

Our Reference: APPBCA-2021-20

20 October 2021

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Dear Sir/Madam

FEEDBACK SOUGHT ON PROPOSED AMENDMENTS TO THE BUILDING CONTROL REGULATIONS 2003 RELATING TO THE SUBMISSION OF LIGHTNING PROTECTION SYSTEM PLANS

The Building and Construction Authority (“BCA”) is inviting feedback from the industry on proposed amendments to the Building Control Regulations 2003 (“BC Regulations”) in relation to the submission of Lightning Protection System (“LPS”) plans.

Background

2 Currently, BCA’s practice does not require an application for approval of LPS plans. BCA currently regulates the LPS of buildings by requiring the appointed Professional Engineer (Electrical) of a project to submit a Certificate of Design & Supervision of Lightning Protection System, the As-Built Plan and a Commissioning Report in relation to the LPS as part of the application for temporary occupation permit / certificate of statutory completion for the project for purposes of certifying that the design, installation and commissioning of the LPS are in accordance with the Singapore Standard SS555 Code of Practice for Protection Against Lightning.

3 In order to ensure that a LPS of a building is properly designed, supervised and installed early in the project life cycle, and to avoid having to make subsequent revisions to the architectural design of a building after the architectural design has been finalised, we are proposing to introduce a requirement under the BC Regulations for an application for approval of the LPS plans as part of the building works, where applicable.

Proposed amendments to the BC Regulations

4 Please see Annex A for details of the proposed amendments to the BC Regulations.

5 We are conducting a public consultation to gather feedback on the proposed amendments to the BC Regulations in respect of the requirement under the BC Regulations for an application for approval of the LPS plans as part of the building works, where applicable. Feedback from the public consultation will be taken into account when drafting the amendments to the BC Regulations.

6 Please note that the proposed amendments to the BC Regulations are released only for the purpose of a public consultation and should not be used or relied on by industry stakeholders, adjudicators or authorised nominating bodies, as they may not represent the final legislative changes.

Consultation Details

7 The consultation period in respect of the proposed amendments to the BC Regulations will start on 20 October 2021 and end at 12 noon on 16 November 2021 (“Consultation Period”).

8 Members of the public can send their views and inputs through post or email to the following addresses during the Consultation Period:

By post:

ATTN : TAN KENG SWEE
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Building Plan and Management Group
Building and Construction Authority
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By email:

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Yours faithfully



AR. JANE ONG
DIRECTOR
BUILDING PLAN AND POLICIES DEPARTMENT
BUILDING PLAN AND MANAGEMENT GROUP
for COMMISSIONER OF BUILDING CONTROL

ANNEX A

LIST OF PROPOSED AMENDMENTS TO THE BUILDING CONTROL REGULATIONS 2003

Lightning Protection System

To ensure the buildings and the occupants are better protected from the effects of lightning strike. The key proposed amendments are as follows:

No	Item	Proposed Amendment	Rationale/Comments
1	Definition of "lightning protection system"	"lightning protection system" means a system comprising an air-termination system, a down-conductor system and an earth-termination system, which is installed on the exterior of a building and collectively intercepts, conducts and disperses lightning currents to earth.	To prescribe the meaning of a "lightning protection system" under the Building Control Regulations 2003.
2	Submission of lightning protection system plans	<p><u>Formal submission and approval of lightning protection system plans</u></p> <p>No one is allowed to carry out any works relating to the lightning protection system (i.e. erection, extension, alteration, addition works involving external works) before the Commissioner of Building Control has approved the lightning protection system plans.</p> <p>The Developer must apply for such approval by submitting the relevant lightning protection system plans that have been prepared and signed by a qualified person. Procedures and requirements for the following will be added to the Building Control Regulations 2003 to facilitate the plan approval process:</p> <ul style="list-style-type: none"> (a) application for plan approval (b) deviations from approved plans 	<p>To prescribe a new requirement for an application for approval of the LPS plans as part of the building works, where applicable.</p> <p>This proposed new requirement will allow the design of lightning protection systems to be evaluated at an earlier stage for compliance.</p> <p><i>(Note: The various provisions for plan submission and approval for lightning protection systems are similar to the</i></p>

No	Item	Proposed Amendment	Rationale/Comments
		(c) lapsing or revocation of approval of plans (d) modification or waiver of requirements	<i>existing provisions for submission and approval of plans for building works.)</i>
Lightning Protection System Plans & Site Records			
3	Lightning protection system plans	<p>The lightning protection system plans must specify the class of lightning protection system and where applicable, consist of or contain the following:</p> <ul style="list-style-type: none"> (a) a site plan (b) the roof plan of the building containing or showing — <ul style="list-style-type: none"> (i) the air-termination system and location of air-terminal rods and metal coverings; (ii) the location of the down conductors; and (iii) the location of the points where there is equipotential bonding of tapes to exposed metallic fixtures, including but not limited to railings, fencing, water tanks, pipes, mechanical ventilation ducts, cable containments and M&E services. 	To prescribe the particulars to be contained in lightning protection system plans.

No	Item	Proposed Amendment	Rationale/Comments
		<p>(c) an elevation plan showing —</p> <ul style="list-style-type: none"> (i) the zones of lightning protection for the structures and open spaces of a building when the rolling sphere method, mesh method or protection angle method, or a combination of two of these methods, is applied; (ii) the zones of lightning protection provided by the air-termination network on the lateral surfaces of a building when the mesh method is applied; and (iii) the location of the down conductors; <p>(d) the floor plan of [the] storey where the earthing inspection chambers or foundation earth electrodes are located;</p> <p>(e) the floor plan of [the] storey showing the location of the points where there is equipotential bonding of tapes to —</p> <ul style="list-style-type: none"> (i) exposed metallic fixtures, including but not limited to railings, fencing, water tanks, pipes, mechanical ventilation ducts, cable containments and M&E services.; and (ii) any component of the structural system of the building that is part of the down-conductor system, including but 	

No	Item	Proposed Amendment	Rationale/Comments
		not limited to metal columns, metal facade and metal rebars of the structural columns.	
4	Site Records	<p>The supervising qualified person shall keep and maintain the following documents, books and records at site :</p> <ul style="list-style-type: none"> ▪ a record of inspection and of the test results relating to the electrical continuity of the lightning protection system installed at any building on the premises at which building works are carried out; and ▪ a record of inspection and of the measurement of earthing electrodes and overall earth-termination system resistance. 	To prescribe the documents, books and records that the supervising qualified person appointed in respect of any building works shall keep and maintain at the premises on which the building works are carried.
Lightning Protection Works that do not require plan submission			
5	Insignificant Building Works	Building works relating to the lightning protection system will be considered as insignificant building works and will not require plan submission if such works relate to a one to one replacement or reinstatement of any lightning protection system, or any repairs to any existing lightning protection system, except where such works are carried out together with other building works that are not insignificant building works.	To set out that where there is one-to-one replacement or reinstatement of or repairs to any existing lightning protection system within a site where other building works that are not specified in the First Schedule are performed, plans of building works (that include lightning protection system plans) will have to be submitted to the Commissioner of Building Control.

No	Item	Proposed Amendment	Rationale/Comments
6	Qualified Person	Lightning protection system plans must be prepared and signed by a professional engineer registered under the Professional Engineers Act in the branch of electrical engineering.	To provide clarity on the appropriate qualified person that shall prepare and sign plans of building works relating to any lightning protection system.
Objective & Performance Requirement of a Lightning Protection System			
7	Objective & Performance Requirement	<p>The objective and performance requirements of a lightning protection system are to be as follows:</p> <p><u>Objective</u></p> <ul style="list-style-type: none"> The objective of the performance requirement of a lightning protection system is to protect a building against physical damage caused by lightning strike and to protect its occupants from the risk of lightning current being discharged through the building. <p><u>Performance Requirement</u></p> <ul style="list-style-type: none"> A lightning protection system must be capable of protecting the building against lightning strike and in turn the occupants of that building from being exposed to any lightning current that is discharged through the building. 	To provide more clarity on the proposed objective and performance requirement of a lightning protection system.



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