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To: Building Owners, Developers, Architects,
Engineers, Builders and Facility Managers

For enquiries, please contact:
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<https://www.bca.gov.sg/feedbackform/>

ADVISORY ON GOOD PRACTICES FOR THE INSPECTION AND MAINTENANCE OF SUSPENDED CEILINGS

This Circular advises the industry on good practices for the maintenance of suspended ceilings, especially in public spaces including those with high ceilings and those at the building periphery, which could be prone to weather effects such as wind gusts and rainwater seepages.

2 Recent incidents at Golden Mile Complex and Northpoint City, where parts of a suspended ceiling had collapsed and posed a risk to public safety, are a stern reminder to the industry of the importance of building safety. We would like to reiterate and remind building owners of their responsibility to ensure that their buildings, including the suspended ceilings in these buildings are regularly inspected and maintained, so that they remain safe for its occupants and the public. You may refer to our earlier advisories dated 18 Mar 2015 and 30 Nov 2018 for more information on the good practices for the design and installation of suspended ceiling works.

Common causes of suspended ceiling collapse

3 The common causes of suspended ceiling collapse are as follows:

- a) Inadequate regular inspections and ineffective maintenance regimes that lead to undetected or unaddressed defects and issues in the ceiling, such as prolonged sagging, water ponding¹, corrosion, termite infestation, spalling of supporting concrete elements and other forms of wear and tear;
- b) Inappropriate use of suspended ceiling space for maintenance, such as maintenance personnel crawling on the suspended ceiling causing overload and damage to the suspended ceiling components or the supporting structures;
- c) Inappropriate alteration and/or removal of the supporting structures, such as hangers, of the suspended ceiling;
- d) Inappropriate addition of fixtures or equipment to the suspended ceilings such that additional loads are imposed beyond the allowable loads that the suspended ceilings and the supporting structures are designed to carry; and
- e) Poor workmanship and unsupervised installation of suspended ceilings.

¹ Water leakages and ponding in the suspended ceiling space could have been caused by defects of the roof, plumbing or air-conditioning mechanical ventilation (ACMV) systems, which could have redirected water into unintended regions such as the suspended ceiling space.

Signs of damage or deterioration of suspended ceilings

4 Building owners should be vigilant and look out for any of the following warning signs that may indicate defects in suspended ceilings:

- a) Sagging / deformed suspended ceiling components or dislodgement of any of the suspended ceiling panels or components;
- b) Missing or damaged supporting structures of the suspended ceilings such as hangers;
- c) Any fixtures or equipment that may have dislodged and is imposing its self-weight onto the suspended ceilings;
- d) Presence of water stains, black mould or signs of corrosion / rust on the suspended ceiling components and supporting structures; and
- e) Spalling concrete, termite infestation or deterioration of the structural elements to which the suspended ceilings are installed.

Regular inspection and maintenance of suspended ceiling

5 Defective suspended ceilings pose a risk to public safety. Building owners should carry out regular inspections and maintenance of suspended ceilings, and ensure prompt rectification work is carried out to arrest potential damage or deterioration of suspended ceilings, including adopting these practices:

- a) Schedule and keep record of annual inspections and other steps taken for maintenance of the suspended ceilings in the building to:
 - i) Identify early any defects that require attention and to conduct a detailed investigation to ascertain the root causes of such defects and repair the defects promptly;
 - ii) Identify and rectify any inappropriate alteration or removal of supporting structures of the suspended ceilings; and
 - iii) Identify and rectify any inappropriate imposition of additional load on the suspended ceilings and its supporting structures².
- b) Promptly inspect and address any maintenance issues reported by tenants or members of the public, such as water leaks from roof, plumbing and air-conditioning mechanical ventilation systems;
- c) Adhere to the maintenance manual provided by the ceiling supplier / manufacturer and do not alter the proprietary ceiling systems and its components without consulting the supplier / manufacturer;
- d) Procure suspended ceiling systems from reliable suppliers who provide warranty / maintenance support; and

² Imposition of additional load on the suspended ceiling and its supporting structures could be due to the addition of fixtures to or incorrect access of the suspended ceiling space during maintenance.

- e) Engage a registered PE in the Civil engineering discipline to design and supervise the installation of the supporting structures of the suspended ceiling.

Clarification

6 Please bring the contents of this circular to the attention of your members. Should you need any clarification, please submit your enquiry through BCA's Online Feedback Form at <https://www.bca.gov.sg/feedbackform/> or call us at 1800 342 5222.

7 Thank you.

Yours faithfully



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