

Pending Amendments to Clauses in the Griffith University Design Guidelines & Procedures Version 21

Section 23.00 Lifts

All the requirements of this Section are Mandatory

Delete all existing Clauses except 23.01 Lift Contracts and replace with the following

23.02 New Project Lift Design

The lift design parameters for new lifts shall be as follows:

- a) Population based on actual numbers or 1 person per 12m² whichever is the greater.
- b) 12% two-way handling capacity
- c) Average waiting time of 30 seconds
- d) Machine room less traction lifts at a minimum.
- e) Calculations to be based on a maximum 70% car loading.
- f) Lift cars shall be designed for
 - Goods movement, furnishings and other project specific equipment
 - Lift cars to be minimum 1400mm wide x 2100mm deep x 2300mm high with 1000mm wide x 2100mm high doors. The 2100mm depth is to meet stretcher requirements with a rear wall handrail.
 - Minimum dimensions may otherwise be approved in writing by the Superintendent where the dimensions detailed above are unachievable and meet the minimum requires for disability access.
 - Where goods/passenger lifts are nominated on the Space Description Forms, the lift dimensions and car doors shall be sized accordingly.
 - NCC Building Code of Australia (latest code at time of tender)
 - AS1735 including EN81-20:50 (latest codes at time of tender)

The design team shall submit a report detailing the predicted performance including traffic analysis studies and project specific requirements.

23.03 Existing Project Lift Design

Lift upgrades shall retain the existing structure including lift wells, machine rooms, landing frames and doors.

Options for upgrading or replacing the lift equipment shall be provided including compliance with current codes (disability access and stretcher compliance), redundancy of equipment, performance etc. Performance assessment shall be based on the same criteria as for new lifts.

Lift upgrades shall fully comply with AS735 Part 1 regarding code requirements with any non-compliances due to building constraints documented.

The lift upgrade/replacement components shall be energy efficient and environmentally friendly utilizing the latest technology.

23.04 Lift Energy Efficiency

The lift shall comply with the version of the NCC Building Code of Australia Section J – Energy Efficiency current at the time of tender.

J6.2a	Lift Cars – Maximum illumination power density – 3W/m ² (note lighting also required to meet AS1735 Part 12)
J6.7a	<p>Idle and Standby energy performance in accordance with ISO25745-2, Note applies to standby power used after 30 minutes</p> <p>Less than or equal to 800kg – 2</p> <p>800kg to 2000kg – 3</p> <p>2001kg to 4000kg – 4</p> <p>Greater than 4000kg - 5</p>
J6.7	<p>Lifts must be configured to ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes (not to be turned off if trapped with passengers)</p> <p>Achieve energy efficiency class in Table 6.7b</p> <ul style="list-style-type: none"> • Usage category - 4 • Energy efficiency class in accordance with ISO 25745-2 - C • Number of trips per day – 600 <p>Daily kWh and energy efficiency class to be provided based on the above usage assumptions.</p>
J6.8	<p>Escalators and moving walkways</p> <p>Ability to slow between 0.2 m/s and 0.05 m/s when unused for more than 15 minutes</p>

23.05 Provision for People with Disabilities

Lifts shall be designed in accordance with

- a) AS 1735.12
- b) NCC Building Code of Australia E3.6
- c) AS1428 Parts 1 and 2

In addition, a continuous handrail shall be provided to three sides of the car and shall be positively located such that it is not subject to vandalism.

The only control panels required are those for people with disabilities and mounted on the side walls. Two control panels shall be provided in each lift.

The floor level number shall also be embossed into the door frame to provide tactile level identification for the visually impaired.

Door scanning devices shall be installed to provide additional protection from closing lift doors.

23.06 Keying System & Keys

Only master keying shall be used. Maison keying will not be approved.

The lock/hardware shall include:

- a) Fire Service
- b) Exclusive Service
- c) Security key switches
- d) Machine Room Access
- e) Landing Controllers for MRL Lifts

Construction cylinders will be used during construction of any new buildings or alteration works.

At practical completion of the construction and before handover to GU, the construction cylinders shall be removed and replaced with barrels and keys to one of the following University Restricted series:-

Nathan	Abloy Pro-tec profile
Mt Gravatt	Abloy Pro-tec profile
Logan	Abloy Disc Pro profile
Qld Conservatorium Griffith University	Abloy Pro-tec profile
Queensland College of Art South Bank	Abloy Pro-tec profile
Gold Coast	Abloy Pro-tec profile

The Contractor shall source all final keys and barrels from the University's Locksmith, John Barnes & Co.

The standard number of keys to be cut is to be set out in the Lock Schedule.

All keys shall be stamped with a continuous numbering system for that campus by the lock cylinder supplier. These numbers are to be entered on to the Lock Schedule.

Refer to [Section 11.17](#) for details.

23.07 Lift Car Finishes

The Lift interior finishes shall be designed to be robust and able to withstand damage from rigorous use. The following shall be provided as a minimum:

Lift Car Front Wall	Linished Stainless Steel
Lift Car Doors	Linished Stainless Steel
Car finishes	
Side Walls	Textured stainless steel – Rimex 2WL/5WL or similar.
Rear Wall	Textured stainless steel – Rimex 2WL/5WL or similar below handrail, tinted full width mirror above handrail.
Drop ceiling	Stainless steel with energy efficient LED lights
Skirting	Stainless steel
Flooring	Lift car floors shall be covered with an approved 3mm thick studded sheet rubber flooring to meet critical radiant flux values in accordance with the current version of the BCA. Flooring shall be adhesive fixed strictly in accordance with the manufacturer's recommendations. The slip rating shall be R10 at a minimum.
Car Operating Panel	Main and auxiliary vertical panels, stainless steel both located to suit persons with disabilities. GPO at bottom of main panel
Car Screen	LCD Screen in each car operating panel

Car Buttons	Vandal Resistant Dewhurst dual illuminating white on blue
Telephone	Hands free connected to the University 24-hour security office
Security	The facility shall be provided in all lifts to park the lift with the doors closed at the nominated floor level and to lock off access to and from any floor by means of a key switch for that floor. This panel is to be mounted on the wall adjacent or in the 'call' button at the nominated floor. Security may also be provided by access card control Project Specific, allowance in trailing cables for future minimum
Security Camera	Project Specific, allowance in trailing cables for future minimum
Load Notice	Engraved in car operating panel
Handrail	Stainless Steel complying with AS1735 Part 12 on side and rear walls
Bump Rails	Stainless Steel for goods lifts
Protective Blankets	One set for each different lift
Fan	Minimum 30 air changes per hour
Compliance	AS1735 Part 12, AS1735 for fire rating of car finishes and landing doors. Upgraded door entrances shall have an opinion (BRANZ or similar).
Minimum Car height	2300mm
Car Finishes Weight Allowance	Actual finishes weight or minimum 300kg whichever is the greater.
Level Numbering	To start at Level 1, where level 1 is not the main access floor signage to be located adjacent to the button advising of main entry/exit floor.
Voice Annunciation	Australian synthesized voice
Glass Lift Cars	To be air conditioned

23.08 Landings

Landing Doors	Stainless Steel
Landing frames	Stainless Steel, full depth
Landing faceplates	Stainless Steel, minimum 500mm from any internal corner
Buttons	Vandal Resistant Dewhurst dual illuminating white on blue to match lift car buttons. Pit access key switches to be in landing faceplate.
Warning	"Do not use lifts if there is a fire" to be engraved in faceplate.

Security	In or beside faceplate as required
Direction Indicators	Beside or above lift entrances

23.09 Lift Pits and Lift Shafts

Pits	<p>Lift pits should extend to solid earth, in accordance with AS 1735 and that buffer loads are transmitted to cause least effect on the structure.</p> <p>Lift pits must be kept dry at all times.</p> <p>For any situation where problems with any form of water seepage or run of are suspected, then suitable means shall be provided for easy removal of the water without accessing the pit.</p> <p>Appropriate means may be an adjacent pump external to the shaft or, where a sullage collection vehicle can approach the pit, a 50 mm pipe from the base of the dry sump to a convenient external point. This external point should be provided with a female 50 mm <i>Camlock</i> coupling and closure plug.</p> <p>Lift pits shall have water sensors that when water is detected shall move the lift car to the second bottom level or level above main entry in the case of basements.</p>
Shafts	<p>Lift shafts shall be fire rated in accordance with the NCC – Building Code of Australia.</p> <p>Shafts shall have fire protection as required by relevant codes, wet head sprinklers shall not be used at the top of lift shafts where MRL lifts are installed.</p> <p>Glass lift shafts shall have some form of cooling where exposed to direct sunlight or heat.</p>

23.10 Machine Room/Machinery Space

Machines	<p>Machines shall have a minimum of 180 starts per hour with regenerative drive options and battery back-up.</p> <p>Hydraulic drives shall be VF with soft start.</p>
Machine Room air Conditioning	<p>Shall be air conditioned, either connected to the chilled water system or split systems where chilled water is not available.</p>
Machinery (MRL) ventilation	<p>Provide a minimum of 1% of the shaft plan area. The ventilation shall have mesh flush with inside the shaft and weatherproof louvres on the external face of the shaft.</p>
Machine Room Enclosures	<p>To be waterproof and minimum 2-hour fire rated. Lift motor rooms shall have alarms as required by the relevant Australian Standard.</p>
Alarms	<p>Voltage free contacts shall be provided for the LMR alarms for connection to the BMS by the mechanical contractor.</p> <p>Machine room-less traction lifts shall be provided with an equipment 'Fault' output for connection to the BMS by the mechanical contractor.</p>

23.11 Lift Performance

Levelling	Levelling shall not exceed +/-5mm under all load conditions
Vertical and Horizontal acceleration	18 milli-g measured peak to peak
Acceleration rate	Not to exceed 1.0m/s ²
Jerk rate	Not to exceed 1.8m/s ³
Noise Levels	55dba inside lift car with fan running and doors opening or closing. 70dba in machine room or machinery area
Records	Lift performance details shall be recorded and detailed in maintenance manuals and in machine rooms/machinery areas. The performance data shall include door times, flight times (one floor and terminal floor runs), ride quality, levelling accuracy, acceleration and jerk rates, sheave shaft loading plus any other parameters used to commission the lifts.

23.12 Telephone

'Alarm/Telephone' buttons and all necessary signage shall be installed in accordance with AS 1735.12.

Provide a 'hands free' automatic dialing telephone activated by the 'Alarm/Telephone' button in the car control station.

The telephone wiring is to comply with the relevant ACA requirements and be terminated at an FDP mounted in the ceiling space above the LMR door or control panel for MRL lifts and on the external face. Provide a label to read 'FDP Above'.

Provide a label adjacent the 'hands free' telephone indicating the 'Building Name', 'Building Number' and 'Lift Identification Number'.

All lift telephones shall dial direct to the Security Office on the site/campus on which it is located.

23.13 Emergency Lowering Power Pack

On sensing of 'loss of power supply' the lift shall automatically run to the nearest floor and the doors opened.

23.14 Workshop Drawings

Provide workshop drawings at a scale of 1:20 for all aspects of the works. The Manufacturer or installation of the lift shall not take place until all relevant shop drawings have been reviewed by the Superintendent. **Drawings to be provided in pdf format.**

23.15 'As Constructed' Drawings

Refer to [Section 27.00](#) for specific requirements with respect to 'As Constructed' drawings and 'Operating & Maintenance' manuals.