, access goods lifts only and escalators.

9. OPERATING AND MAINTENANCE MANUAL

The Contractor shall be responsible for the compilation of three (3) complete sets of Operating and Maintenance Manuals.

All information shall be recorded and reproduced in electronic format as well as supplying the Consulting Engineer 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.

10. GUARANTEE

After the date of first delivery of the installation, 12-month free maintenance period will follow.

During this period, the Lift Contractor shall maintain the lift installation as per the requirements of the Occupational Health and Safety Act. This maintenance shall include systematic examinations, adjustments and lubrication of all lift equipment. Electrical and mechanical parts shall be repaired or replaced whenever it is required to maintain optimum performance, without additional cost to the Client, unless the condition was caused misuse or vandalism of the lift equipment or due to acts of God.

The work under this section shall be performed by competent, qualified personnel under the supervision, and in the direct employment of, the Lift Contractor and shall not be transferred to any non-affiliated agent. Contract maintenance and repair work shall be done during normal working hours and shall further provide emergency call-back service twenty-four (24) hours a day, seven (7) days a week.

11. MATERIALS AND WORKMANSHIP

- a) The work throughout shall be executed to the highest standards and to the entire satisfaction of the Consulting Engineer who shall interpret the meaning of the Contract Document and shall have authority to reject any work and materials, which, in his judgment, are not in full accordance therewith. All condemned material and workmanship shall be replaced or rectified as directed and approved by the Consulting Engineer.
- b) All work shall be executed in a first-class manner by qualified tradesman.
- c) The Contractor shall be fully responsible for his work and shall replace any of the work which may be damaged, lost or stolen. The Contractor shall protect the building and its contents against damage by him, his employees or sub-contractors and shall make good any damage thereto.
- d) The Contractor shall indemnify the Employer of all liability for damages arising from injuries or disabilities to persons or damage to property occasioned by any act or omission of the Contractor or any of his sub-contractors, including any and all expenses, legal or otherwise, which may be incurred by the Employer or Consulting Engineer in the defence of any claim, action or suit.
- e) The Contractor shall warrant that the materials and workmanship shall be of the highest grade, that the equipment shall be installed in a practical and first-class manner in accordance with the best practices and ready and complete for full operation. It is specifically intended that all material or labour which is usually provided as part of such equipment as is called for and which is necessary for its proper completion and operation shall be provided without additional cost whether or not shown or described in the Contract Document.
- f) The Contractor shall thoroughly acquaint himself with the work involved and shall verify on site all measurements necessary for proper installation work. The Contractor shall also be prepared to promptly furnish information relating to his own work as may be necessary for the proper installation work and shall cooperate with and coordinate the work of other as may be applicable.
- g) The Contractor shall inspect and verify that the existing power feeder system is compatible with the equipment offered and any changes or upgrading of the electrical supply shall be brought to the attention of the Consulting Engineer.
- h) Material and equipment damaged in transit shall be replaced with undamaged material.

- i) All components and their respective adjustment, which do not form part of the equipment installation work, but influence the optimum and safe operation of the equipment shall be considered to form part of, and shall be included in the Contractor's scope of works.
- j) All control equipment and serviceable items shall be installed and positioned such that they will be accessible and maintainable.
- k) The Contractor shall make sure that all safety regulations and measures are applied and enforced during the installation and guarantee periods to ensure the safety of the public and User Client.
- l) The Contractor is to include for all scaffolding required to complete the work required.

12. **IMPORTED EQUIPMENT**

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

13. **DESCRIPTION OF LIFT SYSTEM**

Description	Lift Number	Stops	Floors	Speed	Load	Units
Durban Station, Passenger	L1	3	LG, G, Concourse	1.0 m/s	≥ 700 kg	1
Durban Station, Passenger	L2	2	Platform, Concourse	1.0 m/s	≥ 4000 kg	1
Durban Station, Goods	L3,L4	2	Platform, Concourse	0.5 m/s	≥ 4200 kg	2
Durban Station, Passenger	L5	2	G, 1 st	1.0 m/s	≥ 600 kg	1
Kwa-Mashu Station, Passenger	L6	2	Road, Concourse	0.5 m/s	≥ 300 kg	1

14. **TECHNICAL REQUIREMENTS**

14.1 **L1 - PASSENGER**

14.1.1 **GENERAL**

Item	Description	Detail Requirements
(a)	Number of Units	1 OFF
(b)	Type of Lift	Passenger
(c)	Load	≥ 700 kg
(d)	Speed	1.0 m/s or faster
(e)	Lift Numbers	L1
(f)	Total Travel	10m (approximate - to be confirmed by Lift Contractor)
(g)	Number of Stops	3 Stops
(h)	No of Openings	3 vertical in line
(i)	Car Entrances	Side Entrance, Single sided
(j)	Floor Designation	Lower Ground, Ground, Concourse
(k)	Pit Depth	1500 mm (approximate – TBC)

Item	Description	Detail Requirements
(l)	Machine Room	Machine room-less
(m)	Voice Synthesizer	English
(n)	Output card for BMS communication	Potential free contacts for <ul style="list-style-type: none"> • Lift out of service • Power failure • Door Obstruction • Lift in fireman's service • Emergency alarm • Lift Position (floor)
(o)	Lift Configuration	Simplex

14.1.2 MACHINE

Item	Description	Detail Requirements
(a)	Drive	Traction, VVVF
(b)	Machine	Geared or gearless
(c)	Roping	1:1 or 2:1
(d)	Automatic Self-Levelling	Yes, As specified
(e)	Compensation	Yes, As specified

14.1.3 CONTROL OPERATION

Item	Description	Detail Requirements
(a)	Operation	Passenger lift
(b)	Up / Down	Yes, As Specified
(c)	Load Measuring	Overload, Landing call By-pass, Anti-Nuisance
(d)	Fireman's Service	Yes
(e)	Fireman's switch	Yes
(f)	Emergency Power Control	Yes
(g)	Evacuation Floor	Ground Level
(h)	Independent Control	Yes, As specified
(i)	Emergency Battery Back Up	Lift to ascent or descend to nearest floor and park with doors open

14.1.4 LANDING EQUIPMENT

Item	Description	Detail Requirements
(a)	Landing Doors Opening	1300 x 2400 mm Clear Opening (approximate – TBC)
(b)	Door Opening	Single Speed, Centre Opening
(c)	Door Control	VVVF Motion Control
(d)	Position Indicator	Digital Indicators on all floors
(e)	Waiting Lanterns	Yes
(f)	Gongs	Yes

Item	Description	Detail Requirements
(g)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(h)	Fire Switch	Yes

14.1.5 CAR EQUIPMENT

Item	Description	Detail Requirements
(a)	Number of COP's	One per Lift
(b)	Protection Drapes	Yes – Turn Buckle Fixing
(c)	Position Indicators	Yes
(d)	Direction Arrows	Yes
(e)	Intercom	Yes, Compliant with SABS 1545 – Linked to Control Room
(f)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(g)	Door Detectors	Yes
(h)	Signage	Yes, As Specified
(i)	Emergency Light	Yes, As Specified
(j)	Braille Call Buttons	Yes, As Specified
(k)	2 Hours Fire Rated Lobby	Yes, As Specified
(l)	Emergency Oxygen Cylinder	No
(m)	Fire Key Switch	Yes, As Specified

14.1.6 SHAFT DIMENSIONS AND EQUIPMENT

The below dimensions are approximate and shall be re-measured and confirmed by the successful tenderer prior to ordering any equipment.

Item	Description	Detail Requirements
(a)	Shaft Dimensions (1 side)	L1 = 2500 mm wide x 1900 mm deep (TBC)
(b)	Head Room	4200mm (TBC)
(c)	Pit Sump	1500mm (TBC)
(d)	Shaft Lighting	Yes, As Specified

14.1.7 CAR ENCLOSURE

Item	Description	Detail Requirements
(a)	Car Dimensions	2100 mm wide x 1100 mm deep
(b)	Car Clear Internal Height	2400 mm
(c)	Clear Door Opening	900 x 2100 mm

14.1.8 FINISHES

Item	Description	Detail Requirements
(a)	Car COP Faceplates	Full height next to car door SST with brushed Finish
(b)	Car Side Walls	50% Colorkote (or similar) glass panel, 50% mirror
(c)	Car Rear Wall	Colorkote (or similar) glass panel
(d)	Car Front	Stainless Steel
(e)	Car Floor	Marmoleum or equivalent
(f)	Car Ceiling	High Quality Suspended Ceiling with recessed Fluorescent Luminaires
(g)	Hand Rails	At a height of 900 mm above car floor on sides and rear of car
(h)	Car Doors	SST – Brushed Finish
(i)	Landing Doors	SST – Brushed Finish
(j)	Landing Frames	SST – Brushed Finish. Frame to cover full width of wall. Architraves to be splayed at 45°

14.2 L2 - PASSENGER

14.2.1 GENERAL

Item	Description	Detail Requirements
(a)	Number of Units	1 OFF
(b)	Type of Lift	Passenger
(c)	Load	≥ 4 000 kg
(d)	Speed	1.0 m/s or faster
(e)	Lift Numbers	L2
(f)	Total Travel	6 m (approximate - to be confirmed by Lift Contractor)
(g)	Number of Stops	2 Stops
(h)	No of Openings	2 vertical in line
(i)	Car Entrances	Side Entrance, Single sided
(j)	Floor Designation	Platform, Concourse
(k)	Pit Depth	1500 mm
(l)	Machine Room	Machine room-less
(m)	Voice Synthesizer	English
(n)	Output card for BMS communication	Potential free contacts for <ul style="list-style-type: none"> • Lift out of service • Power failure • Door Obstruction • Lift in fireman's service • Emergency alarm • Lift Position (floor)
(o)	Lift Configuration	Simplex

14.2.2 MACHINE

Item	Description	Detail Requirements
(a)	Drive	Traction, VVVF
(b)	Machine	Geared or gearless
(c)	Roping	1:1 or 2:1
(d)	Automatic Self-Levelling	Yes, As specified
(e)	Compensation	Yes, As specified

14.2.3 CONTROL OPERATION

Item	Description	Detail Requirements
(a)	Operation	Passenger lift
(b)	Up / Down	Yes, As Specified
(c)	Load Measuring	Overload, Landing call By-pass, Anti-Nuisance
(d)	Fireman's Service	Yes
(e)	Fireman's switch	Yes
(f)	Emergency Power Control	Yes
(g)	Evacuation Floor	Ground Level
(h)	Independent Control	Yes, As specified
(i)	Emergency Battery Back Up	Lift to ascent or descend to nearest floor and park with doors open

14.2.4 LANDING EQUIPMENT

Item	Description	Detail Requirements
(a)	Landing Doors Opening	1300 x 2400 mm Clear Opening (approximate – TBC)
(b)	Door Opening	Single Speed, Centre Opening
€	Door Control	VVVF Motion Control
(d)	Position Indicator	Digital Indicators on all floors
€	Waiting Lanterns	Yes
(f)	Gongs	Yes
(g)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(h)	Fire Switch	Yes

14.2.5 CAR EQUIPMENT

Item	Description	Detail Requirements
(a)	Number of COP's	One per Lift
(b)	Protection Drapes	Yes – Turn Buckle Fixing
(c)	Position Indicators	Yes

Item	Description	Detail Requirements
(d)	Direction Arrows	Yes
(e)	Intercom	Yes, Compliant with SABS 1545 – Linked to Control Room
(f)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(g)	Door Detectors	Yes
(h)	Signage	Yes, As Specified
(i)	Emergency Light	Yes, As Specified
(j)	Braille Call Buttons	Yes, As Specified
(k)	2 Hours Fire Rated Lobby	Yes, As Specified
(l)	Emergency Oxygen Cylinder	No
(m)	Fire Key Switch	Yes, As Specified

14.2.6 SHAFT DIMENSIONS AND EQUIPMENT

The below dimensions are approximate and shall be re-measured and confirmed by the successful tenderer prior to ordering any equipment.

Item	Description	Detail Requirements
(a)	Shaft Dimensions (1 side)	L2 = 3200 mm wide x 4200 mm deep (TBC)
(b)	Head Room	4200mm
(c)	Pit Sump	1500mm
(d)	Shaft Lighting	Yes, As Specified

14.2.7 CAR ENCLOSURE

Item	Description	Detail Requirements
(a)	Car Dimensions	2700 mm wide x 3700 mm deep
(b)	Car Clear Internal Height	2400 mm
(c)	Clear Door Opening	1500 x 2100 mm

14.2.8 FINISHES

Item	Description	Detail Requirements
(a)	Car COP Faceplates	Full height next to car door SST with brushed Finish
(b)	Car Side Walls	50% Colorkote (or similar) glass panel, 50% mirror
(c)	Car Rear Wall	Colorkote (or similar) glass panel
(d)	Car Front	Stainless Steel
(e)	Car Floor	Marmoleum or equivalent
(f)	Car Ceiling	High Quality Suspended Ceiling with recessed Fluorescent Luminaires
(g)	Hand Rails	At a height of 900 mm above car floor on sides and rear of car

Item	Description	Detail Requirements
(h)	Car Doors	SST – Brushed Finish
(i)	Landing Doors	SST – Brushed Finish
(j)	Landing Frames	SST – Brushed Finish. Frame to cover full width of wall. Architraves to be splayed at 45o

14.3 **L3 & L4 – GOODS HOISTS**

14.3.1 **GENERAL**

Item	Description	Detail Requirements
(a)	Number of Units	2 OFF
(b)	Type of Lift	Goods
(c)	Load	≥ 4 200 kg
(d)	Speed	0.5 m/s or faster
(e)	Lift Numbers	L3 & L4
(f)	Total Travel	6 m (approximate - to be confirmed by Lift Contractor)
(g)	Number of Stops	2 Stops
(h)	No of Openings	2 vertical in line
(i)	Car Entrances	Side Entrance, Single sided
(j)	Floor Designation	Platform, Concourse
(k)	Pit Depth	1500 mm
(l)	Machine Room	Machine room-less
(m)	Voice Synthesizer	English
(n)	Output card for BMS communication	Potential free contacts for <ul style="list-style-type: none"> • Lift out of service • Power failure • Door Obstruction • Lift in fireman's service • Emergency alarm • Lift Position (floor)
(o)	Lift Configuration	Simplex

14.3.2 **MACHINE**

Item	Description	Detail Requirements
(a)	Drive	Traction, VVVF
(b)	Machine	Geared or gearless
(c)	Roping	1:1 or 2:1
(d)	Automatic Self-Levelling	Yes, As specified
(e)	Compensation	Yes, As specified

14.3.3 CONTROL OPERATION

Item	Description	Detail Requirements
(a)	Operation	Goods Hoist
(b)	Up / Down	Yes, As Specified
(c)	Load Measuring	Overload, Landing call By-pass, Anti-Nuisance
(d)	Fireman's Service	Yes
(e)	Fireman's switch	Yes
(f)	Emergency Power Control	Yes
(g)	Evacuation Floor	Ground Level
(h)	Independent Control	Yes, As specified
(i)	Emergency Battery Back Up	Lift to ascent or descend to nearest floor and park with doors open

14.3.4 LANDING EQUIPMENT

Item	Description	Detail Requirements
(a)	Landing Doors Opening	2400 x 2400 mm Clear Opening (approximate – TBC)
(b)	Door Opening	Single Speed, Centre Opening
€	Door Control	VVVF Motion Control
(d)	Position Indicator	Digital Indicators on all floors
€	Waiting Lanterns	Yes
(f)	Gongs	Yes
(g)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(h)	Fire Switch	Yes

14.3.5 CAR EQUIPMENT

Item	Description	Detail Requirements
(a)	Number of COP's	One per Lift
(b)	Protection Drapes	Yes – Turn Buckle Fixing
(c)	Position Indicators	Yes
(d)	Direction Arrows	Yes
(e)	Intercom	Yes, Compliant with SABS 1545 – Linked to Control Room
(f)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(g)	Door Detectors	Yes
(h)	Signage	Yes, As Specified
(i)	Emergency Light	Yes, As Specified
(j)	Braille Call Buttons	Yes, As Specified
(k)	2 Hours Fire Rated Lobby	Yes, As Specified

Item	Description	Detail Requirements
(l)	Emergency Oxygen Cylinder	Yes, As Specified
(m)	Fire Key Switch	Yes, As Specified

14.3.6 SHAFT DIMENSIONS AND EQUIPMENT

The below dimensions are approximate and shall be re-measured and confirmed by the successful tenderer prior to ordering any equipment.

Item	Description	Detail Requirements
(a)	Shaft Dimensions (1 side)	L3,L4 = 2900mm wide x 3900 mm deep (TBC)
(b)	Head Room	4200mm
(c)	Pit Sump	1500mm
(d)	Shaft Lighting	Yes, As Specified

14.3.7 CAR ENCLOSURE

Item	Description	Detail Requirements
(a)	Car Dimensions	2400 mm wide x 3400 mm deep
(b)	Car Clear Internal Height	2400 mm
(c)	Clear Door Opening	2250 x 2100 mm

14.3.8 FINISHES

Item	Description	Detail Requirements
(a)	Car COP Faceplates	Full height next to car door SST with brushed Finish
(b)	Car Side Walls	50% Colorkote (or similar) glass panel, 50% mirror
(c)	Car Rear Wall	Colorkote (or similar) glass panel
(d)	Car Front	Stainless Steel
(e)	Car Floor	Marmoleum or equivalent
(f)	Car Ceiling	High Quality Suspended Ceiling with recessed Fluorescent Luminaires
(g)	Hand Rails	At a height of 900 mm above car floor on sides and rear of car
(h)	Car Doors	SST – Brushed Finish
(i)	Landing Doors	SST – Brushed Finish
(j)	Landing Frames	SST – Brushed Finish. Frame to cover full width of wall. Architraves to be splayed at 45°

14.4 **L5 - PASSENGER**

14.4.1 **GENERAL**

Item	Description	Detail Requirements
(a)	Number of Units	1 OFF
(b)	Type of Lift	Passenger
(c)	Load	≥ 600 kg
(d)	Speed	1.0 m/s or faster
(e)	Lift Numbers	L5
(f)	Total Travel	6 m (approximate - to be confirmed by Lift Contractor)
(g)	Number of Stops	2 Stops
(h)	No of Openings	2 vertical in line
(i)	Car Entrances	Side Entrance, Single sided
(j)	Floor Designation	Ground, First
(k)	Pit Depth	1500 mm
(l)	Machine Room	Machine room-less
(m)	Voice Synthesizer	English
(n)	Output card for BMS communication	Potential free contacts for <ul style="list-style-type: none">• Lift out of service• Power failure• Door Obstruction• Lift in fireman's service• Emergency alarm• Lift Position (floor)
(o)	Lift Configuration	Simplex

14.4.2 **MACHINE**

Item	Description	Detail Requirements
(a)	Drive	Traction, VVVF
(b)	Machine	Geared or gearless
(c)	Roping	1:1 or 2:1
(d)	Automatic Self-Levelling	Yes, As specified
(e)	Compensation	Yes, As specified

14.4.3 **CONTROL OPERATION**

Item	Description	Detail Requirements
(a)	Operation	Passenger lift
(b)	Up / Down	Yes, As Specified
(c)	Load Measuring	Overload, Landing call By-pass, Anti-Nuisance
(d)	Fireman's Service	Yes
(e)	Fireman's switch	Yes

Item	Description	Detail Requirements
(f)	Emergency Power Control	Yes
(g)	Evacuation Floor	Ground Level
(h)	Independent Control	Yes, As specified
(i)	Emergency Battery Back Up	Lift to ascent or descend to nearest floor and park with doors open

14.4.4 LANDING EQUIPMENT

Item	Description	Detail Requirements
(a)	Landing Doors Opening	1300 x 2400 mm Clear Opening (approximate – TBC)
(b)	Door Opening	Single Speed, Centre Opening
€	Door Control	VVVF Motion Control
(d)	Position Indicator	Digital Indicators on all floors
€	Waiting Lanterns	Yes
(f)	Gongs	Yes
(g)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(h)	Fire Switch	Yes

14.4.5 CAR EQUIPMENT

Item	Description	Detail Requirements
(a)	Number of COP's	One per Lift
(b)	Protection Drapes	Yes – Turn Buckle Fixing
(c)	Position Indicators	Yes
(d)	Direction Arrows	Yes
(e)	Intercom	Yes, Compliant with SABS 1545 – Linked to Control Room
(f)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(g)	Door Detectors	Yes
(h)	Signage	Yes, As Specified
(i)	Emergency Light	Yes, As Specified
(j)	Braille Call Buttons	Yes, As Specified
(k)	2 Hours Fire Rated Lobby	Yes, As Specified
(l)	Emergency Oxygen Cylinder	No
(m)	Fire Key Switch	Yes, As Specified

14.4.6 SHAFT DIMENSIONS AND EQUIPMENT

The below dimensions are approximate and shall be re-measured and confirmed by the successful tenderer prior to ordering any equipment.

Item	Description	Detail Requirements
(a)	Shaft Dimensions (1 side)	L5 = 2500 mm wide x 1900 mm deep (TBC)
(b)	Head Room	4200mm
(c)	Pit Sump	1500mm
(d)	Shaft Lighting	Yes, As Specified

14.4.7 CAR ENCLOSURE

Item	Description	Detail Requirements
(a)	Car Dimensions	2100 mm wide x 1100 mm deep
(b)	Car Clear Internal Height	2400 mm
(c)	Clear Door Opening	900 x 2100 mm

14.4.8 FINISHES

Item	Description	Detail Requirements
(a)	Car COP Faceplates	Full height next to car door SST with brushed Finish
(b)	Car Side Walls	50% Colorkote (or similar) glass panel, 50% mirror
(c)	Car Rear Wall	Colorkote (or similar) glass panel
(d)	Car Front	Stainless Steel
(e)	Car Floor	Marmoleum or equivalent
(f)	Car Ceiling	High Quality Suspended Ceiling with recessed Fluorescent Luminaires
(g)	Hand Rails	At a height of 900 mm above car floor on sides and rear of car
(h)	Car Doors	SST – Brushed Finish
(i)	Landing Doors	SST – Brushed Finish
(j)	Landing Frames	SST – Brushed Finish. Frame to cover full width of wall. Architraves to be splayed at 45o

14.5 L6 - PASSENGER

14.5.1 GENERAL

Item	Description	Detail Requirements
(a)	Number of Units	1 OFF
(b)	Type of Lift	Passenger
(c)	Load	≥ 300 kg
(d)	Speed	0.5 m/s or faster
(e)	Lift Numbers	L6
(f)	Total Travel	6 m (approximate - to be confirmed by Lift Contractor)
(g)	Number of Stops	2 Stops
(h)	No of Openings	2 vertical in line

Item	Description	Detail Requirements
(i)	Car Entrances	Side Entrance, Single sided
(j)	Floor Designation	Ground, Concourse
(k)	Pit Depth	1500 mm
(l)	Machine Room	Machine room-less
(m)	Voice Synthesizer	English
(n)	Output card for BMS communication	Potential free contacts for <ul style="list-style-type: none"> • Lift out of service • Power failure • Door Obstruction • Lift in fireman's service • Emergency alarm • Lift Position (floor)
(o)	Lift Configuration	Simplex

14.5.2 MACHINE

Item	Description	Detail Requirements
(a)	Drive	Traction, VVVF
(b)	Machine	Geared or gearless
(c)	Roping	1:1 or 2:1
(d)	Automatic Self-Levelling	Yes, As specified
(e)	Compensation	Yes, As specified

14.5.3 CONTROL OPERATION

Item	Description	Detail Requirements
(a)	Operation	Passenger lift
(b)	Up / Down	Yes, As Specified
(c)	Load Measuring	Overload, Landing call By-pass, Anti-Nuisance
(d)	Fireman's Service	Yes
(e)	Fireman's switch	Yes
(f)	Emergency Power Control	Yes
(g)	Evacuation Floor	Ground Level
(h)	Independent Control	Yes, As specified
(i)	Emergency Battery Back Up	Lift to ascent or descend to nearest floor and park with doors open

14.5.4 LANDING EQUIPMENT

Item	Description	Detail Requirements
(a)	Landing Doors Opening	1300 x 2400 mm Clear Opening (approximate – TBC)
(b)	Door Opening	Single Speed, Centre Opening
€	Door Control	VVVF Motion Control

Item	Description	Detail Requirements
(d)	Position Indicator	Digital Indicators on all floors
(e)	Waiting Lanterns	Yes
(f)	Gongs	Yes
(g)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(h)	Fire Switch	Yes

14.5.5 CAR EQUIPMENT

Item	Description	Detail Requirements
(a)	Number of COP's	One per Lift
(b)	Protection Drapes	Yes – Turn Buckle Fixing
(c)	Position Indicators	Yes
(d)	Direction Arrows	Yes
(e)	Intercom	Yes, Compliant with SABS 1545 – Linked to Control Room
(f)	Call Buttons	Approved, Vandal Proof Mechanical Micro-Push Button - Braille
(g)	Door Detectors	Yes
(h)	Signage	Yes, As Specified
(i)	Emergency Light	Yes, As Specified
(j)	Braille Call Buttons	Yes, As Specified
(k)	2 Hours Fire Rated Lobby	Yes, As Specified
(l)	Emergency Oxygen Cylinder	No
(m)	Fire Key Switch	Yes, As Specified

14.5.6 SHAFT DIMENSIONS AND EQUIPMENT

The below dimensions are approximate and shall be re-measured and confirmed by the successful tenderer prior to ordering any equipment.

Item	Description	Detail Requirements
(a)	Shaft Dimensions (1 side)	L5 = 2500 mm wide x 1900 mm deep (TBC)
(b)	Head Room	4200mm
(c)	Pit Sump	1500mm
(d)	Shaft Lighting	Yes, As Specified

14.5.7 CAR ENCLOSURE

Item	Description	Detail Requirements
(a)	Car Dimensions	2100 mm wide x 1100 mm deep
(b)	Car Clear Internal Height	2400 mm
(c)	Clear Door Opening	900 x 2100 mm

14.5.8 FINISHES

Item	Description	Detail Requirements
(a)	Car COP Faceplates	Full height next to car door SST with brushed Finish
(b)	Car Side Walls	50% Colorkote (or similar) glass panel, 50% mirror
(c)	Car Rear Wall	Colorkote (or similar) glass panel
(d)	Car Front	Stainless Steel
(e)	Car Floor	Marmoleum or equivalent
(f)	Car Ceiling	High Quality Suspended Ceiling with recessed Fluorescent Luminaires
(g)	Hand Rails	At a height of 900 mm above car floor on sides and rear of car
(h)	Car Doors	SST – Brushed Finish
(i)	Landing Doors	SST – Brushed Finish
(j)	Landing Frames	SST – Brushed Finish. Frame to cover full width of wall. Architraves to be splayed at 45o

15.1 ESCALATOR E1 – LOWER TO GROUND

15.1.1 GENERAL

Item	Description	Detail Requirements
(a)	Floor Designation	Lower ground to Ground Floor
(b)	Number of Units	1 Pair (Up and down)
(c)	Arrangement	Parallel
(d)	Step Width	800 mm
(e)	Angle of inclination	35° (TBC)
(f)	Speed	0.5 m/s
(g)	Vertical Rise	4000 mm (approximate - to be confirmed by Contractor)
(h)	Handrail Type	Press roller (easily accessible)
(i)	Escalator pit dimension	(1250x4250x1400) (h x l x w)
(j)	Voltage	400/3/50

15.1.2 MACHINE

Item	Description	Detail Requirements
(a)	Drive	Worm Gear
(b)	Brake	Auxiliary brake
(c)	Truss Painting Colour	RAL 7036 Platin Grey
(d)	Lubrication	Automatic
(e)	Type	Chain (lubrication free)
(f)	Weather proofing	IP55

(g)	Controller protection	IP54 (semi outdoor)
(h)	Harness Protection	IP33

15.1.3 CONTROL OPERATION

Item	Description	Detail Requirements
(a)	Operation Mode	Autostart & Standby (reduced speed when no passengers)
(b)	Key start switch	On skirt at both ends.
(c)	Controls	Handrail speed/ break monitor
(d)	Fault Display	Required
(e)	Missing step detector	Required
(f)	Brake lift monitor	Required
(g)	Step upthrust device	Required

15.1.4 SAFETY DEVICES

Item	Description	Detail Requirements
(a)	Emergency stop buttons	Autostart and Standby
(b)	Motor control & protection	Variable speed drive depending on use.
(c)	Chain Control	On skirt at both ends.
(d)	Handrail inlet protection	Handrail speed/ break monitor
(e)	Step inlet protection	Required
(f)	Step lowering device	Required
(g)	Step band locking device	Required
(h)	Inspection run sockets	Required
(i)	Main Switch	Lockable switch including thermal and magnetic current protection

15.1.5 LIGHTING OPTIONS

Item	Description	Detail Requirements
(a)	Traffic Light	Moving arrow
(b)	Comb lights	Required
(c)	Comb light colour	White
(d)	Step gap light	Understep lighting (green)

15.1.6 ESCALATOR FINISHES

Item	Description	Detail Requirements
BALUSTRADE, (HAND RAIL OPTION)		
(a)	Balustrade Type	Slim Type (Safety Glass 10mm)
(b)	Balustrade height	1000mm

(c)	Handrail Colour	Black
(d)	Interior panel	Ball joints perpendicular to the truss
(e)	Deck Material	Hairline Stainless Steel 304#
STEP, COMB, SKIRT, ACC. COV		
(a)	Step Type	Aluminium
(b)	Step Colour	Silver
(c)	Step Demarcation	Yellow painted 3 sides
(d)	Skirt Material	304# stainless steel
(e)	Skirt Brush Deflector	Skirt brush silver, aluminium holder
(f)	Comb segment mat	Yellow plastic (RAL 1023)
(g)	Front plate colour	Black
CLADDING		
(a)	Side Cladding Material	Hairline Stainless Steel 304#
(b)	Extent of side cladding	Both sides
(c)	Soffit cladding material	Hairline Stainless Steel 304#
(d)	Side cladding style	Cladding perpendicular to truss.
(e)	Anti climb barrier	Yes.

15.2 **ESCALATOR E2 – GROUND TO FIRST**

15.2.1 **GENERAL**

Item	Description	Detail Requirements
(a)	Floor Designation	Ground Floor to First
(b)	Number of Units	1 Pair (Up and down)
(c)	Arrangement	Parallel
(d)	Step Width	800 mm
(e)	Angle of inclination	35° (TBC)
(f)	Speed	0.5 m/s
(g)	Vertical Rise	4000 mm (approximate - to be confirmed by Contractor)
(h)	Handrail Type	Press roller (easily accessible)
(i)	Escalator pit dimension	(1250x4250x1400) (h x l x w)
(j)	Voltage	400/3/50

15.2.2 **MACHINE**

Item	Description	Detail Requirements
(a)	Drive	Worm Gear
(b)	Brake	Auxiliary brake
(c)	Truss Painting Colour	RAL 7036 Platin Grey
(d)	Lubrication	Automatic
(e)	Type	Chain (lubrication free)

(f)	Weather proofing	IP55
(g)	Controller protection	IP54 (semi outdoor)
(h)	Harness Protection	IP33

15.2.3 CONTROL OPERATION

Item	Description	Detail Requirements
(a)	Operation Mode	Autostart & Standby (reduced speed when no passengers)
(b)	Key start switch	On skirt at both ends.
(c)	Controls	Handrail speed/ break monitor
(d)	Fault Display	Required
(e)	Missing step detector	Required
(f)	Brake lift monitor	Required
(g)	Step upthrust device	Required

15.2.4 SAFETY DEVICES

Item	Description	Detail Requirements
(a)	Emergency stop buttons	Autostart and Standby
(b)	Motor control & protection	Variable speed drive depending on use.
(c)	Chain Control	On skirt at both ends.
(d)	Handrail inlet protection	Handrail speed/ break monitor
(e)	Step inlet protection	Required
(f)	Step lowering device	Required
(g)	Step band locking device	Required
(h)	Inspection run sockets	Required
(i)	Main Switch	Lockable switch including thermal and magnetic current protection

15.2.5 LIGHTING OPTIONS

Item	Description	Detail Requirements
(a)	Traffic Light	Moving arrow
(b)	Comb lights	Required
(c)	Comb light colour	White
(d)	Step gap light	Understep lighting (green)

15.2.6 ESCALATOR FINISHES

Item	Description	Detail Requirements
BALUSTRADE, (HAND RAIL OPTION)		
(a)	Balustrade Type	Slim Type (Safety Glass 10mm)

(b)	Balustrade height	1000mm
(c)	Handrail Colour	Black
(d)	Interior panel	Ball joints perpendicular to the truss
(e)	Deck Material	Hairline Stainless Steel 304#
STEP, COMB, SKIRT, ACC. COV		
(a)	Step Type	Aluminium
(b)	Step Colour	Silver
(c)	Step Demarcation	Yellow painted 3 sides
(d)	Skirt Material	304# stainless steel
(e)	Skirt Brush Deflector	Skirt brush silver, aluminium holder
(f)	Comb segment mat	Yellow plastic (RAL 1023)
(g)	Front plate colour	Black
CLADDING		
(a)	Side Cladding Material	Hairline Stainless Steel 304#
(b)	Extent of side cladding	Both sides
(c)	Soffit cladding material	Hairline Stainless Steel 304#
(d)	Side cladding style	Cladding perpendicular to truss.
(e)	Anti climb barrier	Yes.

15.3 **ESCALATOR E3 – GROUND TO FIRST**

15.3.1 **GENERAL**

Item	Description	Detail Requirements
(a)	Floor Designation	Ground to First
(b)	Number of Units	1 Pair (Up and down)
(c)	Arrangement	Parallel
(d)	Step Width	900 mm
(e)	Angle of inclination	35° (TBC)
(f)	Speed	0.5 m/s
(g)	Vertical Rise	4000 mm (approximate - to be confirmed by Contractor)
(h)	Handrail Type	Press roller (easily accessible)
(i)	Escalator pit dimension	(1250x4250x1500) (h x l x w)
(j)	Voltage	400/3/50

15.3.2 **MACHINE**

Item	Description	Detail Requirements
(a)	Drive	Worm Gear
(b)	Brake	Auxiliary brake
(c)	Truss Painting Colour	RAL 7036 Platin Grey

(d)	Lubrication	Automatic
(e)	Type	Chain (lubrication free)
(f)	Weather proofing	IP55
(g)	Controller protection	IP54 (semi outdoor)
(h)	Harness Protection	IP33

15.3.3 CONTROL OPERATION

Item	Description	Detail Requirements
(a)	Operation Mode	Autostart & Standby (reduced speed when no passengers)
(b)	Key start switch	On skirt at both ends.
(c)	Controls	Handrail speed/ break monitor
(d)	Fault Display	Required
(e)	Missing step detector	Required
(f)	Brake lift monitor	Required
(g)	Step upthrust device	Required

15.3.4 SAFETY DEVICES

Item	Description	Detail Requirements
(a)	Emergency stop buttons	Autostart and Standby
(b)	Motor control & protection	Variable speed drive depending on use.
(c)	Chain Control	On skirt at both ends.
(d)	Handrail inlet protection	Handrail speed/ break monitor
(e)	Step inlet protection	Required
(f)	Step lowering device	Required
(g)	Step band locking device	Required
(h)	Inspection run sockets	Required
(i)	Main Switch	Lockable switch including thermal and magnetic current protection

15.3.5 LIGHTING OPTIONS

Item	Description	Detail Requirements
(a)	Traffic Light	Moving arrow
(b)	Comb lights	Required
(c)	Comb light colour	White
(d)	Step gap light	Understep lighting (green)

15.3.6 ESCALATOR FINISHES

Item	Description	Detail Requirements
BALUSTRADE, (HAND RAIL OPTION)		
(a)	Balustrade Type	Slim Type (Safety Glass 10mm)
(b)	Balustrade height	1000mm
(c)	Handrail Colour	Black
(d)	Interior panel	Ball joints perpendicular to the truss
(e)	Deck Material	Hairline Stainless Steel 304#
STEP, COMB, SKIRT, ACC. COV		
(a)	Step Type	Aluminium
(b)	Step Colour	Silver
(c)	Step Demarcation	Yellow painted 3 sides
(d)	Skirt Material	304# stainless steel
(e)	Skirt Brush Deflector	Skirt brush silver, aluminium holder
(f)	Comb segment mat	Yellow plastic (RAL 1023)
(g)	Front plate colour	Black
CLADDING		
(a)	Side Cladding Material	Hairline Stainless Steel 304#
(b)	Extent of side cladding	Both sides
(c)	Soffit cladding material	Hairline Stainless Steel 304#
(d)	Side cladding style	Cladding perpendicular to truss.
(e)	Anti climb barrier	Yes.

16. ACCESS, SCHEDULE OF WORK & DISPOSAL OF RUBBLE

The Lift contractor shall liaise with the Client Representative on site regarding daily scheduling of the works, access routes, disposal of rubble/fill and temporary storage of equipment.

PART VI
SCHEDULE OF INFORMATION

SUBJECT : SCHEDULE OF DAYWORK RATES**PART VI.1 PAGE 1 OF 1**

The following information is requested to enable the Architect to determine the cost of work undertaken by the Subcontractor on Architect's instructions.

Claim for work due on Architect's site instructions will only be considered if accompanied by Subcontractor's timesheets and supplier's invoices for materials used, duly signed by Architect or Clerk of Works.

Rates at which authorized daywork will be carried out excluding builder's discount.

Labour	-	Artisan	per hour	_____
	-	Labourer	per hour	_____
	-	Apprentice	per hour	_____
Materials	-	Percentage to be added to the cost of materials after deduction of all discounts		_____
Fares and Transports	-	Percentage to be added to nett cost, Fares Transport and other direct cost.		_____

NOTE

The labour rates quoted shall include all insurances, holidays with pay and traveling time payments, incentive bonus and overtime premiums except for overtime payment where overtime working is authorized in writing by the Architect.

DATE : _____

SIGNED: _____

SUBJECT : SCHEDULE OF INFORMATION

PART VI.2 PAGE 1 OF 3

The tenderer shall complete the following schedule giving details of the various items of materials or equipment that he includes in his offer and also details of any deviations.

ITEM	INFORMATION
LIFT	
Manufacturer's name	
Country of origin	
% South African manufacture	
Performance:	
Car speed in m/s	
Maximum carrying capacity of each lift car	
LIFT MOTOR	
Maker's Name	
Type	
Rated output (kW)	
Full load current (Amps)	
Starting current (Amps)	
Type of Brake	
DRIVE	
Worm material	
Worm wheel material	
Type end bearings	
Gear ratio	
Worm above or below worm gear	
DISC DRIVE	
Disc diameter	
Type of bearings	
Groove type	
ROPES	
Manufacturer	
Diameter	
No. of ropes	
Length of ropes	

Break strength of ropes	
Tensile strength of steel	
No of strings	
Wires per string	
Wire diameter	
Construction of ropes	
COUNTER WEIGHTS	
Total Mass (kg)	
Percentage compensation live weight (%)	
GUIDES	
Type and profile	
Weight	
Counterweight guides	
SHOES	
Type	
Lubrication	
MACHINE BEAMS	
Number of and position	
LANDING DOORS	
Total mass (kg)	
Thickness (mm)	
Dimensions (mm)	
Finish	
LIFT CAR DOORS	
Total Mass (kg)	
Thickness (mm)	
Dimensions (mm)	
Finish	
Mechanism	
Safety mechanism	
CAR	
Net inside dimension (width x depth x height) in mm	
Finish of car	
Clear width and height of car and landing entrances	

Type of door drive mechanism offered	
Lead Time for delivery	
Maintenance: Ordinary or All inclusive	

SIGNED: _____

DATE : _____

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SUBJECT : SCHEDULE OF DEVIATIONS

PART VI.3 PAGE 1 OF 1

The tenderer shall give details below of any deviations to the specification that he proposes including reference to the particular clauses to which the deviations relate.

CLAUSE No.	DEVIATION