

[Section 14200](#)

Elevators

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Cranes and Hoists

## 1.0 **GENERAL**

### 1.1 **Related UBC Guidelines**

- .1 UBC Technical Guidelines.
- .2 *Division 17 (17100 – 1.4.12)*

### 1.2 **Co-ordination Requirements**

- .1 UBC Project Manager, UBC Electrical Engineer, UBC Universal Access Coordinator.
- .2 Co-ordinate with Architectural, Elevator, Electrical, Mechanical and Structural Consultants.
- .3 *UBC Information Technology (IT).*

### 1.3 **Description**

- .1 UBC requirements for Elevators.

## 2.0 **GENERAL MATERIAL AND DESIGN REQUIREMENTS**

### 2.1 **Quality Control and Assurance, Submissions & Maintenance**

- .1 Elevator Maintenance
  - .1 For a period of one year from certified date of substantial performance of the Project, the maintenance of the elevators will be the responsibility of the Elevator Sub-Contractor.
  - .2 This maintenance shall include regular inspection, adjustment, and lubrication, call back for faulty operation, and the replacement of all parts and components which fail for any reason other than through malicious damage or gross misuse of the equipment. This shall include parts replaced as part of warranty as well as parts to be replaced due to normal wear and tear.
  - .3 The elevator contractor shall respond without extra charge to call backs on a 24 hour basis. However, all work other than call backs shall be done during regular working hours.
  - .4 The elevator contractor shall provide a daily summary of work performed whether for regular maintenance or for warrantee repair.
  - .5 UBC at their discretion can put any new elevator equipment under the global maintenance contract for the campus or enter into an extended maintenance term with the original equipment manufacturer.
- .2 Technical Information
  - .1 The supplier shall include all technical information to allow the UBC staff to perform all maintenance of the equipment, including all diagnostic efforts to determine the cause of malfunction. This shall include complete as-built electrical drawings, parts list, and instruction manuals as listed below.
  - .2 One additional copy of technical information shall be provided in digital (CD) format.

- .3 The following information and/or submissions are required:
  - .1 Three (3) copies of complete operating and maintenance manuals complete with up to date technical bulletins. Manuals shall contain complete parts lists with exploded views of all assemblies.
  - .2 Three (3) copies of complete adjusting, start-up, diagnostic and troubleshooting manuals.
  - .3 Three (3) copies of as built wiring diagrams.
  - .4 Three (3) copies of final shop drawings showing General Arrangement and Layout, Cabs and Entrances.
  - .5 A minimum of five (5) copies of each key used except keys specifically for maintenance and inspection personnel.
  - .6 One (1) archive copy of all software used in the control system and special interface tools.
  - .7 Manuals shall be sufficiently detailed and shall include spare parts lists, drawings, adjustment procedures, testing procedures, troubleshooting procedures, diagnostic instructions, recommended spare part lists and the manufacturers recommended maintenance tasks and frequencies.
  - .8 It is understood that the software provided shall be for archive purposes only and shall be for the owner's exclusive use. A non-disclosure agreement will be signed by a representative of the owner if required to protect the manufacturer rights to the exclusivity of the software.
  
- .3 Maintenance Training
  - .1 Provide formal and proper training of the owner's elevator staff for the new equipment provided.
  - .2 Prior to commencement of the warranty maintenance period provide a full day training session for the preventative maintenance, repair and trouble-shooting of the new equipment, control systems and software provided.
  - .3 The training should consist of approximately 4 hours of classroom type training followed by hands on session at the site. All drawings and manuals and the information contained shall be covered and verified at the site. The satisfactory provision of this training shall be a requirement for obtaining Substantial Completion of the work.
  - .4 Provide a second training session prior to completion of the warranty period to cover any specific areas the owner may request. This session shall last approximately 4 hours and the agenda shall be planned in close consultation with the owner and the owner's staff.

## 2.2 Qualification of Design Consultant

- .1 All elevators at UBC must be designed by an elevator consultant approved by UBC Building Operations.

## 2.3 Standards

- .1 All equipment installed shall conform to the latest edition of the CSA B44 Safety Code for Elevators; the requirements of the BC Elevating Devices Safety Act and Regulation; the latest edition of the BC Building Code; the requirements of the local fire department and any related Provincial regulations; and the local regulations concerning access for persons with disabilities.

## 3.0 GENERAL REQUIREMENTS AND STANDARDS FOR PASSENGER ELEVATORS

### 3.1 Type of Elevator

- .1 For buildings with 2 or 3 stops, the first choice of elevator would be a twin post holeless hydraulic to eliminate the need for well hole drilling and eliminate the risks of buried cylinders. Telescopic plungers can be considered on a case by case basis but should be limited to three (3) stop elevators. .
- .2 Where the choice could be made for either hydraulic or traction. The decision should lean towards traction elevators where the traffic will be heavy, or where the design is trying to get by with slightly fewer elevators than theoretically required, or where the design requires a maximum of output from each elevator. Where initial cost is the prime consideration, and the traffic demand will be light, and if there are no soil problems, then the hydraulic type may be considered.
- .3 Roped hydraulic elevators shall not be considered.
- .4 Dual jack, holeless hydraulic elevators are preferred for two or three (3) stop applications to eliminate the need for a cylinder hole and buried hydraulic cylinders.
- .5 For buildings with 4 to 12 elevator stops, use High Efficiency, Environmentally-Friendly Gearless Traction Elevators or Conventional Geared or Gearless Traction Elevator equipment. The machine room shall be located directly overhead unless height restrictions preclude a rooftop machine room, in which case, locate the machine at some other floor, generally at the lowest landing, adjacent to the hoistway or in the hoistway in a machine-room-less (MRL) configuration. An overhead machine room should be preferred unless there are mitigating factors why it cannot be provided.
- .6 For buildings exceeding 12 elevator stops, generally use gearless traction elevator, with machine located overhead.
- .7 Lifts for persons with disabilities, handicapped lifts or Limited Use Limited Application (LULA) lifts shall not be acceptable as passenger elevators.

### 3.2 Size of Elevators

- .1 Passenger elevators shall have a minimum capacity of 1135 kg for basic single unit applications unless building requirements mandate a larger platform size. Larger buildings with more than one elevator shall typically use 1360 kg to 1820 kg platform sizes based on the demand and other building requirements. Elevator sizes shall be chosen from typical North American manufacturer's standard sizes unless the needs of the building dictate the use of non-standard sizes.

### 3.3 Location of Elevators

- .1 Elevators should be located centrally in the building or where the walking distance to any point on the floor plate does not exceed a maximum of 45 m. Where the location of the elevator(s) exceeds 45 m from any point in the building then separate elevator service should be provided in distributed segments of the building where the walking distance from any point in the building to the elevator(s) does not exceed 45 m.

### 3.4 Number of Elevators

- .1 For buildings with 3 or less elevator stops, and a gross area of less than 5,000 m<sup>2</sup>, provide two elevators.
- .2 For buildings with 4 or more elevator stops, use traction type elevators. If the gross area exceeds approximately 6000 m<sup>2</sup> provide a group of two elevators. If the gross area of the building exceeds 10,000 m<sup>2</sup> provide a group of three elevators.

Note - The quantity of elevators should be selected based on providing a % of handling capacity based on the gross building population rather than square footage. Likewise, a requirement for a maximum waiting time should be considered. The "waiting" time is measured in a dimension called an "interval" that is measured in seconds. These vary for building type and usage, for instance a busy classroom or office block the handling capacity should be 10-12% of the building population in a five minute interval and the interval should not exceed 35 seconds. A residential building should have a handling capacity of 5-7% of the building population and a maximum interval of 40 seconds.

- .3 If distributed elevator configurations are used then the total number of elevators required shall be increased by approximately 65% to account for the inefficiencies of the distributed arrangement and imbalances in demand.

### 3.5 Speed of Elevator

- .1 The speed of the elevator shall be within the following ranges and chosen to suit the specific building requirements;
- .2 Hydraulic passenger elevators to be 0.5 to 0.75 m/s.
- .3 Geared or High Efficiency Gearless traction passenger elevators to be 1.0 to 2.0 m/s.
- .4 Gearless elevators to be 2.5 m/s and greater.

### 3.6 Door Type and Size

- .1 At least one (1) elevator must meet the BC Building Code requirements to be able to carry a stretcher (or gurney) in the prone position. It is generally accepted that a 1135 kg elevator with 1066 (42") wide side-opening doors meets this criteria.
- .2 Where traffic demand is expected to be light, the "stretcher" elevator (in US English = a Gurney) can have a single speed side-opening door, in which case a standard 1,135 Kg passenger elevator meeting the stretcher requirements is adequate.
- .3 Where there is already an elevator which can accommodate a stretcher the remaining passenger elevator(s) in the building should be provided with centre-opening doors for efficiency.

- .4 Front and rear door arrangements should be avoided, and used only where the design of the building makes any other solutions impossible. Where there are "staggered" floor levels which have to be served by an elevator, then rear doors are unavoidable.

#### **4.0 GENERAL REQUIREMENTS AND STANDARDS FOR FREIGHT ELEVATORS AND SERVICE ELEVATORS**

##### **4.1 Type of Elevator and Class**

- .1 Elevators required specifically for freight and freight handlers only shall be designated as true freight elevators. Where a combination of freight and passenger use is required the elevator shall be designated as a passenger elevator but shall be designed with the freight use in mind to provide a service type elevator.
- .2 Provide Class C3 loading where single piece or large concentrated loads must be moved which will exceed 25% of the rated capacity of the elevator (but will not exceed the rated capacity of the elevator). Provide Class C1 or C2 loading as appropriate where the elevator is required to be loaded or unloaded by an industrial truck.
- .3 The use of freight platform lifts or material lifts as defined in the B44 Safety Code for Elevators shall not be acceptable unless very special conditions exist to justify these restricted use configurations.

##### **4.2 Number of Elevators**

- .1 Where a freight elevator is required, generally one (1) will be adequate except where demand may require more.

##### **4.3 Size of Elevators**

- .1 Freight and Service elevators shall be sized to suit the largest object which has to be moved and the capacity rating shall be appropriate for the anticipated needs. Elevator sizes shall be chosen from typical North American manufacturer's standard sizes unless the needs of the building dictate the use of non-standard sizes.

##### **4.4 Speed of Elevator**

- .1 The speed of the elevator shall be within the following ranges and chosen to suit the specific building requirements; Service elevators shall be treated as passenger elevators for determination of speed and other criteria.
- .2 Hydraulic freight elevators 0.3 to 0.5 m/s.
- .3 Geared traction freight elevator up to 2000 Kg 1.0 to 0.5 m/s – 1.75 m/s (i.e. 100 – 350 fpm).
- .4 Geared traction freight elevator > 2000 kg. 0.5 m/s – 1.0 m/s.

##### **4.5 Type of Doors**

- .1 For Service (Passenger) elevators provide power operated horizontally sliding passenger doors. The use of two (2) speed side-opening or two (2) speed centre-opening doors may be utilized to provide a wider opening to suit the anticipated needs. The use of three (3)

speed doors or other special arrangements such as swing doors is not acceptable unless very special conditions exist to justify these more unusual arrangements.

- .2 Vertical sliding bi-parting doors shall only be used on true freight elevators where no passenger use is required and where a maximum of opening width is required. Vertical sliding bi-parting doors shall be power operated.

#### 4.6 Size of Doors

- .1 Standard door width for horizontally sliding Service (Passenger) elevator doors is 1070 mm, although larger sizes are available. Where possible doors shall be chosen from sizes in 150 mm increments. A standard door height of 2135 mm should be used unless higher doors are required in which case 2440 mm high doors should be chosen.
- .2 The minimum width for vertical sliding bi-parting doors should be 1830 mm and larger doors shall be chosen from 610 mm increments where possible to stay within typical standards.

#### 4.7 Manufactured Equipment

- .1 The following manufacturers are approved for use on new UBC projects:
  - .1 Otis Canada Inc.
  - .2 KONE Inc.
  - .3 ThyssenKrupp Elevator Co.
  - .4 Schindler.
- .2 The following manufacturers are approved for Elevator Modernization:
  - .1 Motion Control Engineering or approved equivalent.
- .3 Controllers and other pieces of equipment to be absolutely non-proprietary. Controllers must come equipped with any special diagnostic tools such as, but not limited to, a Thyssen "MAP" tool, Otis Service Tool, or any diagnostic software and connections available with a PC with manuals clearly defining the diagnostic codes and adjustment parameters.

### 5.0 MATERIALS AND SPECIFIC MECHANICAL REQUIREMENTS

#### 5.1 Requirements for All Elevators

Provide Seismic Safety Features in compliance with the latest version of the B44 Elevator Safety Code.

- .1 Car Top Guard Rail.
  - .1 Provide a car top guard rail that meets the requirements of the code and the following requirements:
    - .1 The guardrails shall not defeat any isolation between the car frame and the car cab. The preferred installation is to have the guard rail tied to the cross head.
- .2 Allowance for Additional Weight
  - .1 The complete elevator including the drive, support and counterweight shall be designed such that the weight of the basic cab can be increased with additional finishes or other additional equipment totaling not more than 350 Kg per cab.

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- .3 Guides
    - .1 Provide roller guides consisting of polyurethane tired wheels, at least 150 mm diameter for the car guides and 75 mm diameter for counterweight guides where applicable for all passenger elevators. Guides on freight elevators shall consist of solid slippers or sliding guide shoes.
  - .4 Travelling Cable
    - .1 Provide spare conductors in the travelling cables and communication wiring as follows; Provide spare wiring consisting of the greater of a minimum of 10% or ten (10) individual conductors and provide a minimum of eight (8) twisted shielded pairs of 20 AWG communication conductors for other equipment which maybe provided, over and above any pairs required by the elevator control system.
  - .5 Door Operators
    - .1 Automatic car door operators shall be of the heavy duty, high performance type designed for high performance and long life. Light or medium duty door operators are not acceptable.
    - .2 All door operators shall be provided with closed loop feedback operators capable of adjusting the closing torque to suit changing building conditions.
    - .3 Where front and rear doors are used provide full selective control of the door operation.
  - .6 Car Operating Panel
    - .1 Where centre opening doors are provided the elevator cab shall have two car operating panels, one on each side of the cab. Where front and rear doors are used the elevator cab shall have two car operating panels, one on the front side and one on the rear side of the cab. Where space permits car operating panels shall be mounted on the door return panels, otherwise on the side walls adjacent to the door return panel.
    - .2 In-Car stop switches shall be key-operated.
    - .3 Car operating panels with angled buttons designed to be universally accessible for use by both standing and seated persons are encouraged.
    - .4 Where possible mount the car call buttons in a single vertical column.
    - .5 Provide the following keyed switches and related features for each elevator; Light Switch, Fan Switch, Independent Service Operation Switch, Inspection Switch, Emergency Light Test Switch. Provide two (2) cutouts per panel with blank inserts for the future addition of other keyed switches. Any elevator equipped with Phase I Emergency Recall shall also be equipped with Phase II In-Car Emergency Service Operation and the related keyed switch.
    - .6 Buttons shall be of the vandal resistant type. Approved products are Dupar US84, 90 or 91 available from Dupar Controls. Car Tactile markings shall be Dupar US89, California Style white on black. All devices shall be mounted and secured to endure minor acts of vandalism. Approved keying shall be Dupar standard. Push buttons from the manufacturers standard range of products shall also be considered providing that

spare parts are easily attainable, they are of a vandal resistant design and meet the performance requirements of these guidelines.

- .7 A separate telephone activation button shall be provided.
  - .8 All illuminating devices shall be provided with long life LED illumination which is clearly visible in the ambient lighting level of the cab.
  - .9 The panel face plate shall be professionally engraved to identify each component, the position of switches, the elevator capacity, the owner's identification number as well as any jurisdictional identification numbers applicable to the installation.
- .7 Hall Buttons
- .1 The lights shall be from a long life LED source.
  - .2 Hall button face plates shall be engraved to include the required message to not use the elevator in case of fire.
- .8 Hall Lanterns
- .1 Where there are two or more elevators in a group, there shall be hall lanterns at all entrances.
  - .2 Lanterns shall be of the vandal resistant type and shall be located above or adjacent to the entrance. The illuminating elements shall be LED with a minimum usage rating of 100,000 hours. An electronic chime shall be provided which will sound when the lantern illuminates. The audible signal shall be a soft "chime" type sound, with adjustable intensity not less than 24 DBA. Harsh electronic beepers are not acceptable, and the type of chime is subject to owner approval. Sound the gong once for Up Bound, twice for Down Bound.
- .9 In-Car Lanterns
- .1 Where a single elevator is being provided, it shall have an in-car direction lantern on each car door post.
  - .2 Where there are front and back entrances, there shall be such a pair of lanterns on each entrance, and it will operate in unison with the corresponding entrance. The illuminating elements shall be LED with a minimum usage rating of 100,000 hours.
- .10 **Voice Announcer**
- .1 Provide equipment to allow an audible announcement in each elevator cab. The messages shall be appropriate to reflect the conditions pertinent to the elevator and shall be subject to the owner's approval.
  - .2 Connect the equipment to the elevator control system and determine the necessary inputs so that the messages reflect the conditions pertaining to the respective elevator or group function.
  - .3 Mount the remote speaker in the car operating panel behind a protective grille. Ensure that the location of the speaker will allow the announcements to be clearly audible both in the car and in the adjacent hallway when the elevator doors are open. The system shall be equipped with site adjustable volume control.

- .4 As a minimum the system shall include, but is not restricted to the following announcements:
  - .1 Announcement of the floor designation that the elevator is about to stop at.
  - .2 Announcement of the direction of travel of the elevator. The announcement shall be made when opening the doors in response to car or hall calls.
  - .3 An announcement warning to stay clear of the doors if the car door nudging feature is activated.
  - .4 An announcement warning that the elevator has been recalled to the ground floor as a result of emergency recall or other similar feature.
- .5 The equipment provided shall be flexible and shall permit site programming so that the messages may be changed at any time to suit changing conditions in the building. All announcements shall be available in either English or both English and French. The voice shall be male or female as selected by UBC.
- .6 The system shall have adequate capacity to store up to 40 different announcements and a total of 4 minutes of recording, as a minimum.
- .7 Audible signals should still be provided in hall lanterns.
- .11 Position Indicators
  - .1 In addition to the car position indicator required for Barrier Free Access each elevator shall be provided with a digital position indicator over the main floor entrance. Position indicators shall be LED or Vacuum Fluorescent type dot matrix or digital segment displays with characters at least 35 mm high.
- .12 Emergency Cab Light
  - .1 A battery powered emergency cab light device shall be provided for each elevator. The illumination source shall be an integral part of the car operating panel or as a separate inconspicuous fixture.
- .13 Firefighters Emergency Operation
  - .1 Firefighters Emergency Operation as initiated by the building fire alarm system shall be provided for all elevators in all buildings regardless of whether the building is considered a "high" building or not, as defined by the building code. Firefighters Emergency Operation where provided voluntarily shall conform to the applicable Safety Code requirements.
- .14 Group Operation
  - .1 Where two or more elevators are operating in a group, the operation shall be a group supervisory system, providing automatic collective control for each elevator and a group dispatching and hall call allocation system.
- .15 Control Equipment
  - .1 The control equipment will be primarily solid state, micro processor based.
  - .2 Control systems shall include non-proprietary diagnostic systems. Where special diagnostic tools are required these must be provided with the equipment along with

appropriate instructional manual and documents. Any such tools and supporting documentation shall become the property of UBC.

.16 Provisions for Card Readers

- .1 All elevator controllers should come equipped with a specially wired terminal strip so that an external card reader system can easily be added. The terminal shall have a pair of terminals for each car call other than the ground floor, such that if the terminals are 'jumped' the car call will operate, if not 'jumped' the car call cannot be registered. The control shall be arranged so that if an elevator is operating as a fire fighter elevator this security feature is overridden.

.17 Independent Service Operation

- .1 There shall be independent service operation on each elevator. This will be initiated by a keyed switch in the car.

.18 Inspection Operation

- .1 Each car shall be equipped with an inspection switch to remove the car from service and prevent operation from any means other than the inspection operation manual controls.

.19 Hoist way Access Operation

- .1 A hoist way access keyed switch and operation shall be provided for each elevator at the top and bottom landings landing for access to the elevator car top regardless of the floor to floor height or speed of elevator. Keys must be submitted for UBC's maintenance personnel.

.20 Emergency Power Operation

- .1 When emergency power operation is provided include, as part of the control system, suitable circuitry to shut down a moving car at the next possible floor when an advanced warning contact opens. The advanced warning contact will be supplied by the owner and will open 20 seconds prior to the activation of the transfer switch.

## 5.2 Requirements for Hydraulic Elevators

.1 Tank Heater

- .1 A thermo statically controlled tank heater to maintain the oil at a constant minimum operating temperature is required. Alternatively a viscosity control feature is also acceptable.

.2 Oil Level Indicator

- .1 An outside oil level indicator is required to determine the oil level without removing the reservoir cover.

.3 Gate Valves

- .1 A tank shut-off valve or gate valve is required in both the machine room and the pit.

.4 Motor Soft Start

- .1 An electronic motor soft-start device is required and must be fully adjustable to limit the peak starting current to as little as 150% of the full load running current.
- .5 Duty Rating
  - .1 All hydraulic elevator components including motor, pump, valve, piping and muffler shall be designed for a minimum duty of 80 up starts per hour.
  - .2 Provide Seismic Safety Features in accordance with the latest version of the B44 Elevator Safety Code, for pipe rupture valves, pre-Approved products are Maxton OSVB44.

### 5.3 Requirements for Traction Elevators

- .1 Sound Isolation
  - .1 Traction machines must be mounted on sound isolating pads, isolated in all directions.
- .2 Car Balancing
  - .1 With car empty and doors closed, remove the upper car guides. Add suitable weights to the car so that it hangs plumb in this condition. Then adjust the counter weight so that the car and counter weight are in balance with a load in the car which is between 42% and 44% of the rated load.
- .3 Motor & Drive
  - .1 Provide high efficiency permanent magnet AC motors with matching variable frequency/ variable voltage drive system of the flux vector type. Control and drive systems shall be closed loop which include position and velocity feedback devices to regulate the speed of the elevator within +/-2% of contract speed with any load from empty to rated capacity.
  - .2 There shall be an isolation transformer between the power and the elevator drive system. The total harmonic and individual harmonic distortion shall not exceed 5% and 3% respectively and the requirements of IEEE-519 shall be adhered to with respect to power harmonics. For purposes of measurement the Point of Common Coupling (PCC) shall be defined as the elevator power supply terminals located in the elevator machine room.
  - .3 For geared and gearless elevators provide a full re-generative drive system to return power generated during dynamic braking or running with over hauling loads to the power supply lines.
- .4 Automatic Rope Lubricators
  - .1 Provide automatic rope lubricators which consist of natural fiber pads connected to a lubricant reservoir. The devices shall be mounted adjacent to the hoist ropes in a manner that allows them to be adjusted to contact the ropes when desired.

### 5.4 Finishes

- .1 Elevator Finishes shall be selected from the following; Variations to the finishes provided shall be approved by the UBC Project Manager.

- .2 Where glass is used in or as part of cab enclosures it must be laminated safety glass.
- .3 Finishes for Passenger and Service Elevators
  - .1 Landing Door Panels and Entrance Frames to have Plain white prime coat paint finish.
  - .2 Hall Operating and Signal Fixtures to be Stainless Steel Brushed Finish.
  - .3 Car Operating and Signal Fixtures to be Stainless Steel Brushed Finish.
  - .4 Car Door Panels to be Stainless Steel Brushed Finish.
  - .5 Cab Front and/or Rear Return Panels, Door Jambs and Header/Lintel to be Stainless Steel Brushed Finish.
  - .6 Cab Ceiling to be 14 gauge furniture steel factory baked enamel finish, color to be White as selected by the Architect.
  - .7 Cab Lighting to be Energy efficient fluorescent lighting, consisting of T8 lamps and electronic ballasts.
  - .8 LED illumination make LED recessed pot lights a power smart option.
  - .9 Cab Walls to be Raised, Horizontal, Removable Plastic Laminated Panels above the Cab Handrail. Raised Stainless Steel Brushed #4 Finish Removable Panels below the Cab Handrail. Plastic laminate or Stainless Steel panel reveals all as selected by UBC.
  - .10 Cab Kick plate/ Base plate to be Stainless Steel #4 Brushed Finish.
- .4 Finishes for Passenger Elevators Only
  - .1 Suspended Ceiling/Lighting Coves to be Aluminum T-Bar with Aluminum Eggcrate Diffusers.
  - .2 Cab Finished Flooring to be Linoleum Flooring as selected by UBC. Where moisture is anticipated flooring shall be Resilient Sheet Vinyl flooring as selected by UBC.
  - .3 Cab Handrails to be Standard 1½" tubular stainless steel handrails on all non-access walls.
- .5 Finishes for Service Elevators Only
  - .1 Suspended Ceiling/Lighting Coves to be Two (2) Light Coves on the cab side walls with factory baked enamel finish, color to be selected by the Architect.
  - .2 Cab Finished Flooring to be Steel Checker plate.
  - .3 Cab Handrails to be 4" High Flat Bar stainless steel.
- .6 Finishes for Freight Elevators
  - .1 Freight Elevators shall be equipped with steel checker plate floors and painted metal cab and entrance finishes. Cab finishes including cab walls, doors or gates, ceiling, etc. shall be finished in a factory applied powder coat or baked enamel finish as selected by UBC. Entrance components including frames, headers and landing door panels shall be finished in a factory applied prime coat finish suitable for finished painting by others. Lighting for freight elevators to consist of recessed fluorescent light fixtures.
  - .2 Provide bumper rails to prevent damage to cab walls from pallet jacks etc.

## 5.5 Rails

- .1 Standard size "T" section car and counterweight guide rails, with tongue and groove joints, together with suitable splice plates at the connections are required. As a minimum use 22 Kg/m rails for the car.

## 5.6 Voice Communications

- .1 For each elevator provide a hands free emergency voice communication system and mount as a separate fixture or as an integral part of the car operating panel. Provide a telephone system for communications off site or to a 24 hour monitored location via an auto dialer. Provide a K-Tech Sentry II ET-901A-OEM telephone for mounting behind the car operating panel faceplate. Make all connections required to activate the communication device with the wiring provided. Program the device to dial the number(s) provided by the Owner. A separate telephone activation button shall be provided and shall be Dupar US84 or to match the other car operating panel buttons and shall be labeled as UBC Security, Elevator Trouble. This button shall be provided with a tactile and Braille marking displaying the international symbol for a telephone.
- .2 Provide two (2) way voice communication means within the building where the elevator travel is 18m (60ft) or more in accordance with the latest version of the B44 Safety Code for Elevators. The device shall consist of a handset in the main lobby that shall be capable of initiating two way communications to each of the elevator cabs. Pre-approved telephone assemblies requiring hands free devices inside the elevator and handsets in the lobby are Webb OEM 150 and Webb Master Station.
- .3 *The auto dial number to be programmed in all elevator cars for UBC Point Grey campus is 604-822-0445.*
- .4 *UBC Information Technology requires a demarcation point for each telephone line installed for elevator use. This demarc is typically located in the elevator machine room. It allows UBC Information Technology to test the phone line without entering the elevator equipment.*

## 5.7 Door Protection

- .1 Door re-opening devices shall be of the multi-beam infrared light detector type designed to detect obstructions without contact. Approved products are Janus - Panaforty, Formula Systems - Safe screen 547 and Otis - Lambda.

## 5.8 Hall Tactile Markings

- .1 Provide quality embossed metal jamb plate markings. Provide EJ3 markings with WB Finish and four hole mechanical mounting available from Stencil Cutting and Supply Company, Ph. 1-800-783-4633 or approved equivalent product. Markings shall be attached with pins or other mechanical means. Do not use stamped or etched plates, and do not use only adhesive for attaching.

## **1.0 GENERAL**

### **1.1 Related UBC Guidelines**

- .1 UBC Technical Guidelines
- .2 Section 14200 Elevators

### **1.2 Coordination Requirements**

- .1 UBC Building Operations - Technical Services. Maintenance.
- .2 Campus and Community Planning - University Architect.

### **1.3 Description**

- .1 Platform lifts and other “elevating devices for disabled persons”.

### **1.4 Quality Control and Assurance**

- .1 Refer to requirements of Section 14200.

## **2.0 DESIGN REQUIREMENTS**

- .1 Platform lifts or other “elevating devices for disabled persons” may be deemed to provide an acceptable alternative to an elevator or ramp for access only in situations where they can be shown to reasonably meet the intent of the B.C. Building Code. Use of all such lifts in UBC projects shall be avoided unless it can be demonstrated that the use of such a device is the best solution and does not compromise long term solutions.
- .2 Where it is deemed necessary to provide a Lift for barrier free access, a LU/LA type of elevator is recommended with power operated side opening doors and fully automatic operation. A LU/LA lift must be installed to meet the latest B44 Safety Code Requirements.
- .3 The design requirements of Section 14200 shall also apply to Lifts where applicable. This includes an inspection and approval by a BC Provincial Safety Officer
- .4 The use of inclined stair platform lifts is prohibited without specific approval of the “University Architect”

## **1.0 GENERAL**

### **1.1 Related UBC Guidelines**

- .1 UBC Technical Guidelines

### **1.2 Coordination Requirements**

- .1 UBC Building Operations - Technical Services for Maintenance information.
- .2 Contact Manager at Technical Services – Phone: 604-822-0852.

### **1.3 Description**

- .1 Cranes and Hoists.

### **1.4 Quality Control and Assurance**

- .1 Refer to requirements of general specifications of Section 14600.

## **2.0 DESIGN REQUIREMENTS**

### **2.1 General**

Equipment design and installation requires full compliance with all applicable regulatory bodies listed below:

- .1 Worksafe BC.
- .2 CSA B167-96.
- .3 ASME B30.2-2001.