

BC BUILDING CODE INTERPRETATION COMMITTEE
AIBC, APEGBC, BOABC, POABC

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INTERPRETATION

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Interpretation Date: January 19, 2010

Building Code Edition: BC Building Code 2006

Subject: Below grade stair pressurization in a high buildings, Separate shafts for above and below grade stairs in high buildings

Keywords: Below grade stair pressurization, high building, smoke control measures, above and below grade stair shafts

Building Code Reference(s): 3.2.6.2.(2), Appendix B-3.2.6.2.(2)-(2)(a), B-3.2.6.2.(2)-(2)(b)

Question:

1. In a high building that is regulated by Subsection 3.2.6, is mechanical pressurization required in an exit stair that is located below the lowest exit level which only serves the underground storage garage, leads directly outside and is not connected to the high building above?
2. If the exit stair as described in Question #1 is open to the exterior at the top, is mechanical air supply at the still required at the bottom of the stair shaft?
3. In a high building that contains a low-rise wing which is not separated with a firewall, can an exit stair that serves the storeys below the lowest exit storey be located in the same shaft as an exit stair that serves the storeys above the lowest exit storey when the stair only connects the below grade storeys to the above grade storeys within the low-rise component?

Interpretation:

1. Yes - Appendix B-3.2.6.2.(2) requires compliance to all three Sentences included within that Appendix note.
 - A stairway that serves floors below the lowest exit level must have a vent or door at the top,
 - The stairway that serves floors below the lowest exit level must be enclosed in shaft that is not connected to the above grade stair, and
 - The stairway that serves floors below the lowest exit level must be provided with mechanically air supply at the bottom of the stair shaft.
2. Sometimes - If the requirements of Sentence 3.2.6.2.(2) to maintain less than 1% contaminated air within the stair shaft can be achieved without mechanical air supply, then the mechanical air supply would not be required. For example a below grade stair that is only one storey in height and is open on the top will likely achieved the 1% criteria without any mechanical air supply. On the other hand a below grade stair that is 8 storeys in height will likely require mechanical air supply at the bottom in order to meet the 1% criteria.
3. No - Appendix B-3.2.6.2.(2)-(2)(b) states that a stairway in a high building that serves upper storeys must be in a separate shaft from a stairway that serves storeys below the lowest exit level. The fire separation between these two shafts must have the same fire resistance rating as the shaft enclosure (i.e. 2 hour fire resistance rating). There is no exemption for the case where the below grade stair only connects to a low-rise component of a high building.


R. J. Light, Committee Chair