



CI-0701

TAB 7: TECHNICAL DISCIPLINES

Architectural

ELEVATORS

BASIS OF CRITERIA

The purpose of these guidelines is to encourage a standard approach to the provision of vertical transportation systems provided for GO Transit facilities. Included in the guidelines are elevator related considerations that are important to the realization of GO's design objectives and are therefore expected to be incorporated into the design of all GO platform and parking garage projects.

The guidelines do not constitute a project specification. Each project shall have its own specification based upon the master elevator performance specification prepared on a detailed basis and reflect the individual project's unique and comprehensive requirements.

It is recognized that strict adherence to specific guideline elements may not be appropriate to all project designs. However, deviation from these guidelines is discouraged and variance approval rests solely with GO Transit. Variance requests shall be supported by an explanation of the reason for the deviation and detailed information on the proposed alternative.

Refer to Elevator Performance Specification for additional information.

Refer to GO Standard Drawings for elevator cab button array information.

DESIGN REQUIREMENTS

PLANNING AND DESIGN OBJECTIVES

GO Transit's key design objectives shall apply to considerations relating to vertical transportation and include development of appropriate project specific designs that incorporate:

- > Highest degree of safety,
- > Functionality for use by persons with physical disabilities,
- > Passenger security,
- > Service reliability,
- > Effective, efficient operations and maintenance.
- > Use of non-proprietary tools, equipment and knowledge.

Elevator design, construction, installation and maintenance must be in strict conformance with CAN/CSA-B-44 Elevator Safety Code (latest edition) and all other codes and regulations that may apply.



CI-0701

TAB 7: TECHNICAL DISCIPLINES

Architectural

Provide car enclosure / door arrangement with interior dimensions suitable to accommodate a prone stretcher 2010 mm (79") long by 610 mm (2'-0") wide.

In the event of a loss of Utility Power, standby power shall be provided to permit continued operation of the elevator(s). All elevators shall be provided with a traction elevator emergency power device that will automatically move the elevator to a pre-determined floor in the event of a power failure.

All elevator rotating equipment shall be provided with protective measures to minimize pinching and related hazards as required by the Occupational Health and Safety Act and Regulations for Industrial Establishments.

All elevators shall be provided with battery powered emergency lighting and two speed ventilation fans. Glass elevator hoistways and car enclosures shall be supplied with HVAC systems that will provide climate control of the hoistway and limit the interior cab temperature to ≤ 26 degree C. Provide car enclosure ventilation systems which satisfy CAN/CSA B-44 requirements for such conditions.

BARRIER FREE DESIGN

All elevators shall be designed to contribute to the provision of a barrier free path of access and conform to the requirements of the latest applicable edition of the Ontario Building Code (OBC). Elevators shall also be considered to ensure that a secondary point of access/egress is available for redundant secondary access to and from each rail platform.

Elevator configuration shall feature "flow through" designs to permit loading and unloading of persons in wheelchairs or, employing other mobility assist devices, without requiring a change in direction in the path of travel. Design shall allow sufficient discharge space to permit ease of access and transfer.

All elevators shall satisfy accessibility standards indicated in the CAN/CSA-B44 Safety Code for Elevators, Appendix E "Elevator Requirements for Persons with Physical Disabilities" (latest update).

Car Operating Panel shall be located on the side wall of the car enclosure to permit parallel approach to panel. Operating panel shall incorporate oversized buttons with appropriate markings in a vertical array allowing for wayfinding information to be included next to the button.

SAFETY AND SECURITY

Elevator shaft, car enclosure and entrance doors shall be constructed with the maximum amount of glazing to provide internal and external site lines.

Elevators shall include provisions in the Car Operating Panel for installation of Elevator Code compliant, hands-free, emergency two way communications device (provided by GO Transit's Communication Contractor) as well as interface connections between the activation buttons and indicators in the COP. Two-way information communication devices shall also be located in the elevator vestibule at every level/floor served by elevator.

Travelling cable provisions shall be provided by Elevator Contractor for wiring between the car enclosure and control room. Communications Contractor to provide two- way communication connections between the elevator controller room and GO Transit's monitoring service central station.



CI-0701

TAB 7: TECHNICAL DISCIPLINES

Architectural

Provide wiring and interface for installation of CCTV within the car enclosure.

Monitoring System Contractor (Chubb Security) to provide continuous monitoring of signals related to the elevator and other sensing devices located in the elevator hoistway and controller room.

Elevator must be designed to operate within unrestricted areas. Its signals, fixtures, car enclosure finishes and doors shall be of vandal proof design. Installations and equipment installed shall conform to latest safety codes and shall not be easily damaged or abused.

As elevators are generally installed in unattended areas, the equipment must be sensitive to certain security concerns, including high visibility into and out from elevator cars; therefore, car and shaft walls must be glazed with safety glass in stainless steel frames.

ELEVATOR NUMBERING CONVENTIONS

- > All elevator numbers on site must be arranged in sequential order, starting at number 1
- > Elevators north of the tracks shall be assigned numbers first. Where track runs north/south the elevators on the east side of track shall be assigned numbers first
- > Elevators serving platforms shall be numbered in a sequence following platform numbers being served (i.e. platform one first, followed by subsequent platforms)
- > Elevator groups serving a parking structure to be numbered in one sequence
- > Elevator numbering shall be coordinated with signage, Chubb Security, and system safety at the time of construction

RELIABLE OPERATION

Use only components which can be shown to have performed satisfactorily and proven reliable for a minimum period of at least two (2) years. The use of prototype or first time installation equipment, component combinations or equipment mixes is not acceptable.

Elevator shaft and control room shall be provided with means of maintaining hoistway and control room temperatures between 10 and 27 degree C, under all seasonal conditions.

OPERATIONS AND MAINTENANCE

Elevators shall be designed to operate within unrestricted areas. Its signals, fixtures, car enclosure finishes and doors shall be of vandal resistant design.

Stainless steel shall have a No. 4 brushed finish, with final selection and grain direction being confirmed by the Architect, at time of shop drawing reviews.



CI-0701

TAB 7: TECHNICAL DISCIPLINES

Architectural

Elevator equipment shall not contain proprietary features, which limit the Owner's ability to engage a qualified elevator maintenance contractor, other than the original manufacturer/installer, for provision of maintenance services.

Elevators shall be continually maintained under a comprehensive, planned, preventative maintenance program designed to maximize equipment availability, ensure operational reliability and sustain equipment performance at optimum levels. The program shall include regular component replacement, as recommended by the original equipment manufacturer (OEM), to extend equipment life.

Provide two (2) year warranty for new elevators from date of substantial completion of Elevator Trade Contractors Work and acceptance of unit(s) by GO Transit.

Provide 24 month warranty period maintenance service from date equipment is taken over and accepted by GO Transit, coinciding with Warranty period. Maintenance shall include comprehensive full coverage maintenance services as provided under the elevator contractor's standard program for full maintenance services, including overtime callback services at no additional charge.

COMMUNICATIONS

CCTV cameras and wiring shall be provided as required. All elevators shall have CCTV camera mounted inside elevator cab.

Camera mounted in vestibules and lobbies shall view inside and outside of each elevator at each level where possible. If the elevator has doors on two sides then CCTV cameras must be placed to view both lobbies/vestibules.

CCTV Cameras connectivity and monitoring must adhere to GO standards and security concerns. Lighting in elevators will consider the usage of CCTV cameras, interior or external.

EQUIPMENT AND CONSTRUCTION CONSIDERATIONS

Heating

- > Fan forced heater with built-in thermostat, mounted on elevator pit wall.
- > Heat Pump with hyper heating capability down to -25°C.
- > If possible, Heat Pump should be ducted type and located outside the elevator hoistway.

Ventilation or Air Conditioning



CI-0701

TAB 7: TECHNICAL DISCIPLINES

Architectural

- > Ventilation via axial, wall mounted, shuttered exhaust fan with thermostatic control mounted at top of hoistway.
- > Air Conditioning via Heat Pump with low ambient cooling.
- > If possible, Heat Pump should be ducted type and located outside the elevator hoistway.

Hoistway

- > Glazed construction above ground with solar control window film on South and West exposures.
- > Glazed construction below ground adjacent to elevator entrances, no window film.

Floor Grille

Floor grille shall be capable of capturing and retaining crystalline ice melting products in winter and road grit and gravel during all seasons. Its shall be constructed from stainless steel and shall be designed for cleanout by one person, unaided.

Window Film

Window film shall be selected to balance a reduction in heat build-up with minimizing any reduction in visibility.

PROJECT SPECIFIC PROVISIONS

To ensure adherence to these standards and guidelines, a qualified vertical transportation consulting firm shall be retained to provide design, specification and construction review services. A comprehensive project specification outlining requirements for both the elevator trade and related work to be provided by other trades to interface with the elevator shall be prepared for review and approval by GO.

Utilize only Machine-Room-Less (MRL) type traction equipment.

Unless prevented by specific project site conditions, provide elevator 1814kg (4000 lb) elevator capacity, arranged in a service car configuration (i.e. cab interior more narrow than deep), utilizing 1220mm (4'-0") wide two speed side opening doors. Refer to general arrangement of cab configuration as reflected GO Transit's Outline Performance specifications.

Car controls shall be located on the car side wall. Control panel shall include a separate cabinet enclosure to house the hands-free emergency two way communication system (to be provided by GO's Communication Contractor). Elevator Contractor to provide activation button and LED indicator.

Where site or other project specific conditions require elevator solutions that are not in full conformance with these guidelines and GO Transit's outline specification, prior approval of alternate elevator provisions shall be obtained from GO Transit at the project's 50% Design Development stage



CI-0701

TAB 7: TECHNICAL DISCIPLINES
Architectural

GO ELEVATOR INSTALLATION PLANNING CHECKLIST

Element	Design Criteria
Vestibule Orientation:	Quadrant spanning South through East.
Floor grille:	Inside entrance door, arranged to capture foot-borne debris.
Entrance door:	Mandatory, power operated barrier free accessibility compliant.
<i>At Tunnel Level:</i> Elevator vestibule Slope of concrete floor	Optional below ground level. Maximum slope away from elevator entrance, as permitted by applicable codes.
<i>At Intermediate Level:</i> Elevator vestibule Slope of concrete floor	Optional below ground level. Mandatory at ground level or above ground level. Away from elevator entrance.
<i>At Overhead Walkway/Platform Level:</i> Elevator Vestibule Slope of concrete floor	Mandatory. Away from elevator entrance.
Hoistway heating:	Fan forced heater or heat pump with hyper heating.
Hoistway ventilation or air conditioning	Exhaust Fan with fresh air louver or Heat Pump with low ambient cooling.
Hoistway construction	Glazed above ground.
Pit drain	Mandatory.
Elevator Controller Cabinet: Location	Per manufacturer's requirements (typically in corridor or vestibule adjacent to elevator hoistway at upper landing).
HVAC	Provide heating and ventilation equipment necessary to maintain controller cabinet within the recommended manufacturer's temperature range.



CI-0701

TAB 7: TECHNICAL DISCIPLINES

Architectural

FIGURE: SAMPLE ELEVATOR CAR ENCLOSURE ARRANGEMENT

SECTION:

Tab 7:
Technical
Disciplines

FIGURE:

Grey fields
beside cab
buttons are
reserved for
wayfinding.
Refer to the
signage
catalogue

