

Do Bathrooms and Kitchens Really Need Exhaust Fans if they have Openable Windows?

Prior to the 1993 Ontario Building code (O.Reg. 158/93) there was no particular requirement to provide mechanical exhaust from bathrooms and kitchens. Since that time, however, it has been debated as to whether opening a window in such a room is an alternative to the exhaust air intake requirement in kitchen, bathroom and water closet rooms required by sentence 9.32.3.5.(2).

PRE-1993 The OBC version immediately preceding the 1993 edition is O.Reg. 400/91. This edition contained a General sentence 9.32.1.2. which allowed non-heating season (i.e. summer) ventilation to be provided by natural means according to subsection 9.32.2. or mechanical means according to subsection 9.32.3. Subsection 9.32.2 contained several sentences and consisted essentially of Table 9.32.2.A. which gave minimum openable area for natural ventilation openings. Subsection 9.32.3. required that every dwelling unit be provided with a mechanical ventilation system having a capacity of not less than 0.3 air changes per hour averaged over 24 hours. There were several subsequent requirements, many of which applied to negative pressure and the now infamous hole in the wall solution, but there were no requirements for where the air was to be withdrawn from the house.

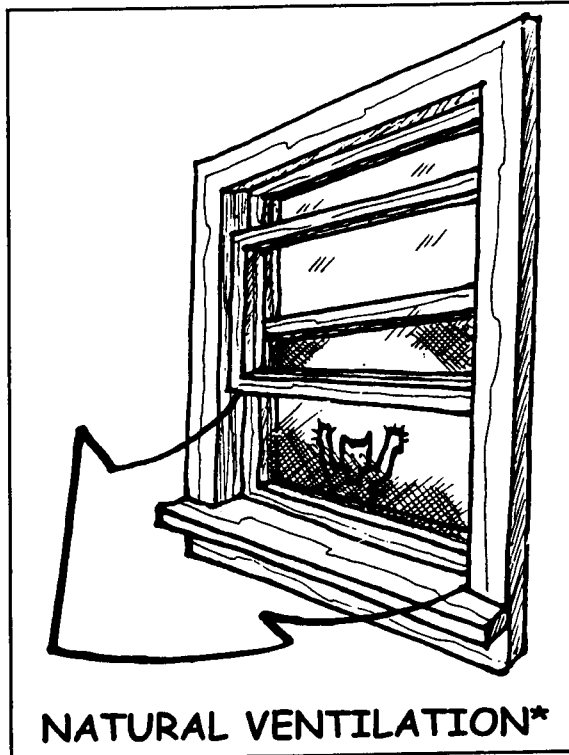
1993

The 1993 edition of the OBC (O.REG 158/93)

introduced substantial changes to the residential ventilation requirements.

Section 9.32 now contained two general sentences, the first of which (9.32.1.2.(1)) required rooms or spaces in dwelling units to be ventilated

according to subsection 9.32.2 or subsection 9.32.3. without regard to the time of year. 9.32.2. contained the usual table of minimum openable areas. Subsection 9.32.3. was entirely new and contains the sentence 9.32.3.2.(1) which required that every dwelling unit that is supplied with electricity be supplied with a ventilation system complying with Part 6 or Subsection 9.32.3.. The section defined total and principle ventilation capacities, principle and supplemental fans and included sentence 9.32.5.(2) which calls for an exhaust intake to be installed in each kitchen, bathroom and water closet room. Most building



code interpreters have taken the sum of these requirements to mean that each bathroom, kitchen and water-closet room must be equipped with a point of exhaust, whether that be a single fan, or an inlet to a central system. The rationale for this was that sentence 9.32.3.2.(1) applies to the dwelling unit as a whole and so must be complied with, including the sentence requiring mechanical exhaust in kitchens and bathrooms. Sentence 9.32.1.2.(1) was considered to apply only to the rooms where natural ventilation is not provided. In the case of a bathroom or kitchen, an exhaust device required by sentence 9.32.3.5.(2) would be required in any event, so it does not

matter whether there is an openable window in the room or not. An alternative opinion was advanced however, that sentence 9.32.1.2.(1) in fact provided an alternative to sentence 9.32.3.5.(2) and could be read to allow a natural ventilation opening to serve as the Exhaust intake required by that sentence.

Current Status

The 1997 OBC (O.Reg 403/97) Section 9.32 has been revised subtly but significantly with regard to this particular point. There is now a clause in the General part of Section 9.32 which addresses Mechanical Ventilation only. Sentence 9.32.1.2.(1) requires that very dwelling unit supplied with electricity be equipped with a mechanical ventilation system conforming to Subsection 9.32.3.. This sentence was previously found inside subsection 9.32.3. and not as part of the general requirements of Section 9.32.

The General part of Section 9.32. now contains a clause which addresses natural ventilation only. Sentence 9.32.1.3.(1) of that clause requires rooms or spaces to be provided with natural ventilation and sentence 9.32.1.3.(2) provides an exception whereby a room or space may be ventilated by mechanical means, but not necessarily according to subsection 9.32.3. as previously required. Sentence 9.32.1.3. (3) provides the standard requirement for rooms not equipped with natural ventilation to have minimum ventilation capacity of 1/2 air change per hour if air conditioned and 1 air change per hour if not.

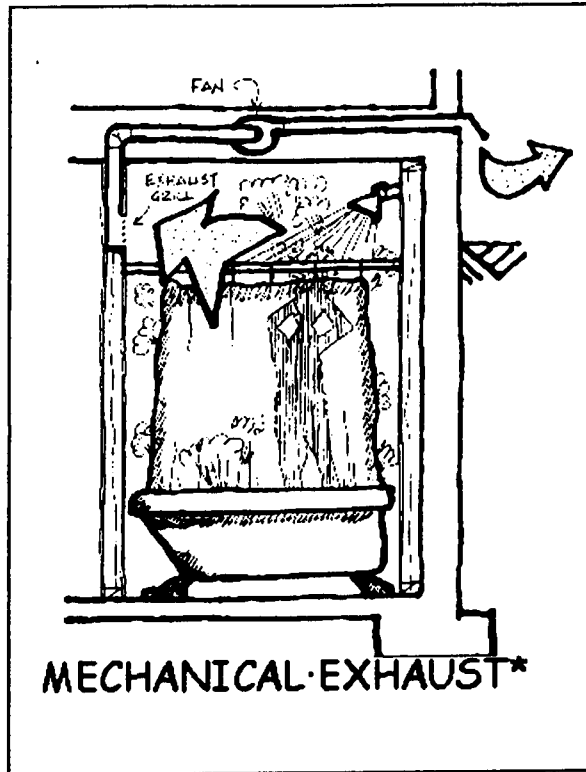
The effect of these subtle changes is not to remove the argument that natural ventilation is an alternative to the mechanical exhaust required in kitchens and bathrooms by sentence 9.32.3.5.(2).

Summary & Conclusion

Although openable windows were at one time allowed as alternatives to mechanical exhaust in

kitchens and bathrooms in houses, this is no longer the case. The current OBC requires the mechanical exhaust to be provided in all kitchens, bathrooms and water closet rooms, whether or not the rooms also have natural ventilation.

A check of other standards such as CSA F326 will find that this is consistent. F326 requires that bathrooms be equipped with a minimum of 20 cfm exhaust capacity if continuous and 50 cfm if intermittent. These requirements do not depend on whether or not there is a means of natural ventilation in the room.



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NOTE: The opinions expressed in this column are those of the writers and do not reflect the views of HRAI, OBOA or any other agency, corporation or individual.

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