St Mary's University Twickenham London

Lift (Elevator) and Release of Trapped Passengers Policy

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Contents

1. Scope 3

2. Background and Introduction 3

3. Lifts 3
   - 3.1 Lift Performance 3
   - 3.2 Quantity of Service 4
   - 3.3 Quality of Service 4
   - 3.4 Use of lifts 5
   - 3.5 Behavioral Scenarios 5

4. Legislation 5

5. Servicing of lifts 6

6. Procedure for releasing trapped passengers 8

Appendix 1 Locations and types of lifts on site *9*

Appendix 2 Lift Maintenance Contact Details *10*

1. Scope

This document provides guidance on the provision of lifts and operations regarding lifts at the University. It provides guidance on the factors that should be considered by Facilities Management Services regarding the servicing of the lifts and guidance on the process to be adopted when considering the release of trapped passengers in lifts. The guidance also addresses their use in both new and existing buildings and for certain non- fire incidents, such as a Major Incident (MI). MIs are where there is some warning of a significant non-fire threat to a building.

It must be noted that NO lifts on the University premises must be used during fire evacuations. Most lifts on site are designed to 'ground' in the event of fire alarm activation or a fire, i.e. they are designed to bring the lifts to the designated lobby as quickly as possible and to immobilize it there.

2. Background and Introduction

There are 16 lifts in total within the University buildings (see Appendix 1).
Lifts can be of two types, either hydraulic or electric.

Over the years there has been an increase in the number of lifts installed on site to address accessibility issues for disabled users.

3. Lifts

3.1 Lift performance

Lifts are characterised by their load capacity and speed of operation (which is determined by both their maximum acceleration and speed). These factors influence the quantity of service which a lift can provide, though the control system managing how the lift responds to calls from the call points will also have an effect.

The load capacity of a lift is often given in two forms. The maximum mass of the load being transported is reasonably straightforward. From this maximum mass the load capacity tends also to be expressed as the number of people which that lift can accommodate. It should, however, be noted that the maximum number of people is determined using the assumption that each person weighs 75 kg. In practice, the number of people that will use a lift is defendant upon the floor area of the lift and the willingness of individuals to enter the lift as it becomes progressively more crowded. It is very important that all users of lifts are aware of the loading capacity of the lifts as overloading will result in lift breakdown and trapped passengers.

The speed of operation of a lift is dependent on the maximum speed at which a lift can travel, how quickly a lift can accelerate to that speed, and how quickly it can decelerate at its destination. The speed of acceleration is limited by the need for the lift to provide a comfortable environment for its passengers.

Lift management systems determine how efficiently a lift makes use of its load capacity and speed of operation to transport passengers. The management system will decide how the lift reacts to calls at the levels serviced by the lift and the calls made by the passengers within the lift. These management systems can be customized to suit the occupancy of a building and how its use may change during the course of the day.

The design of a lift system is based upon two factors: the anticipated quantity of service that will be required, and the intended quality of service that will be provided.

3.2 Quantity of service

Quantity of service (particularly in the case of new builds) can be determined via assessment of the occupancy of a building, in terms of both population density and the nature of the occupancy (commercial, domestic, office, etc). This assessment will lead to an expected passenger frequency expressed as the number of passengers per 5 minutes. Depending on the type of occupancy, as described earlier, passenger frequency will be taken as either the average during the course of an entire day, or the average during the periods of peak traffic through the building (such as beginning and/or end of the working day in an office). Existing buildings have the obvious advantage of being able to provide measured data upon which designs can be based, but the lower frequency with which these tend to be subject to renovation or present scenarios that can be applied to other new builds mean that many designers are forced to make decisions based on anticipated usage rather than known usage.

3.3 Quality of service

Quality of service can be determined in a number of ways but generally deals with the amount of time that passengers will spend during, or have to wait for a particular part of, a journey using a lift. For example, quality of service can be determined from the amount of time that a passenger must wait between pressing the call button for a lift and the arrival of the lift. With respect to design, the quality of service that a lift will provide could be considered to be the compromise that is made between the need to deal with passengers as quickly and efficiently as possible, and the need to limit the amount of resources that are fed into the design and use of the lift system.

It is common knowledge, as often indicated on signs located in and around lifts that conventional lifts are not to be used in the case of emergency. BS EN 81-73:2005 [12] currently stipulates the actions to be carried out by a non-fire-fighting lift in the event of a fire. These actions are designed to bring that lift to the designated lobby as quickly as possible and to immobilize it there. This is to avoid passengers becoming trapped in a lift during a fire, to allow the fire and rescue service to quickly confirm that lifts are unoccupied (achieved through their inspection at the designated lobby), and to avoid passengers being exposed to heat and smoke by using the lift during a fire.

3.4 Use of Lifts

For most potential fire scenarios, there would be a period of up to several minutes before lifts may be exposed to fire effluent. Other emergency evacuation scenarios, such as a Major Incident (MI), may not involve contamination of building interior spaces. Even so, it may be feasible to allow their use but conditions may deteriorate (e.g. smoke in the lift shaft) to the extent that their use becomes unadvisable. Therefore, the use of lifts during a MI is also not permitted on the University premises as part of an emergency evacuation plan, since it is possible to envisage a number of fire scenarios or other emergency scenarios in which their use may become hazardous after a few minutes. For example, in two major hotel fires in the United States (MGM Grand and DuPont Plaza), occupants died when lifts descended to the fire floor and opened onto unprotected areas involved in the fires. Other occupants had escaped previously by using the lifts.

3.5 Behavioral scenarios

An important consideration is the Design Behavioral Scenario. For an 'asleep and unfamiliar' behavioral scenario, such as in a hotel, pre-movement times can be very long (up to approximately an hour). This means that emergency escape stairs do not reach flow capacity, so that the use of lifts or escalators does not necessarily result in a more rapid evacuation. Also, occupants attempting to leave via unprotected escalators or lifts at a late stage of an incident are more likely to encounter life-threatening conditions. In the Halls of Residence there is a situation which could be 'asleep and familiar' scenario which would result in delayed start times but quicker exiting than in a hotel situation. However, exiting at a later stage via a lift could then lead to a similar situation as that described above.

4 Legislation

The Regulations below apply to new lifts. Some of them are common to both new and in-service lifts. This is not a comprehensive list of all the legislation that applies to lifts but is an indication of the complexity of the law.

- The Construction (Design & Management) Regulations (CDM) 2007, as amended 2013
- Disability Discrimination Act (as amended 2005) and replaced with Equality Act 2010.
- Health & Safety at Work Act 1974
- Management of Health & Safety at Work Regulations (MHSWR) 1999(as amended 2006)
- Workplace (Health, Safety & Welfare) Regulations 1992
- Provision & Use of Work Equipment Regulations (PUWER) 1998
- Lifting Operations & Lifting Equipment Regulations (LOLER) 1998

5 Servicing of Lifts

For 15 years prior to 1998, people with an interest in lifts recognised that the Guidance Note PM7 issued by the Health & Safety Executive (HSE) entitled 'Lifts: Thorough Examination and Testing' required revision. In 1998 The Safety Assessment Federation (SAFed) published 'Lifts Guidelines: Guidelines on the Thorough Examination and Testing of Lifts' commonly referred to as LG1 which replaced PM7. LG1 has in turn been withdrawn and superseded by 'Guidelines on the supplementary tests of in-service lifts' published in February 2006. These Supplementary tests can be requested by the competent person in support of the Thorough Examination as result of a risk assessment that the competent person carries out on site.

SAFed state in their Foreword to the 2006 Guidelines state that "if the guidance provided is followed, it will normally be regarded as sufficient to comply with health & safety law in respect of supplementary testing in support of the thorough examination." The objective is to ensure the condition of any type of lift is safe for all persons with access to it. Legislation that implemented European Directives enacted since 1992 has profound safety implications for anyone 'in control' of a lift. Supplementary tests are designed to comply with all existing legislation but do not replace the need for regular maintenance.

Qualified LIFTSURVEY consultants can carry out Supplementary tests on lifts. At the University this is carried out by Murray Lifts.

A 'THOROUGH EXAMINATION' (as required by L.O.L.E.R. 1998) is a detailed examination, performed by a 'competent person': its purpose is to determine the condition of the lift installation and report upon its suitability for continued safe use. A thorough examination may, in the judgement of the competent person, be supplemented by:

- additional tests and/or examinations
- dismantling
- access to, or removal of, hidden parts

A 'competent person' is defined as: someone who has such practical and theoretical knowledge and actual experience of the type of machinery or plant which they have to examine as will enable them to detect defects or weaknesses which it is the purpose of the examination to discover; and to assess their importance in relation to the strength and functions of the particular machinery or plant. The term 'competent person' can refer both to individuals and to the companies by whom they are employed. At the University the 'competent person' is Murray Lifts.

A report of examination produced as a result of the Thorough Examination indicates the condition of the lift at that time. The absence of any defects requiring attention – either immediately or within a specified period – implies that, subject to normal use, no change of duties and with adequate maintenance, the lift is suitable for safe use until the next scheduled Thorough Examination. The statutory Thorough Examination of lifts must be carried out by a competent person.

It is therefore the responsibility of Facilities Management Services at the University to ensure the following:

- that statutory periodic thorough examinations are undertaken.
- having any necessary remedial action carried out by a competent repairer.
- informing the 'competent person' of all relevant in-house safety procedures.
- providing such preparation/assistance – including unrestricted safe access as is requested by the 'competent person'.
- having copies of relevant records readily available for review by the competent person.
- ensuring that, where a 'competent person' directs that tests or detailed examinations of certain components be performed by a competent third party, that the third party is suitable for such works.
- conveying to the 'competent person' an appropriate record of the results of tests or examinations performed by competent third parties.

The 'competent person' shall in turn, on completion of the thorough examination, be responsible for;

- issuing a report to FMS, as soon as is practicable, on the condition of the lift
- notifying FMS, immediately if a defect which is or could become a danger to persons is found. In the event of the building being unattended by a person of responsibility the 'competent person' should arrange whenever possible for the lift to be isolated and made safe.
- notifying FMS of the period within which a defect does not present an immediate danger to persons should, in the opinion of the 'competent person', be remedied.
- sending to the relevant enforcing authority, as soon as is practicable, a copy of the report relating to a defect which creates an existing or imminent risk of serious personal injury.

The duties of a 'competent person' are complete when a thorough examination has been carried out and a report issued.

6 Procedure for releasing trapped passengers

In the event that passengers are trapped in a lift the following procedure must be followed:

1. Each lift has a call point inside the car and the trapped passenger must press this button in order to alert someone of the situation.
2. The call, in the first instance, goes directly to the Security Emergency Phone where a Security Officer will take the details. If trained maintenance staff* are available, they can release the passengers if not then contact Murray Lifts Services Emergency Breakdown Line (see Appendix 2).
3. Murray will then respond within the hour to arrive and release the trapped passenger(s).
4. If the call is missed by Security the phone system automatically redirects the call to the Murray Lifts Breakdown Number where the call will be logged, and engineers will respond within the hour to release the trapped passenger(s).
5. In the event of a wheelchair user or very distressed passenger being trapped in the lift contact trained onsite staff* to release passengers or as a last resort the Fire Service must be called to assist.

*It is important to note that the releasing of trapped passengers is not to be carried out by any member of staff at the University who has not been trained.

Location and types of lifts on site

Appendix 1

Location	Make/Model	Type	Capacity
E Block	Ace lifts	Hydraulic Passenger Lift	8 persons 630kg
N Block	Stannah System 21 Maxi MRLI M8	Hydraulic Passenger Lift	8 persons 630kg
K Block	Murray Lift Group Ltd	Hydraulic Passenger Lift	8 persons 630kg
Chapel/LRC	Ace Lifts	Hydraulic Passenger Lift	8 persons 630kg
The Exchange Lift 1	Motala MC2000	Guided chain system	6 people 500kg
The Exchange Lift 2	Kone Mono Space Elevator	Roped traction elevator with a side counterweight.	8 people 630 kg
The Exchange Lift 3 Goods Only	Edmo Lift	Hydraulic Scissor Lift Platform	2000Kg Goods Only
De Marillac Halls Lift 1	Stannah System 21 Maxi M6	Hydraulic Passenger Lift	8 persons 630kg
De Marillac Halls Lift 2	Stannah System 21 Maxi M6	Hydraulic Passenger Lift	8 persons 630kg
J Block Lift 1	Ace lifts	Hydraulic Passenger Lift	8 persons 630kg
J Block Lift 2	Aritco Public Lift	Hydraulic Passenger Lift	DDA Lift max 6 people/500kg
60 Waldegrave	Otis/manor Lifts Ace	Hydraulic Passenger Lift	5persons or 375kg
Naylor Building	Phoenix u5883	Powered Lift for Persons with Impaired Mobility	2 persons plus wheel chair Max 400kg
Shannon Conference Suite	Stannah 270010	Hydraulic Passenger Lift	8 persons 630kg
Waldergrave Suite	Aritco Public Lift	Hydraulic Passenger Lift	DDA Lift max 6 people/500kg
L block	Aritco Public Lift	Hydraulic Passenger Lift	DDA Lift max 6 people/500kg

Lift Maintenance Contact Details

Murray Lifts Group

Main Office Number	**020 8300 0614**
Emergency Breakdown Number	**020 8300 0614**
Office Email Addresses	**sales@murrayliftgroup.co.uk**

All breakdowns include the reporting of trapped passengers.

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