

1.0 GENERAL

.1 Requirements Include

- .1 Elevators.

.2 General

- .1 Confirm with BCIT the desired weight capacity, speed, type of elevator (Traction, Machine Room Less (MRL)), and intended use (passenger, freight, or both). If consultant recommends hydraulic, obtain prior BCIT approval.
- .2 Elevators to be provided with accessories for a complete installation.

.3 Performance and Design Requirements

- .1 Car to be capable of carrying a stretcher in the full open position along with minimum two (2) attendants.
- .2 All elevator controls, call buttons, features, and grab rails to conform to accessibility requirements as per Code/ByLaw of Authority Having Jurisdiction.
- .3 Comply with allowable VOC levels as outlined in Division 01 and confirm all finishes with BCIT (product, colour, pattern, and texture).
- .4 Ensure at least one elevator is on a generator so those in wheelchairs can safely exit the building in a timely fashion.
- .5 Provide elevator automatic fault detection/machine learning for predictive maintenance purposes.

2.0 ADMINISTRATIVE AND SUBMITTAL REQUIREMENTS

.1 BCIT Submittals and Notifications

- .1 Samples:
 - .1 Consultant is to provide a sample board showing all the finishes for review and approval by BCIT.
 - .1 Include samples of each material proposed to show the complete range of colours, pattern, and textures.
- .2 Shop Drawings:
 - .1 At a minimum, include the following:
 - .1 Power Information: Horsepower, starting current, running current, machine and control heat release, and electrical requirements.
 - .2 Sealed shop drawings from an engineer licensed to practice in the Province of British Columbia:

- .1 Plans, elevations, sections, and large-scale details indicating service at each landing.
 - .2 Machine room layout.
 - .3 Car, guide rails, buffers and other components in hoistway.
 - .4 Maximum rail bracket spacing.
 - .5 Maximum loads imposed on guide rails requiring load transfer to building structure.
 - .6 Maximum loads on pit floor during dynamic support of car and buffer engagement.
 - .7 Loads on hoisting beams.
 - .8 Travel of car.
 - .9 Clear inside hoistway, overhead and pit dimensions.
 - .10 Location and sizes of access doors, hoistway entrance frames, and rough openings required.
 - .11 Expected heat dissipation of elevator equipment in machine room.
 - .12 Electrical requirements for power supply.
 - .13 Finishes: Colour and frame finishes, cab interior finishes.
- .3 Closeout Submittals: Consultant to specify so that Contractor provides:
- .1 Operations and Maintenance Manuals: In addition to standard data as outlined in Division 01 Sections, include operation and adjustment instructions, troubleshooting guide, renewal parts catalogues, and electrical wiring diagrams.
 - .2 Manufacturer Certificates: Signed by elevator manufacturer certifying that hoistway, pit, and machine room layout and dimensions, as shown on Drawings, and electrical service, including emergency generator, as shown and specified, are adequate for elevator system being provided.
 - .3 Software: Submit one backup copy of the control system software for the Owner's exclusive use.
 - .4 Operating Permit from Technical Safety BC.

3.0 QUALITY ASSURANCE

.1 Quality Assurance

- .1 The design is to be done by a professional engineer with specialty in elevators, and licensed to practice in British Columbia.

Consultants are to provide complete specifications, and review these Technical Standards documents to include BCIT requirements within the specifications as applicable to the project.

- .2 Specify so that the installation is to be done by the manufacturer or an installer approved by the manufacturer.

.2 Warranty

- .1 Provide minimum one (1) year guarantee from the date of Substantial Performance.

4.0 MAINTENANCE SERVICE

.1 Maintenance

- .1 Specify for 12-month maintenance service contract consisting of examinations and adjustments of the elevator equipment starting from Substantial Performance date. Work is to be performed by manufacturer's trained installers and/or recommended service personnel, and using manufacturer's recommended parts and supplies.

5.0 PRODUCTS

.1 Finishes – Car Enclosures/Cab Interiors

- .1 Finishes to be durable and resistant to vandalism as much as possible.
- .2 Cab Enclosures:
 - .1 Manufacturer's standard stainless steel with No. 4 finish (brushed) for the car enclosures, unless otherwise requested by BCIT. This applies to: Wall bases, door frames (jams & head), cab doors, cab front return, transom, soffit, sill and strike-panels.
- .3 Both entrance jambs to have 102 x 102 mm plates having raised floor markings with Braille adjacent.
- .4 Cab Flooring:
 - .1 To have high contrast with the walls to aid users with vision impairment.
 - .2 Confirm product, colour, pattern, and finish with BCIT. Acceptable products include homogenous composition 100% synthetic rubber, 3.17 mm thick and alternatives with BCIT approval.
- .5 Cab Walls:
 - .1 To have high contrast with the flooring to aid users with vision impairment.
 - .2 Standard plastic laminate, horizontal grade, with self-edged panels, minimum 1 mm thick, over substrate.
 - .3 Handrails constructed of stainless steel and mounted on non-access walls.
 - .4 Where required, removable panels to be of 16-gauge sheet steel painted with black powder paint and perforated for hardware to mount removable panels.

Laminate to be selected from the manufacturer's standard selection, horizontal grade.

- .5 Stainless steel pad hooks and protective pads of fire retardant quilted canvas to be provided for all the walls other than entrance side.
- .6 Ceiling: Perforated brushed stainless steel preferred.
- .7 Cab Lighting: Recessed LED. Refer to Section 26 51 00 Lighting - Interior.

.2 Elevator Machinery Accessories

- .1 Manufacturer's standard muffler device at power unit location.
- .2 Vibration Pads to isolate unit from building structure.
- .3 Sound Insulating Panels.
- .4 Sound Isolating Coupling.

6.0 ELEVATOR FEATURES

.1 HVAC

- .1 To include UVC sterilization technology.

.2 Voice Communication

- .1 A vandal resistant, autodialing, hands free speaker/microphone type telephone, mounted in a stainless steel plate and flush mounted into the elevator front return panel.
- .2 To be clearly marked and identified with a button to initiate the call.
- .3 Elevator to include voice destination announcements of the floor number.

.3 Doors

- .1 Program elevator doors with closure times to accommodate people with disabilities.
- .2 Include door re-opening devices to protect passengers from closing doors.

.4 Buttons

- .1 All operating buttons to be illuminated with a long life LED source, minimum 100,000 hours operation, and clearly visible in the ambient lighting levels.
- .2 Buttons to be large / oversized for ease of use by persons with limitations and impairments.
- .3 Preference for floor selection buttons to be located on hall/lobby side so those in wheelchairs can select their floor before entering elevator.

.5 Lanterns

- .1 Position Indicator - Car: Digital position indicator with an LED display which also displays the direction of the car's travel. Mount a minimum of 1980mm AFF.
- .2 Position Indicator – Hall: located at the ground floor level and with the same indicator style as inside the cab.
- .3 Hall Lanterns located at all levels with double stroke electronic chime with an adjustable volume control to visually and audibly indicate the direction of travel. Hall lanterns to provide a 3-second advanced warning of the car arrival.

.6 CCTV

- .1 Elevator cab to include CCTV that is compatible with the campus security system. Refer to Division 28.

.7 Monitoring Network

- .1 To be compatible for connection to existing service provider's 24/7 monitoring network. Refer to Division 28.

7.0 EXECUTION**.1 Demonstration**

- .1 Specify so that a factory-authorized service representative train BCIT's Facilities staff to adjust, operate, and maintain elevators.
 - .1 Include review emergency provisions and train BCIT Facilities staff in procedures to follow in identifying sources of operational failures or malfunctions.
- .2 Include hand over elevator keys to BCIT Facilities staff and BCIT Security and Safety Emergency Management. Confirm with BCIT the total number of key sets required.

*** END OF **ELEVATORS** SECTION ***