NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Above Grade Vent Well Size Requirements for Natural Ventilation

Code: 2018 Building Code   **Date:** September 13, 2018
Section: 1203.5.1.2 & 406.5.2.1   June 4, 2020

Question:
Do vent wells that are provided for natural ventilation and located above grade need to meet the size requirements of Section 1203.5.1.2 for "Openings Below Grade"? "Vent well" as it pertains to this question is a vent shaft that is open at the top, enclosed on 4 sides, and is provided for natural ventilation of a building.
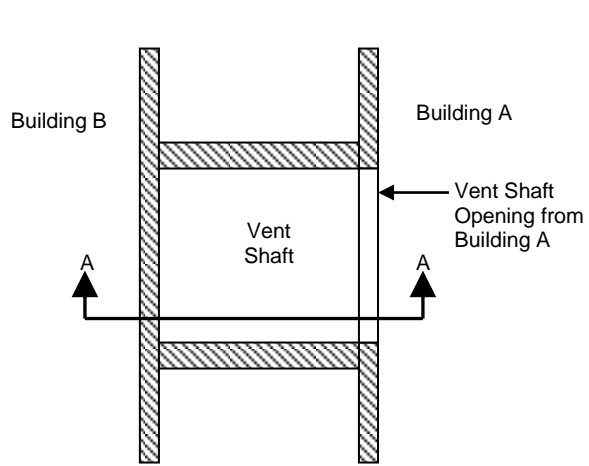
Answer:
Yes. An above grade vent well is very much like a below grade opening as described in Section 1203.5.1.2. To move air up and out of the well there must be enough horizontal distance to sustain air movement in the well. The code has determined that a horizontal distance of 1.5 times the depth of such a well will provide adequate air movement to vent the space (see Plan View and Section A-A below).
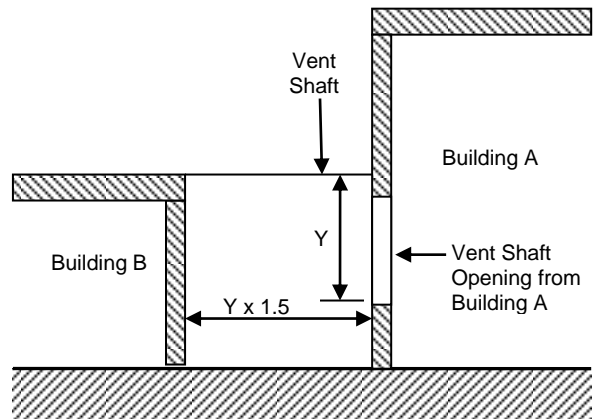
Section 1203.5.3 – Openings on Yards or Courts will not apply to these types of ventilation wells because the code is expecting a yard or court to have a connecting horizontal opening that allows air to flow horizontally in or out of the space.

Above grade vent wells are frequently used to provide natural ventilation for parking decks that are immediately adjacent to other buildings. The vent well is often required to qualify the parking deck as an "open" parking deck which may then exempt it from an automatic sprinkler system. Section 406.5.2.1 then applies to the parking structure vent well just as Section 1203.5.1.2 applies to other vent wells.

It is not the intent of this interpretation to require continuous "courts" running parallel to an open parking garage to have a court width of 1.5 times the height of the garage to provide cross ventilation at an open parking garage; this interpretation only applies to "vent wells" and NOT to continuous "courts".

Plan View

Section A-A

Keywords:
Enclosed parking deck, open parking deck