High Building (OBC 3.2.6. and SB-4)
Design Checklist for New Buildings

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Purpose of Checklist

This checklist is prepared for the purposes of convenience only to assist in relaying how code compliance is achieved for high buildings as design strategies items may not be able to be fully articulated within building permit submission documents. For a full list of requirements, refer to the current Ontario Building Code and Supplementary Standards. This checklist is intended to be read and used in conjunction with the permit construction drawings and building code matrix.

Project Address:
Project Name (if applicable):
Permit Number:

Design Team Confirming and/or Detailing OBC Compliance for High Building Measures

Design professional to complete each discipline to which they have reviewed the building permit submission for building code compliance and confirmed high building measures have been adequately detailed and coordinated between various disciplines (e.g. Architectural and Mechanical) in the associated building permit documentation.

Architectural Company Name _____ First and Last Name _____ Signature _____ Address _____ Telephone _____ Email _____	Seal
Mechanical Systems Company Name _____ First and Last Name _____ Signature _____ Address _____ Telephone _____ Email _____	Seal
Electrical Systems Company Name _____ First and Last Name _____ Signature _____ Address _____ Telephone _____ Email _____	Seal
Structural Systems Company Name _____ First and Last Name _____ Signature _____ Address _____ Telephone _____ Email _____	Seal
Other (Specify) _____ Company Name _____ First and Last Name _____ Signature _____ Address _____ Telephone _____ Email _____	Seal
Project Code Consultant (if Applicable) _____ Company Name _____ First and Last Name _____ Signature _____ Address _____ Telephone _____ Email _____	Seal

Alternative Solutions: Are there any proposed alternative solutions relating to Subsection 3.2.6. provisions for the proposed building?

☐ NO
☐ YES Explain:

Checklist Instructions:

1. Project design consultants to review the contents of the checklist.
2. Mark / check off the applicable boxes and complete the fillable information to confirm the subject building is designed to comply with the applicable provisions of Subsection 3.2.6. of the Ontario Building Code and SB-4 of the Supplementary Standards.
3. If additional comments or information are needed to elaborate on design strategies, use the 'Remarks' portion of each section.

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High Building Requirements

OBC / SB-4 Reference	Confirmation of Compliance	3.2.6. / SB-4 Requirement

Limits to Smoke Movement

Limits to Smoke Movement in Sprinklered Buildings ☐ N/A (unsprinklered building)

OBC 3.2.6.2.(1)
SB-4 [3.2.6.2.(1)](3)

Electrical Sprinkler Supervision

The sprinkler system is equipped with a water flow and supervisory signal system that will,

☐ (a) transmit automatically a waterflow signal directly to the fire department, or through an independent central station,

☐ (b) transmit automatically other supervisory signals to a proprietary control centre or to an independent central station, and

☐ (c) actuate a signal at the central alarm and control facility described in Article 3.2.6.7. of Division B.

Remarks:

Stairway Protection Below Lowest Exit Level ☐ N/A (no stairways below the lowest exit level)

OBC 3.2.6.2.(2)
SB-4 [3.2.6.2.(2)]

☐ Same design applies to all stairs

☐ Stair designs differ within building

SB-4 [3.2.6.2.(2)](2) Shaft Enclosure Separation

The stairway is enclosed in a shaft that;

☐ (a) does not pass through the floor above the lowest exit level and is separate from a shaft that contains a stairway serving upper storeys.
This condition is applicable to stair(s):

☐ (b) contains a stairway serving upper storeys, but is separated from that stairway at the lowest exit level by a fire separation having a fire resistance rating not less than that required for the shaft enclosure.
This condition is applicable to stair(s):

SB-4 [3.2.6.2.(2)](3) Pressurization (fan near bottom of the stair shaft)

☐ The stairway is provided with equipment capable of maintaining a flow of air introduced at or near the bottom of the stair shaft, at a rate equal to 0.47 m^3/s for each storey served by the stairway.

☐ Supply air duct system from the point of the fresh air intake to the bottom of the stair shaft is located within a Choose: fire separated shaft and is specified on the Architectural drawings.

SB-4 [3.2.6.2.(2)](1) Vent (relief vent near top of the stair shaft)

☐ The stairway has a vent or door to the outdoors at or near the top of the stair shaft that has an openable area of not less than 0.1 m^2 for each storey served by the stairway, less 0.01 m^2 for each weather-stripped door and 0.02 m^2 for each door that is not weather-stripped opening into the stairway.

Stair(s)	Size of Required Vent (m^2)	Type of Vent
		Choose:
		Choose:
		Choose:
		Choose:
		Choose:
		Choose:

☐ Relief vent duct system from the top of the stair shaft to the exterior is located within a Choose: fire separated shaft and is specified on the Architectural drawings.

Remarks:

Requirements for Stair Shafts Serving Storeys Above Lowest Exit Level

OBC 3.2.6.2.(3)
SB-4 [3.2.6.2.(3)]

Venting of stair shafts is provided by;

☐ Vent(s) at the bottom of the shaft *(complete "Vent" section below)*
Applicable to stairs:

☐ Mechanical methods *(complete "Mechanical Pressurization" section below)*
Applicable to stairs:

Additional Information:
Is there is a separating corridor or vestibule between the stair shaft and the exterior?

☐ Yes Applicable to Stairs:

☐ No Applicable to Stairs:

OBC 3.2.6.2.(3)
SB-4 [3.2.6.2.(3)]

Vent ☐ N/A

Each stairway that serves storeys above the lowest exit level has a vent to the outdoors, at or near the bottom of the stair shaft, that,

☐ (a) has an openable area of 0.05 m^2 for every door between the stair shaft and a floor area, but not less than 1.8 m^2,

☐ (b) opens directly to the outdoors or into a vestibule that has a similar opening to the outdoors, and

☐ (c) has a door or closure that,
(i) is openable manually, and
(ii) can remain in the open position during a fire emergency

Stair shaft(s)	# of doors between shaft and floor area		(m^2)		Total (cannot be < 1.8 m^2)	Type of Vent
		x	0.05	=		Choose:
		x	0.05	=		Choose:
		x	0.05	=		Choose:
		x	0.05	=		Choose:
		x	0.05	=		Choose:
		x	0.05	=		Choose:

Remarks:

SB-4 [3.2.6.2.(3)] Mechanical Pressurization ☐ N/A

☐ **Performance Criteria (after conducting test):**
The minimum pressure differential of stair to adjacent floor areas is Pa.
Minimum pressure differential of 12 Pa is recommended to prevent smoke migration.

☐ Maximum pressure differential created by the mechanical system is will not prevent doors to the stair shafts from being opened.
A max. value of 130 N. recommended.

☐ System will be tested after installation to ensure the design intent is met and report submitted to confirm compliance.

☐ **Design Parameters:**
The pressurization duct and equipment is located within a Choose an item. fire separated shaft and is specified on the Architectural drawings.

Remarks:

Limiting Smoke Movement into Storeys Above Lowest Exit Level

OBC 3.2.6.2.(4) SB-4 [3.2.6.2.(4)](1) Elevator Hoistways ☐ N/A

An elevator hoistway that passes through the floor above the lowest exit storey should not penetrate the floor of the storey immediately below the lowest exit storey, unless there is a vestibule between the shaft & each floor area below the lowest exit storey that;

☐ (a) has a fire separation, with a FRR not less than 45 min, between vestibule & any public corridor,

☐ (b) has a fire separation, with a FRR not less than that required for an exit by Article 3.4.4.1. of Division B, between the vestibule and any stair or elevator enclosure or any part of a floor area, other than a public corridor,

and

☐ (c) except for elevator hoistway entrances, has a self-closing device on any door through the fire separation noted above, with the doors opening in the direction of travel from the floor area to the exit stairway.

Remarks:

SB-4 [3.2.6.2.(4)](2) Vertical Service Space (other than an elevator hoistway) ☐ N/A

A vertical service space, other than an elevator hoistway that passes through the floor assembly above the lowest exit storey, should be provided with a tight fitting noncombustible seal or fire stop at the floor assembly of the storey immediately below the lowest exit storey, unless;

☐ (a) the vertical service space is vented to the outdoors at the top and the vent has an openable area that is not less than;

Shaft label	Graph	Min. Openable Area of Vent %		Min. Cross-Sectional Area of Shaft		Min. Area of Vent Required
	Choose an item.		x		=	
	Choose an item.		x		=	
	Choose an item.		x		=	
	Choose an item.		x		=	

☐ (b) for a shaft that serves floor areas above the lowest exit storey, a vent is located;
Choose an item.

☐ (c) for a shaft that serves floor areas below the lowest exit storey, a vent is located at or near the top of the shaft.

SB-4 [3.2.6.2.(4)](3)

Any closure provided for a vent opening referred to in Sentence (2) must be openable:

☐ (a) manually,

☐ (b) on a signal from a smoke detector located at or near the top of the shaft,

and

☐ (c) by a control device located at the central alarm and control facility.

Remarks:

Air Moving Fans ☐ N/A

OBC 3.2.6.2.(5) SB-4 [3.2.6.2.(5)](1)

☐ Except for exhaust fans in kitchens, washrooms and bathrooms in dwelling units, and except for fans used for smoke venting in Article 3.2.6.6. of Division B, air moving fans in a system that serves more than 2 storeys are designed and will be installed so that in the event of a fire these fans can be stopped by means of a manually operated switch at the central alarm and control facility.

Remarks:

Group C Public Corridor Make Up Air ☐ N/A		
OBC 3.2.6.2.(6)	☐ No ☐ Yes	Is the air handling system used to provide make-up air to public corridors servicing suites in a Group C occupancy?
	☐ No ☐ Yes	The make-up air to the public corridors is designed to NOT shut down automatically upon actuation of the fire alarm as to maintain corridor pressurization (except as provided in Article 3.2.4.12. or conflicts with other smoke control measures).
OBC 3.2.6.2.(7)	☑	**Not Applicable.** This sentence applies to existing buildings that are not sprinklered and **this checklist is intended for new buildings only**.
Remarks:		

Connected Buildings ☐ N/A		
OBC 3.2.6.3.(1) SB-4 [3.2.6.(1)](1)		The connection opening between the two buildings is protected against the passage of smoke by a vestibule that has;
	☐	(a) a fire separation between the vestibule and a public corridor with a fire resistance rating not less than 45 min,
	☐	(b) a fire separation between the vestibule and the remainder of the floor area, other than a public corridor, with a fire resistance rating not less than that required by Article 3.4.4.1. for an exit,
	☐	(c) a fire separation between the vestibule and a stair enclosure or elevator hoistway with a fire resistance rating not less than that required by Article 3.4.4.1. for an exit, **and**
	☐	(d) any door in the fire separations required by (a), (b), or (c) is provided with a self-closing device and swings in the direction of travel from the floor area to the exit stairway.
SB-4 [3.2.6.3.(1)](2)		The vestibule(s) referred to above has;
	☐	Equipment capable of maintaining a supply of air into the vestibule sufficient to ensure that the air pressure in the vestibule when the doors are closed is higher by at least 12 Pa than that in adjacent floor areas when the outdoor temperature is equal to the January design temperature on a 2.5% basis.
		or
	☐	A vent to the outdoors that has a net area of Vent net area should be $10(0.023d + 0.00045a)$ m² where; d = Number of doors having a perimeter not more than 6 m that open into the vestibule, or if the perimeter of doors exceeds 6 m, the value 'd' is increased in direct proportion to the increase in perimeter. a = area in square meters of enclosing walls, floors and ceilings whose outer face is in contact with the outside air, except that where the outer face of a wall is in contact with the ground or fill, it is assumed that there is no leakage through that portion, and the value of 'a' is assumed to be zero.
Remarks:		

Emergency Operation of Elevators		
OBC 3.2.6.4.(1)	☐	Manual emergency recall provided for all elevators serving storeys above the first storey.
		Key-operated switches for emergency recall provided in a conspicuous location at,
	☐	(a) each elevator lobby on the recall level, and
	☐	(b) the central alarm and control facility required in Article 3.2.6.7.
	☐	In-car emergency service switches will be provided in all elevator cars.
OBC 3.2.6.4.(4)		Keys to operate the switches required by Sentences (2) and (3) will be,
	☐	(a) provided in a suitably identified box conspicuously located on the outside of an elevator hoistway near the central alarm and control facility required by Article 3.2.6.7., and
	☐	(b) kept at the central alarm and control facility.
OBC 3.2.6.4.(5), (6), and (7)	☐	**Un-sprinklered Building** - Automatic emergency recall operation will be provided for all elevators serving storeys above the first storey and will be actuated by smoke detectors designed as part of the fire alarm system and installed in each elevator lobby on each storey, or the building fire alarm system. ☐ **N/A (sprinklered building)**
Remarks:		

Elevator for Use by Firefighters		
OBC 3.2.6.5.(1)	☐	Required firefighter elevator(s) have been identified on the drawings.
		The firefighter elevator(s);
	☐	have a useable platform area not less than 2.2 m²
		and
	☐	are capable of carrying a load of 900 kg from the firefighter access storey to the top floor within 1 minute.
OBC 3.2.6.5.(3)		Each firefighter elevator is;
	☐ N/A ☐	(a) provided with a closure at each shaft opening so that the interlock mechanism remains mechanically engaged and electrical continuity is maintained in the interlock circuits and associated wiring for a period of not less than 1 h when the assembly is subjected to the standard fire exposure described in CAN/ULC-S104. This condition occurs on floors:
	☐ N/A ☐	(b) Protected with a vestibule containing no occupancy and separated from the remainder of the floor area by a fire separation having a fire-resistance rating not less than 45 min This condition occurs on floors:
	☐ N/A ☐	(c) Protected with a corridor containing no occupancy and separated from the remainder of the building by a fire separation having a fire-resistance rating not less than 1 hour This condition occurs on floors:

OBC 3.2.6.5.(4)&(5)	☐	The firefighter elevator(s) providing transportation from the firefighter entrance storey to every above grade storey in the building and that is normally served by the elevator system; ☐ Choose an item.
OBC 3.2.6.5.(6)	☐	Electrical Conductors for the operation of the firefighter elevator(s) are; ☐ Choose an item.
Remarks:		

Venting to Aid Firefighting

OBC 3.2.6.6.(1)	☐	Venting of floor areas is provided by;
	☐	windows and/or wall panels (complete "Window(s) / Wall Panel(s)" section below)
	☐	smoke shafts (complete "Smoke Shaft(s)" section below)
	☐	the building exhaust system (only permitted for sprinklered buildings)
	Window(s) / Wall Panel(s) ☐ N/A	
OBC 3.2.6.6.(2)	☐	All windows and wall panels used for required venting are identified and labeled on the drawings.
		Are any of the windows used for venting fixed glass? ☐ NO ☐ YES (breaking of the window will NOT endanger pedestrians below)
OBC 3.2.6.6.(3)	☐	Openable windows used for required venting will be permanently marked so they are easily identifiable.
SB-4 [3.2.6.6.(1)](2)		Windows or wall panels used for venting;
	☐	are uniformly distributed along the exterior wall of each storey.
	☐	have a total area of not less than one percent of the exterior wall area of each storey.
	☐	are readily openable from the interior without the use of wrenches or keys.
	☐	are designed so that when opened they will not endanger persons outside the building during a fire.
	Remarks:	

Smoke Shaft(s)

	Smoke Shaft SB-4 Requirement	Shaft Label	Shaft Label	Shaft Label	Shaft Label
SB-4 [3.2.6.6.(1)](3)					
SB-4 [3.2.6.6.(1)](3)(a)	Leakage Area of Smoke Shaft Wall (Table 2 Value)	Choose an item.	Choose an item.	Choose an item.	Choose an item.
SB-4 [3.2.6.6.(1)](3)(a)	Leakage Area of Closures into Smoke Shaft (Table 3 Value)	Choose an item.	Choose an item.	Choose an item.	Choose an item.
SB-4 [3.2.6.6.(1)](3)(a)	Total Table 2 + 3	Choose an item.	Choose an item.	Choose an item.	Choose an item.
SB-4 [3.2.6.6.(1)](3)(a)	Min. Size of Vent Opening(s) from Storey Opening(s) (Table 1)				
	Each storey has the minimum size of vent specified above	☐	☐	☐	☐
SB-4 [3.2.6.6.(1)](4)-(9)	The smoke shaft complies with all applicable requirements of SB-4 [3.2.6.6.(1)](4) to (9)	☐	☐	☐	☐

Remarks:

Central Alarm and Control Facility (CACF Room)

OBC 3.2.6.7.(1) SB-4 [3.2.6.7.(1)]		The CACF room is;
	☐	located on the storey containing the entrance for firefighter access and is readily accessible to firefighters entering the building.
	☐	protected from fire and smoke by
	☐	protected from background noise by
	☐	ventilated with a supply of fresh air.
	☐	provided with adequate lighting.
OBC 3.2.6.7.(2)		The CACF room includes;
	☐ N/A ☐	(a) means to control the voice communication systems as required by 3.2.6.8.
	☐	(b) means to indicate audible and visual alert and alarm signals
	☐	(c) means to indicate visually that elevators are on emergency recall
	☐ N/A ☐	(d) an annunciator conforming to Article 3.2.4.8.
	☐	(e) means to transmit alarm and alarm signals to the fire department in conformance with 3.2.4.7.
	☐ N/A ☐	(f) means to release hold open devices on doors to vestibules
	☐	(g) means to manually actuate alarm signals selectively to any zone or zones
	☐	(h) means to silence the alarm signal referred to in (g)
	☐	(i) means to actuate auxiliary equipment identified in Articles 3.2.6.2., 3.2.6.3. and 3.2.6.6. or communicate with continually staffed auxiliary equipment control center
	☐	(j) means for two-way communications with every elevator car
	☐	(k) means to indicate visually, individual sprinkler system waterflow signals
	☐	(l) means to indicate audibly and visually, sprinkler and standpipe system supervisory signals and trouble signals
	☐	(m) a switch to silence the audible portion of a supervisory and trouble signals
	☐	(n) visual indication that the audible portion of a supervisory or trouble signal has been silenced
Remarks:		

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Voice communication Systems	☐ N/A	
OBC 3.2.6.8.(1)		Voice Communications systems conforming to Article 3.2.4.22. are **required** in the subject building because; ☐ (a) the floor of the top story is more than 36m above grade ☐ (b) a Group B2, or B3 occupancy floor area located above the third storey ☐ (c) a Group C retirement home occupancy floor area located more than 18 m above grade
Remarks:		
Testing		
OBC 3.2.6.9.(1)	☐	Smoke movement and mechanical venting systems will be tested in accordance with SB-4 [3.2.6.9.(1)] 'Testing for Smoke Control'.
Remarks:		