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Building Plan and Management Division

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Dear Sir

VENTILATION REQUIREMENTS FOR RESIDENTIAL DEVELOPMENTS

Objective

This circular is to remind the industry that residential developments should be designed for natural ventilation.

Residential Developments Should be Designed for Natural Ventilation

2 BCA has observed an increasing number of waiver applications for residential developments to be designed for mechanical ventilation. While mechanical ventilation for fire-fighting or smoke-stop lobby is permitted with certain restrictions under the Fire Code, we would like to reiterate that residential developments must still be designed to comply with natural ventilation requirement as stipulated in the Approved Document under the Building Control Regulations.

3 Compared to a mechanical ventilation system, the provision of natural ventilation is a fail-safe means of providing ventilation and smoke dispersion, eliminating the possibility of failure in the mechanical ventilation system. In addition, natural ventilation helps to promote the conservation of energy and eliminates the need for maintenance on the mechanical system.

Ventilation Requirement for Residential Developments Under Building Control Regulations and Approved Document

4 Under clause G.2.2 in the Approved Document of the Building Control Regulations, all residential developments (except for houses which are built by the owners for their own use) must be designed for natural ventilation.

5 Every room/space in the development (except for some specific exemptions¹) must be designed to be naturally ventilated by means of one or

¹ The requirement for natural ventilation does not apply to the following spaces:

- a) Utility room and store room not exceeding 6.0m² in floor area;
- b) Bathroom, toilet or lavatory;
- c) Basement;
- d) Civil defence shelter; and
- e) Clubhouse, gymnasium/fitness centre and management office.

more openable windows or other openings with an aggregate area of not less than 5% of the room/space to be ventilated. Where a window is installed to provide ventilation to a room/space, it must be designed and constructed to be able to be opened fully.

6 In the case of aboveground car park, the required aggregate area of the openings in the wall must be at least 15% of the ventilated floor area.

Compliance with Ventilation Requirements Under Fire Code

7 There could be instances where a residential development could be designed to comply with the natural ventilation requirements under the Building Control Regulations but could face constraints in meeting the natural ventilation requirements under the Fire Code. For example, in some developments, the lift lobby (which also doubles up as a fire-fighting or smoke-stop lobby) may be located at the centre of the building such that it may not be able to meet the natural ventilation requirements as stipulated in the Fire Code (i.e. provision of openings with an aggregate area of at least 15% of the floor area of the lobby and the openings must be located within 9m from any part of the lobby). In such circumstances, FSSD permits the provision of ventilation by mechanical means instead of natural means under fire conditions; except that for residential developments exceeding 24m but not 60m in habitable height with only one exit staircase, the lobby must be naturally ventilated and cannot be mechanically ventilated. However, this should not deter the Architects from complying with Building Control Regulations by providing natural ventilation in non-fire mode (i.e. the fire-fighting or smoke-stop lobby can be provided with openings with an area of at least 5% of the floor area of the lobby for natural ventilation).

For Clarification

8 We would appreciate it if you could convey the contents of this circular to the members of your organisation. For clarification you may call our hotlines as shown below.

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BCA (on Building Control Regulations)	6325 7159
FSSD (on Fire Safety Regulations)	6848 1452

Yours faithfully



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