

Re: Fire Escape Systems for High Rise Buildings

Council on January 28, 1974 received the attached letter from Mr. Don C. Macintyre, President of the Burnaby Safety Council, requesting that the Booth Fire Escape System be examined, and that it, or a similarly adequate escape system, be established in the Building Code as a mandatory installation in high rise buildings. Council subsequently referred the correspondence to staff for a report, with the understanding that the information would also include comments on the Sky Van System of escape from buildings.

Attached to Council's reports are advertisements that describe the operational features of the Booth Sit-down and Sky Van Escape Systems.

The Fire Chief's comments and recommendation on the subject systems are as follows:

"I have enquired into and witnessed a demonstration of both the Booth Fire Escape and the Sky Van systems.

The Booth Fire Escape is designed for installation on balconies of apartment buildings. It fits to the underside of the balcony and is accessible by means of a trap door, which when opened triggers the escape to lower into a stairway position. The design is made in such a manner that almost anyone, regardless of physical handicaps, if they can sit up and move around, can save themselves.

This system has been viewed by many authorities and has received favourable comment from them but to my knowledge has not yet been used on any buildings and does not carry either U.L. or C.S.A. approval. It is possible to install this escape system in already constructed buildings as long as they have balconies. To be fully effective it would have to be installed in every suite.

The Sky Van system is an outside elevator system. There are some outside elevator systems being used in the Lower Mainland now. To be fully effective this would have to be installed at the end of a corridor which would again cause tenants to use corridors which might be full of smoke or fire.

Also when installed it can only be used in one location which could be cut off by the fire which would make it totally useless.

Either of these systems would be quite costly to install in a building at time of construction and even more costly to install in older buildings.

Other systems of life safety are being discussed and some are being recommended by authoritative organizations. Some have become law with the passing of the new National Building Code, others we trust, will become law when the new National Fire Code is passed.

Many fire safety regulations should be instituted but because of cost and the fact that they are not usually made retroactive, they are not often brought forward for consideration.

My recommendation is that either of these life safety systems would be acceptable, but not to take the place of any other systems now required by any code, only as added protection."

Attached is a further report on this matter from the Chief Building Inspector.

Continued ...

ITEM 25  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING April 29/74

Re: Fire Escape Systems for High Rise Buildings Cont'd.

RECOMMENDATIONS:

THAT the sections of the Municipal Building Bylaw regarding requirements for escape systems not be changed at this time (as noted in the attached report, work presently being done by the National Building and National Fire Code authorities may result in legislation that will require the incorporation of improved evacuation systems and equipment in buildings during the construction process; amendments would automatically be included in our Bylaw if and when new standards for mass evacuation equipment in high rise buildings are established by the National Building Code); and

THAT a copy of this report be sent to the Burnaby Safety Council.

ITEM 25  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING April 29/74

~~Ed. Agenta  
28/1/74~~



## BURNABY SAFETY COUNCIL

A CHAPTER OF BRITISH COLUMBIA SAFETY COUNCIL  
5645 East Broadway Street  
Burnaby 2, B. C.

PHONE: 298-2564

PLEASE REPLY TO: Don C. Macintyre  
January 13, 1974

RECEIVED

JAN 13 1974

MAYOR'S OFFICE

Mayor Tom Constable  
Members of Council  
The Corporation of the  
District of Burnaby  
4949 Canada Way  
Burnaby 2, B. C.

Dear Sirs:

The Burnaby Safety Council is acutely aware of the terrifying lack of adequate fire escape systems in high-rise buildings. We have recently examined Chief Booth's system which is designed to evacuate high-rise buildings. His sit-down escape system is suitable for all ages including the very young, the elderly and those in weak physical condition. It can be well concealed and is aimed for security. It is not expensive since it replaces one or more of the inside stairwells.

The Burnaby Safety Council unanimously recommends that the Booth Fire Escape system be examined by Council and that it, or a similarly adequate escape system, be made a mandatory part of our building code.

Yours in Safety,

*Don C. Macintyre*  
Don C. Macintyre  
President

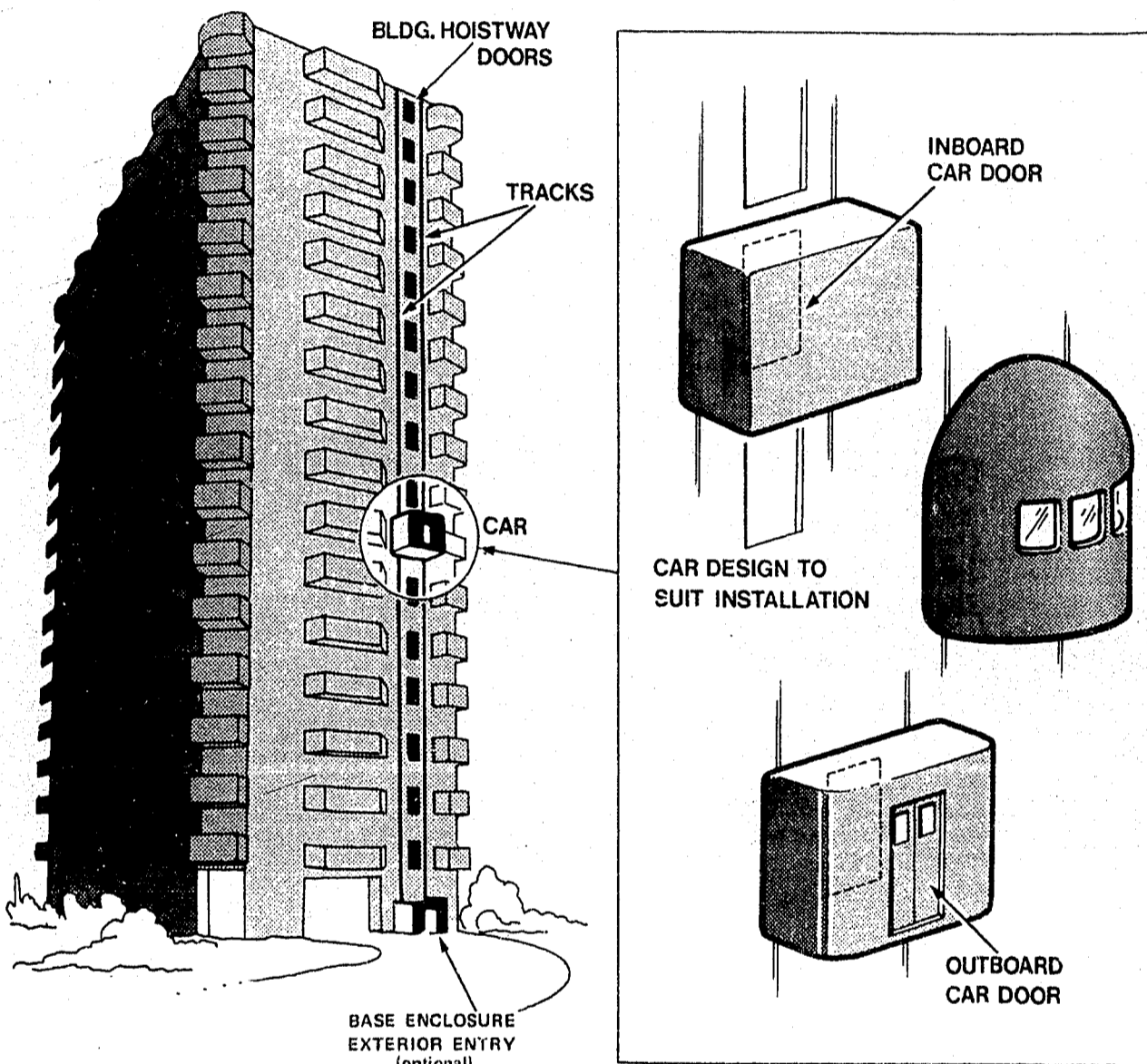
DCM:jv

cc: Municipal Engineer  
Fire Chief Booth

ITEM 25  
 MANAGER'S REPORT NO. 33  
 COUNCIL MEETING April 29/74



## model PB-2500 Passenger Elevator



### Specifications

CAPACITY \_\_\_ 2500 lbs. (16 persons) 29 sq. ft. (approx.)  
 SPEED \_\_\_\_\_ to suit application  
 LIFT \_\_\_\_\_ to suit application  
 CONTROLS \_\_\_\_\_ push button, auto.  
 INBOARD CAR DOOR 36"x84" auto. horizontal single sliding  
 (centre opening optional)  
 OUTBOARD CAR DOOR \_\_\_\_\_ optional to suit application  
 CAR DIMENSIONS  
 INTERNAL \_\_\_\_\_ 4'3" x 6'8" x 7'1" ht  
 EXTERNAL \_\_\_\_\_ 4'10" x 9'6" x 8'2" ht  
 CAR FINISH  
 INTERNAL \_\_\_\_\_ pa. . . .  
 EXTERNAL \_\_\_\_\_ embossed aluminum (or colour)  
 BLDG. HOISTWAY DOOR \_\_\_\_\_ 36"x84" auto. horizontal single  
 sliding (centre opening optional)

SKY VAN LTD.  
 3541 Cornett Road  
 Vancouver 12, B.C., Canada  
 604-437-9731

3070 Lenworth Drive  
 Mississauga, Ont., Canada  
 416-625-2155

SKY VAN SYSTEMS, INC.  
 One Greenwich Plaza  
 Greenwich, Conn. 06830, U.S.A.  
 203-889-2665

Details of other SKY VAN passenger, freight, and material handling models available on request.

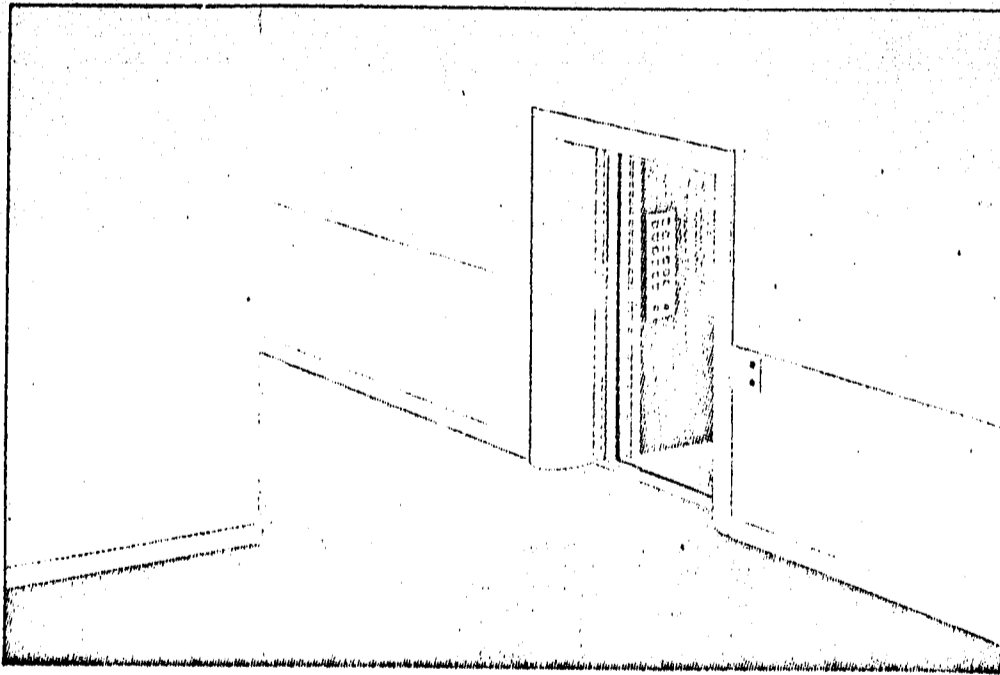
### MODEL PB-2500 EXTERIOR PASSENGER ELEVATOR

The SKY VAN exterior passenger elevator (Model PB-2500) is a unique and economical unit in which the car is cantilevered from tracks installed on the building's exterior surface. This design allows installation on both existing and new structures without requiring a costly conventional elevator hoistway.

The elevator car can be shaped and finished to suit the application. The car is exposed on the outside allowing outboard door access at grade and/or basement levels.

The SKY VAN exterior passenger elevator offers the following advantages:

1. It can be installed economically on both existing and new buildings.
2. Cantilever design allows building structural and design modifications to be kept to a minimum.
3. During construction or renovation a special "cage type" personnel and materials carrier can be used in lieu of renting a temporary hoist. Upon job completion, the "cage" is replaced by an attractive passenger elevator car for normal use.
4. The SKY VAN exterior elevator becomes an emergency fire fighting and evacuation system during a fire. It is capable of lifting firefighters and their equipment quickly and safely to the required floor, and can bring trapped occupants safely down outside the building.
5. Trucks can deliver hot foods, laundry and other daily needs to various floors by utilizing direct access to outboard car doors.
6. Refuse and janitorial services can use the outside access to all floors.
7. During periods of redecorating or renovation the PB-2500 reduces inconveniences to tenants.
8. Household goods are easily moved in and out of apartments.
9. Ambulance attendants have external access to all floors thereby avoiding "through the lobby" disturbance of tenants.
10. Internal elevators are relieved of many trips making them more available to occupants.
11. The PB-2500 can be used effectively as an observation car serving roof top restaurants, etc.



PB-2500 ELEVATOR CAR ENTRANCE AS VIEWED FROM INSIDE BUILDING

ITEM 25  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING April 29/74



THE CORPORATION OF THE DISTRICT OF BURNABY

BUILDING DEPARTMENT

MUNICIPAL HALL  
4949 CANADA WAY  
BURNABY B.C. V5G 1M2  
TELEPHONE 299-7211

RECEIVED

5 April, 1974

Your File: 6-3-73(28)

APR - 8 1974

MUNICIPAL MANAGER'S  
OFFICE

Mr. M. J. Shelley  
MUNICIPAL MANAGER

Dear Sir;

Subject: Booth Fire Escape Systems  
Burnaby Safety Council

This refers to a letter of January 13, 1974, from the Burnaby Safety Council to the Municipal Council, concerning life safety in high-rise buildings and recommending the mandatory requirement for the installation of the Booth Fire Escape System, or a similarly adequate escape system on such buildings.

At the moment the National Building Code authorities and the National Fire Code authorities are acutely aware of circumstances surrounding emergency mass evacuation of tall buildings, and are working toward legislation to bring about construction wherein greater safety for occupants can be maintained in such buildings during fire emergencies throughout evacuation time, as well as during time for fire fighters' access. I have examined a brochure on the Booth Fire Escape system, but have not seen a demonstration of the system. Under some circumstances I can visualize this escape system as aiding in the evacuation of buildings now constructed or presently being constructed, but agree with Fire Chief Collum's recommendation that the system could be accepted by building and fire authorities "...only as added protection", subject to provisions of the National Building Code.

Fire escapes as traditionally built and fastened to the exterior of buildings were recognized as containing serious drawbacks in building evacuation. The National Building Code has taken the position that a building must contain a means of egress system permanently within the building, suitable to the occupant load, and to this end has placed some restrictions on the use of fire escapes:

Article 3.4.1.4.

- (3) A fire escape shall not be erected on any new building.
- (4) A fire escape shall not be erected as an addition to any existing building unless approved.
- (5) A slide escape shall not be erected on any building as a required exit.

ITEM 25  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING April 29/74

Mr. M. J. Shelley  
MUNICIPAL MANAGER

5 April, 1974

- 2 -

Article 3.4.1.2.

(2) Where alterations are made or changes of occupancy occur in an existing building,

(b) the authority having jurisdiction may require any deficiency in exits to be corrected and may permit fire escapes as described in Article 3.4.8.16 for this purpose provided such fire escapes serve floor areas not more than five storeys above the finished ground level.

In reply to the two questions you raised in your memorandum of February 13, and as I understand the Provincial legislation which enacted the National Building Code of Canada 1970 as a Provincial Building Code, we cannot amend the Municipal Building By-law to authorize the use of any patented fire escape system unless the system were used within the scope of the above quoted articles. This understanding is based on Section 719A(4) of the Municipal Act.

"Any provision of a municipal by-law that purports to deal with matters regulated by Parts II to VI, inclusive, and Parts VIII and IX of the National Building Code, or by the code referred to in Subsection (2), as amended, added to, or varied, and is inconsistent therewith, is of no force and effect and shall be deemed to be repealed; but a building or structure commenced under a valid building permit issued before this section comes into force may be continued to completion in accordance with the conditions of the permit and the provisions of the municipal by-law in force prior to that date.

I believe the foregoing answers your second question regarding mandatory use of a fire escape system. Moreover, I could not support in principle making mandatory any patented building construction method or system.

In your memorandum of February 13, you mentioned the Sky Van System, and in that connection I attach hereto a copy of my report of May 15, 1970, to Mr. H.W. Balfour, Municipal Manager. My remarks about mandatory use of a patented building system made above apply equally to the Sky Van System.

Yours truly,

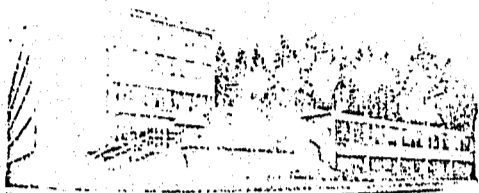


M. J. Jones  
CHIEF BUILDING INSPECTOR

MJJ:cmg  
Attch.

cc: ( )Municipal Solicitor ( )Fire Chief

ITEM 25  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING April 29/74



THE CORPORATION OF THE DISTRICT OF BURNABY

BUILDING DEPARTMENT

MUNICIPAL HALL  
4949 CANADA WAY,  
BURNABY 2, B.C.

TELEPHONE 299-7211

RECEIVED

May 15, 1970

MAY 19 1970

Mr. H. W. Balfour  
Municipal Manager  
Corporation of Burnaby

MUNICIPAL MANAGER'S  
OFFICE

Dear Sir:

Subject: Sky Van System

Yesterday I dropped in at 4608 Canada Way, the office of Sky Van Limited and had a long chat with Mr. J. K. McGuigan, Executive Vice President.

Sky Van Systems Limited is a subsidiary of Heede International Incorporated, and will specialize in vertical and horizontal containerized transportation. With the resources of the Heede Company, Sky Van has developed a system of handling nearly any commodity, including people, which can be packed into standard sized container units for transportation either into or out of a building. At a first glance this system appears to have vast potential. Sky Van is momentarily awaiting it's patent rights to this system, whereupon it will commence active marketing of the system.

Heede Incorporated pioneered the concept of the climbing crane, which is used throughout the world now on the construction of all major buildings. Sky Van has taken the idea of providing on a construction site horizontal and vertical transportation for materials with a temporary crane, and evolved the idea of permanently constructing into a building a device which during construction will provide vertical or horizontal transportation for materials and personnel, and which will continue to function after completion of a building as a transportation system to service the needs of the building. A natural use of the system is to provide a means of transportation during an emergency situation in a building when normal means of vertical transportation (stairways or elevators) might be inoperative. To this end Sky Van has prepared and delivered to a selected mailing list the brochure which you received. The Sky Van System is a business intended to make a profit for it's owners and shareholders. It will be aided in this purpose if it can gain acceptance, or better yet the backing of legislation, of the system as a means of life safety in buildings.



.....2



ITEM 25  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING April 29/74

Mr. H. W. Balfour  
Municipal Manager  
Corporation of Burnaby

Building Department

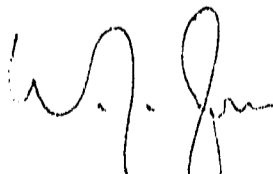
May 19, 1970

Essentially the system is a vertical elevator on the exterior of a building face, heavily engineered with a wide margin of safety, and equipped with an elaborate communication and control system, all of which is capable of use for the entire life of the building. Also the system can be installed on existing buildings subject to some modification of the buildings. All that is needed in either new or existing buildings is some free air space adjacent to a building and some vehicular access to that point on the building. I could not pin Mr. McGuigan to giving me a cost for this system installed in a building. It seems that the Sky Van System will be franchised out to those major firms in the moving and transportation business such as Bekins, Johnsons and others, who will lease the system from Sky Van. The moving companies will then recover their leasing costs in the charges they make to their individual customers or building owners who they will service with the Sky Van System. The cost of providing for life safety in high-rise buildings is very real and will be increased by a forthcoming regulation to be contained in building codes. Sky Van is very aware of this development in our building practise and says in part, "If expensive communication systems have to be built into high-rise buildings to be available in times of emergency, why not integrate those communications with other controls and make them available for regular use as well as emergency use?" In the case of firefighting Sky Van would suggest that a fire department would own a container unit or units, specially equipped as necessary, which would rush to the scene of a fire in a building equipped with a Sky Van System just as any other piece of fire apparatus would respond, and upon arrival, within thirty seconds, would be fastened to the Sky Van apparatus and capable of rising up the side of a building. The system certainly can improve access to buildings by firefighters hitherto dependent on and limited to the aerial ladder.

Mr. McGuigan and his company have made representation to the Building Code Officials in Ottawa and are hopeful that some recognition will be afforded to their idea, but regardless of this they will soon actively be marketing their system for containerized transportation of goods and personnel.

At this point I have an open mind on the idea being advanced by Sky Van Limited, and await with interest further development. Regardless of the outcome of the fire-safety aspect I believe the system will receive the acceptance of building owners and users for the everyday movement of goods because of its economics of removing a freight elevator(s) from within the costly floor space of a major building and placing it in air space on the exterior of a building. Success of the system though is dependent upon complete containerization of goods and modular coordination of container unit sizes with sizes of openings into buildings.

Yours truly



M. J. Jones  
CHIEF BUILDING INSPECTOR

MJJ/dm