

Section 15 Lifts.



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Revision History

Revision Number	Description	Section Owner	Date
Issue 1	Original Draft	-	-
Issue 2	Internal Review	-	-
Issue 3	First public circulation	-	<i>October 2016</i>
Issue 4	Updated Issue	<i>Rod Oudshoorn</i>	<i>September 2019</i>

Current Document Acceptance

Update Authored	Approved	Date
<i>Rod Oudshoorn</i>	<i>Rod Oudshoorn</i>	<i>September 2019</i>

Key Updates from Previous Issue

Revision Item	Details
<i>15.1.3 Approved Lift Providers and Servicers</i>	<i>Servicing currently achieved via a comprehensive service contract, note added.</i>
<i>15.2.4 Emergency Communication and Alarms</i>	<i>Remote monitoring requirements identified</i>
<i>15.2.5 Specialist Functions</i>	<i>New Clause</i>
<i>15.3.6 Lift Drive</i>	<i>New Clause</i>
<i>15.3.7 Door Protection Device</i>	<i>New Clause</i>
<i>15.4.1 Commissioning</i>	<i>Further requirements added</i>

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15.1 Overview

15.1.1 Purpose

This section of the Design Standard Guidelines outlines the University of Canterbury's preferences for Lift systems and design parameters. It is intended to be read and implemented during design in conjunction with **Section 01 – General** and any project specific brief and agreements.

15.1.2 Preferred Systems

Lifts should be designed and constructed for a life span of 50 years.

Machine Room less lifts are the preferred type to be used in our facilities.

15.1.3 Approved Lift Providers and Servicers

OTIS and Schindler are currently the two approved lift providers servicing the University. All lifts are to be maintained by the provider of the lifts. *Currently this is achieved via a comprehensive service contract.*

15.1.4 Seismic Design Considerations

All lift design is to consider the building's seismic Importance Level (IL) and provide comparable performance to that adopted elsewhere in the building's design.



15.2 Design Concepts

15.2.1 Lift Types

All lifts shall be suitable for continuous operation.

The following types of lifts are acceptable for use at the University:

- Machine room-less lifts
- Machine room lifts
- Hydraulic lifts for buildings less than 4 storeys. Nominal rated speed of approximately 0.5 metres per second minimum.

15.2.2 Acoustics

The lift designer shall provide details of all isolation pads and mountings for review by the Acoustic Consultant during the developed design stage.

15.2.3 Controls

15.2.3.1 Interfaces with Existing Systems

The lift controls and wiring shall allow for the connection of an access control system to control the operation of the lift including wiring for installation of an access card reader in the lift car.

Emergency lighting is to be designed on a standalone basis.

15.2.3.2 Microprocessor Based Lift Control Systems

The lift control system is to be capable of being supported for the life of the equipment.

15.2.4 Emergency Communication and Alarms

All emergency communications are to be remotely monitored by the lift company servicing the lift.

The lift control system is to be remotely monitored at all times by the lift servicing company, who shall initiate a service response on fault activation.

Remote monitoring is also to be able to support the collection of lift performance metrics such as; trip count, annual fault count, up time and mean time between failures (MTBF).

15.2.5 Specialist Functions

Where specialist controls functions, such as dangerous goods operation, are required across multiple units within a building or complex the operational steps must be the same on all lifts with this provision.

15.2.6 Fire Precautions

- All landing doors shall have a minimum one (1) hour fire rating.
- All lift shafts shall have a minimum two (2) hour fire rating.
- All ventilation panels on the lift cars shall be of the concealed type and located at the rear and sides of the car, except in the case where the lift front and rear serve as access points to the car. Then the ventilation panels shall be at the side of the car.
- On all floors where indicator panels indicate the status of the lift services, the fire status shall be displayed.
- The lift is to return to the designated floor in fire mode



15.3 Systems & Equipment

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15.3.1 Lift Car

The lift car shall incorporate the following features:-

- Carpet to 1200mm on all walls.
- Carpet tiles to floor
- single point non-maintained emergency lighting;
- ceiling mounted exhaust fan as required by the standard
- car position indicator (LCD Digital) shall be an integral part of the control panel, which shall be hinged;
- LCD Digital Landing indicator;
- the control panel shall contain an exclusive key switch regulating ON, OFF and PARK facilities. Control buttons shall match those described above;
- tactile labelling of lift buttons to code;
- centre-parting stainless steel doors with electronic motor control;
- lift and counterweight guides shall be the self-lubricating roller type;
- building evacuation speaker and associated wiring;
- voice units for disabled passengers shall be supplied and installed;
- "Fireman" operation mode
- Light Emitting Diode (LED) lights.
- All controls in the lift car shall be accessible to disabled passengers, including emergency communication and alarms.
- At least one lift in every building shall be configured for stretcher use.

15.3.2 Lift Machine Room

Where a lift machine room is required, the design shall comply the following requirements:

- uninhibited 24 hour access to the machine room'
- be controlled by the University masterkey system.
- mechanical ventilation shall be provided where required and room shall be provided with filtered fresh air intake;
- lifting points (eyes) shall be located in the machine room roof slab over hoisting machines and access hatches shall be complete with *certified, permanent and painted* "Safeload" notices;
- have concrete plinths for support of machine beams;
- all finishes to walls, floor and ceiling shall be durable and painted in full gloss enamel for easy cleaning. Floors shall be properly sealed and receive 2 coats of grey coloured paving paint;
- non-maintained emergency luminaire/s shall be installed in the machine room;

15.3.3 Door Frames and Indicators

All indicating lights shall be on long-life LCD or LED digital type. Landing buttons shall be vandal-proof.

The designer shall ensure that each level is correctly labelled according to the University's room numbering system.

In the Level 1 lobby, the travel of each lift shall be displayed adjacent to the lift call buttons.

15.3.4 Lift Protection

Lifts may need protection when being used as a goods lift. Provision of fixings to allow protection of the walls in the lift should be provided to all lift cars.

Temporary lift car protection mats and support tags shall be offered as an option.

15.3.5 Lift Well / Shaft

A sump pump pit and cover shall be installed *in the well*. The sump pump shall run to the sewer mains.

Concrete plinths for support of buffers, etc. shall be specified.

Means of access into the pit/overrun shall be provided.

15.3.6 Lift Drive

Regenerative drive technology is to be utilized with typical savings determined for the solution proposed.

Automatic recovery operation allowing lift to return to nearest floor on power outage is to be included as part of drive functionality.

15.3.7 Door Protection Device

A minimum of 2D infrared door protection is required. Where improved safety functionality can be achieved without nuisance activation, 3D protection is to be considered.

15.4 Installation Requirements

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15.4.1 Commissioning

The University requires Inspection and Test Plans (ITP) for commissioning procedures associated with all services to demonstrate that the system operates in accordance with the Service Provider's design intent.

The format ITPs to be used shall be agreed with the University of Canterbury Project Manager prior to preparation to enable the University to nominate certain procedures and project stages to be witnessed by a specialist independent Quality Auditor. The Service Provider can nominate who they wish to utilise for this role, subject to UC's approval.

The Quality Auditor will;

- *Review the quality of the physical install*
- *Witness key commissioning tests to confirm actual system performance*
- *Specifically witness or undertake ride quality analysis*

The format of the ITP is to be submitted to the University for approval at least 20 working days before commencement of testing.

Results of commissioning and testing shall be included in the Operation and Maintenance manuals together with the completed ITPs.

The lift designer shall provide a schedule of all contract performance data for the proposed installation including the following:

- quality of ride;
- rated speed;
- design door opening/closing times;
- rated capacity of lift;
- expected allowable levelling variance.



Compliance Checklist

Project Name:

Date:

Submitting Consultant:

Design Stage:

Section 15 – Lifts

Compliance Checklist

Complies
Does Not Comply
Not Applicable
Comments:

1.0 Section 01 – General

#		Complies	Does Not Comply	Not Applicable
	All Clauses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15.1 Overview

15.1.1	Purpose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.1.2	Preferred Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.1.3	Approved Lift Providers and Servicers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.1.4	Seismic Design Considerations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15.2 Design Concepts

15.2.1	Lift Types	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.2	Acoustics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.3	Controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.4	Emergency Communication and Alarms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.5	Specialist Functions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.6	Fire Precautions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15.3 Systems & Equipment

15.3.1	Lift Car	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3.2	Lift Machine Room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3.3	Door Frames and Indicators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3.4	Lift Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3.5	Lift Well / Shaft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3.6	Lift Drive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3.7	Door Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15.4 Installation Requirements

15.4.1	Commissioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Project Name:

Date:

Submitting Consultant:

Design Stage:

Section 15 – Lifts

Compliance Checklist

Complies
Does Not Comply
Not Applicable

Comments:

Date:

Acceptable

University Reviewer:

Acceptable subject to comments

Signed:

Resubmission required

