TOP/CSC Inspection Common Findings and Smart Initiatives

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COMMON FINDINGS FROM TOP/CSC INSPECTIONS

Inspection Common Findings Observed in 2025

Lightning Protection System

- Compliance to SS 555 (e.g. provision of LPS signage, bonding, LPS tape materials etc.)

Headroom

- The headroom shall not be less than 2.0m.

Staircase

- Treads and riser should be of uniform height and size.
- A tolerance of 5mm between two consecutive steps in staircases.
- All steps must be fitted with non-slip nosing strips between 50 mm and 65mm in width with permanent contrasting colours

Safety From Falling

- Appropriate measures shall be taken to prevent people from falling from a height of ≥1m
- A barrier must be at least 1m high
- A barrier must be at least 850mm when measured from the last climbable toehold
- There must not be any gap (75mm) at the lowest part of the barrier
- Size of opening in a barrier must be less than 100mm for non-industrial buildings

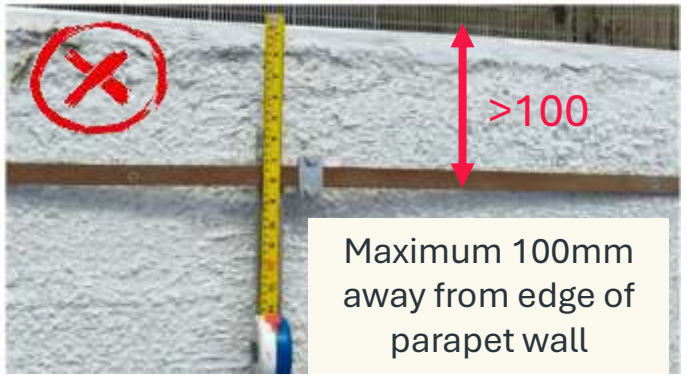
Accessible Washrooms, Doorways and ramps

- Floor surfaces must not have any drop or unexpected variations in level
- Ramp and landing must be of contrast colour

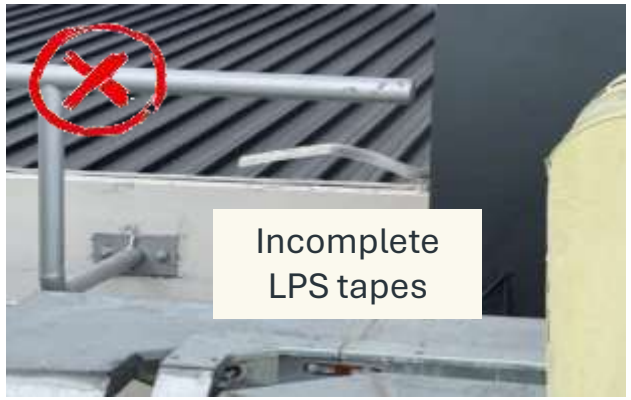
LIGHTNING PROTECTION SYSTEM

AD SECTION L CLAUSE 3.1

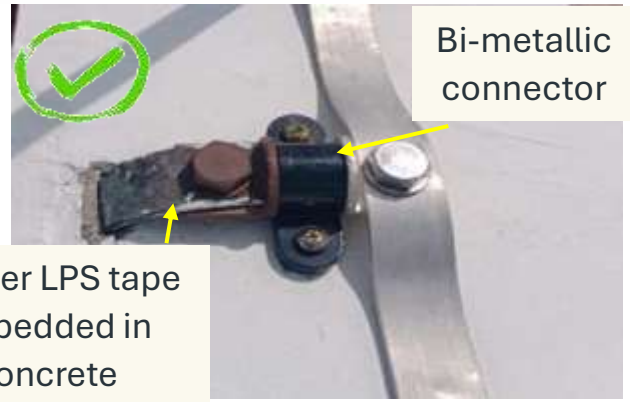
Lightning Protection System to be designed and in accordance with SS 555.



Maximum 100mm away from edge of parapet wall

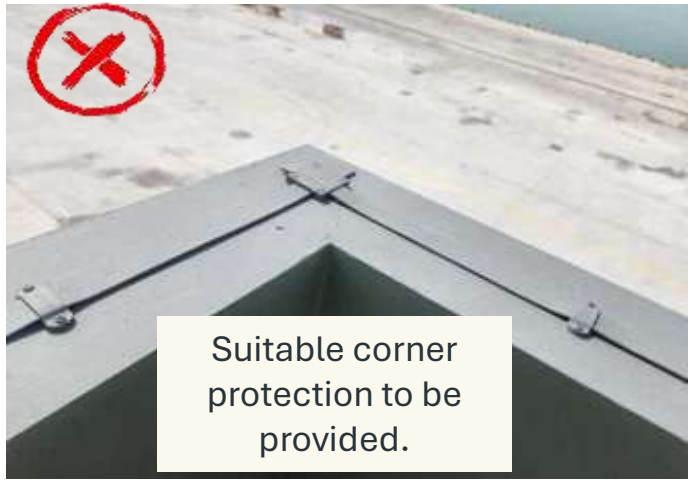


Incomplete LPS tapes



Bi-metallic connector

Copper LPS tape embedded in concrete



Suitable corner protection to be provided.

Touch Voltage at habitable area

LPS Warning sign provided at entrances to habitable & non-habitable spaces

HEADROOM AND CEILING HEIGHT

AD SECTION C - CLAUSE C.3.2.1

The headroom of every room, access route and circulation space shall not be less than 2.0 metres.

Circulation spaces

Sprinkler running <2.0m

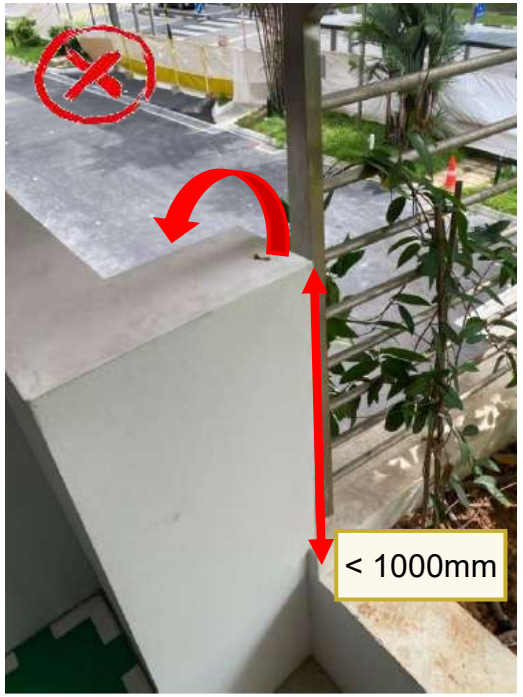
Window opens into circulation path <2.0m

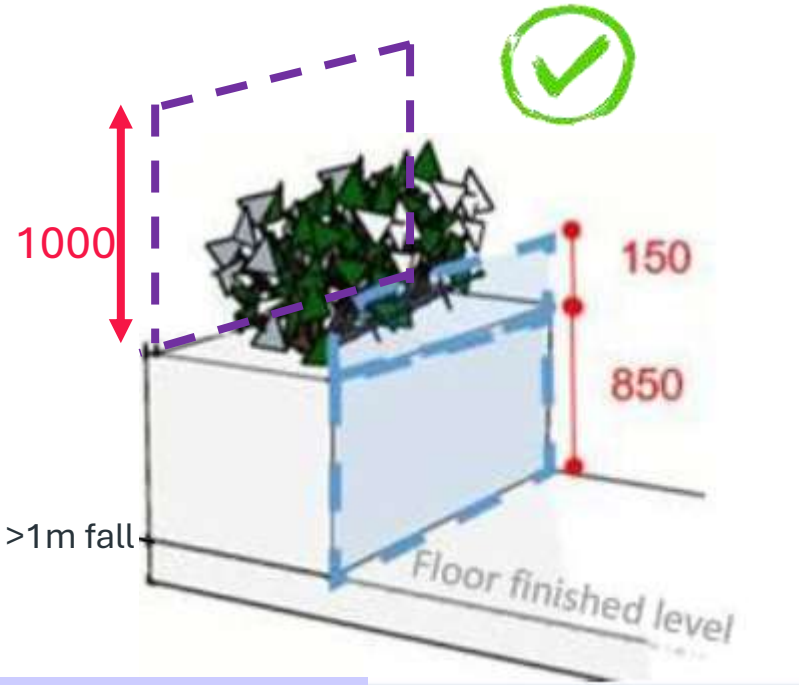
2m clearance from underside of sprinkler head

SAFETY FROM FALLING

AD SECTION H - CLAUSE H.3.2.1 AND H.3.4A.1

A barrier must have a height no less than the height specified in paragraph H.3.2.1 or 850mm when measured from the last climbable toehold





Surface with gradient gentler than 45deg and is at least 150mm (L) x 150mm(W) is considered a foothold

SAFETY FROM FALLING

AD SECTION H - CLAUSE H.3.4.1, 3.4.3a

H.3.4.1 There must not be any gap, from the finished floor level to a height no less than 75 mm, at the lowest part of a barrier. H.3.4.3a. The size of any opening or gap in a barrier must not be large enough as to permit the passage of – in the case of non-industrial buildings, a 100 mm diameter sphere

<75mm

>75mm gap provided

>100mm

STAIRCASE

AD SECTION E - CLAUSE E.3.4.4 and COA 4.11.2

AD E.3.4.4 The risers and treads within each flight of stairs shall be of uniform height and size
COA 4.11.2 All steps must be fitted with non-slip nosing strips between 50 mm and 65 mm in width with permanent contrasting colours.

Non-uniform tread and riser

Contrasting colour not provided.

Contrasting colour not provided.

Tape is not an acceptable solution

ACCESSIBLE WASHROOMS, DOORWAYS AND RAMPS

COA CLAUSE **4.1.1.1**, **4.5.2**, **5.2.1**

Other common NC

Gratings and gaps along accessible route >12mm

Coloured bands to be provided at vertical rise

Common findings for accessible washrooms:

- Missing items such as hooks, mirror, bidet spray, call bell, etc.
- Missing horizontal bar on door
- No min. 300mm space on push side for door due to basin obstruction

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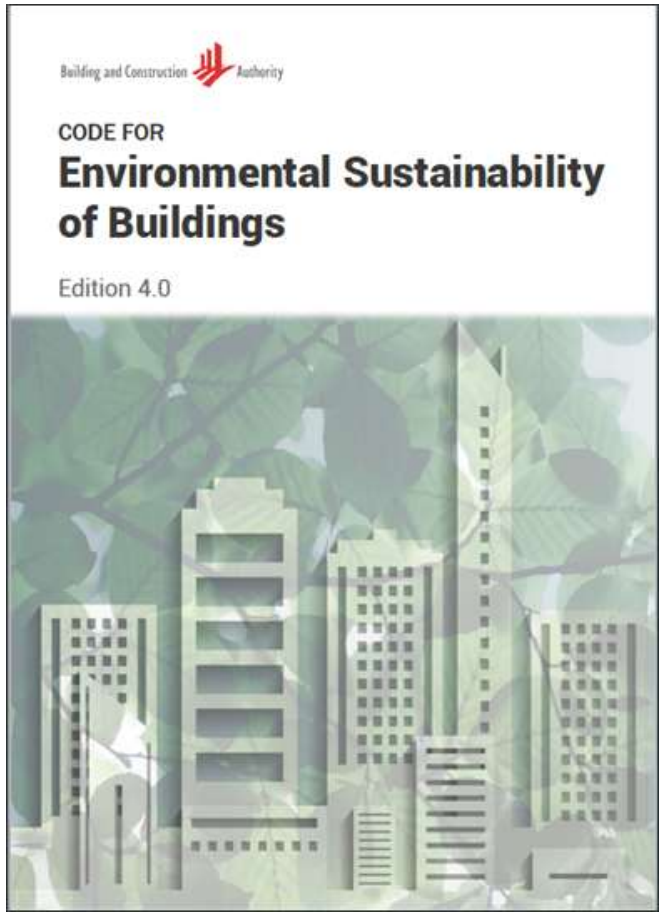
COMMON FINDINGS FROM ENVIRONMENTAL SUSTAINABILITY SUBMISSIONS FOR TOP

Common TOP Findings Observed in 2025

Building Control (Environmental Sustainability) Regulations 2008



Requirement	Description under ES Code 4th edition
NRB02-2	Building entrances and door openings to building exterior or non-airconditioned spaces and the like shall (a) be provided with doors that are equipped with automated technology or self-closing devices; and (b) be equipped with enclosed vestibules or other appropriate measures for the doorway with high pedestrian traffic flow
NRB06-1	Clearance of 1.5 m or more above the chiller to facilitate maintenance, overhaul or replacement.
NRB06-4(a)	Air handling units (AHUs) of cooling capacity greater than 35 kW shall be floor mounted as stipulated in SS 553.

NRB02-2 Openings between Conditioned and Non-Conditioned Spaces

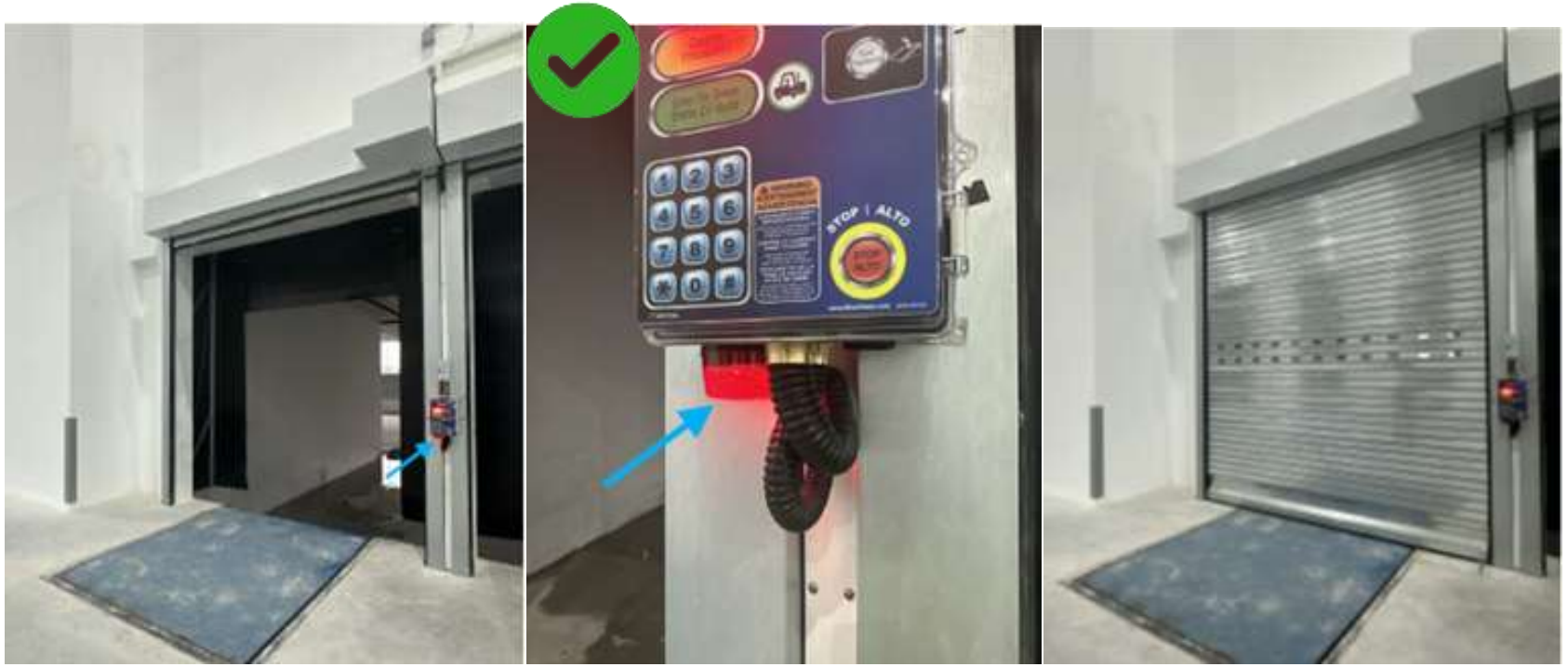
(a) Building entrances and door openings to building exterior or non-air-conditioned spaces and the like, shall be provided with doors that are equipped with automated technology or self-closing devices.

Common Finding

Roller shutters were observed to remain open while the air-conditioning is operating.

Acceptable Solution

Implement notification system (e.g. audible alarms / warning lights) as reminder to close shutters after use to prevent air leakage



Light is on (center) when the roller shutter is opened (left) and off when closed (right).

NRB02-2 Openings between Conditioned and Non-Conditioned Spaces

(b) Building entrances and door openings to building exterior or non-airconditioned spaces and the like, shall be equipped with enclosed vestibules or other appropriate measures for the doorway with high pedestrian traffic flow.

**Doorway with high pedestrian traffic flow refers to main entrances and those leading to transport nodes or other commercial buildings*

Common Finding

No provision of enclosed vestibules for doorways to transport nodes and commercial buildings

Acceptable Solution

Project team should design for enclosed vestibules. The project team should only attempt to adopt these other appropriate measures when they can provide a clear explanation and strong justification demonstrating that a vestibule is not feasible for their project:

- Use of highly efficient air-curtain system with its performance tested in accordance with ANSI/AMCA Standard 220 to ensure a minimum of 2.0 m/s airstream velocity at the floor; or
- Temperature stratification concept with justification along with appropriate placement of diffusers.

NRB06 Maintenance of Building Cooling System Performance

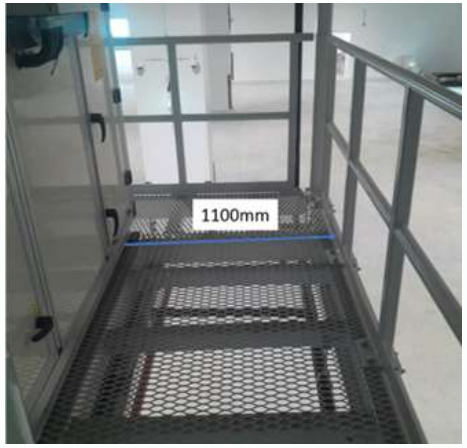
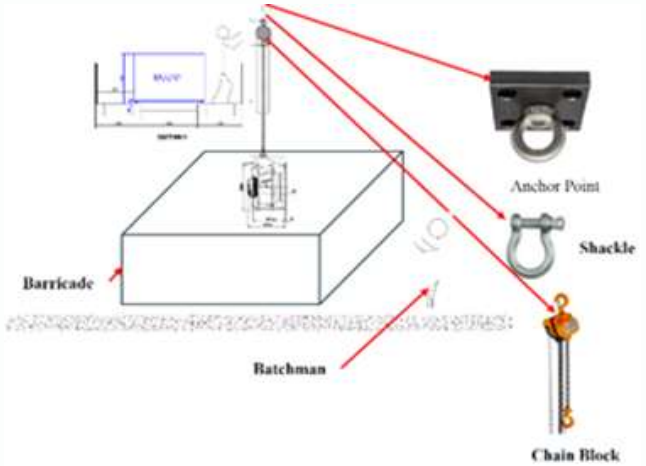
Clearance of 1.5 m or more above the chiller to facilitate maintenance, overhaul or replacement.

Common Finding	After Rectification
 	
▲ Clearance height observed to be less than 1.5m during site inspection	▲ Clearance height of more than 1.5m above chiller upon rectification

NRB06 Maintenance of Building Cooling System Performance

Air handling units (AHUs) of cooling capacity greater than 35 kW shall be floor mounted as stipulated in SS 553.

- AHUs are deemed as floor mounted if they sit on platform with clear path to a floor that is accessible by lift or staircase, to the building exterior. The project team shall obtain all necessary clearances from relevant agencies, including SCDF.
- The project team shall also provide non-labour intensive means to transport AHU fan/motor out of the building for maintenance.

Common Finding	Acceptable Solution
 AHU not floor mounted	 AHU maintenance platform was installed upon rectification.
	  Lifting points provided to allow chain blocks to be used to transport AHU fan/motor

NRB06 Maintenance of Building Cooling System Performance

NRB06-1 Chillers

(a) Front clearance: Minimum 2m for tube maintenance and component replacement.

(b) Side clearance: Minimum 1.2m between chillers for regular maintenance.

(c) Overhead clearance: Minimum 1.5m above chiller for overhaul work.

NRB06-2 Pump Systems

(a) Perimeter clearance: Minimum 0.6m around pump (except pipe connections) for regular maintenance.

(b) Overhead clearance: Minimum 1m above pump and motor for overhaul or replacement.

NRB06-3 Cooling Towers

(a) Access: Min 600mm wide platforms, stairs and catwalks with handrails for maintenance and with access to the level for periodic maintenance, inspection of water basin and fill media.

(b) Overhead: Min 2m clearance from cooling tower top to trellis (where applicable).

NRB06-4 Air-Distribution Systems

(a) Mounting: AHUs >35kW must be floor mounted per SS 553.

(b) Access clearances:

- General access: Min 1.0m from room door to AHU
- Coil/filter access: Min 800mm after pipe connections
- Fan access: Min 800mm for fan/motor maintenance
- Side/back clearance: Min 600mm for general access

Please refer to the FAQ on BC(Environmental Sustainability) for clarifications and details on acceptable solutions to comply with the requirements:

https://go.gov.sg/bca-esfaq

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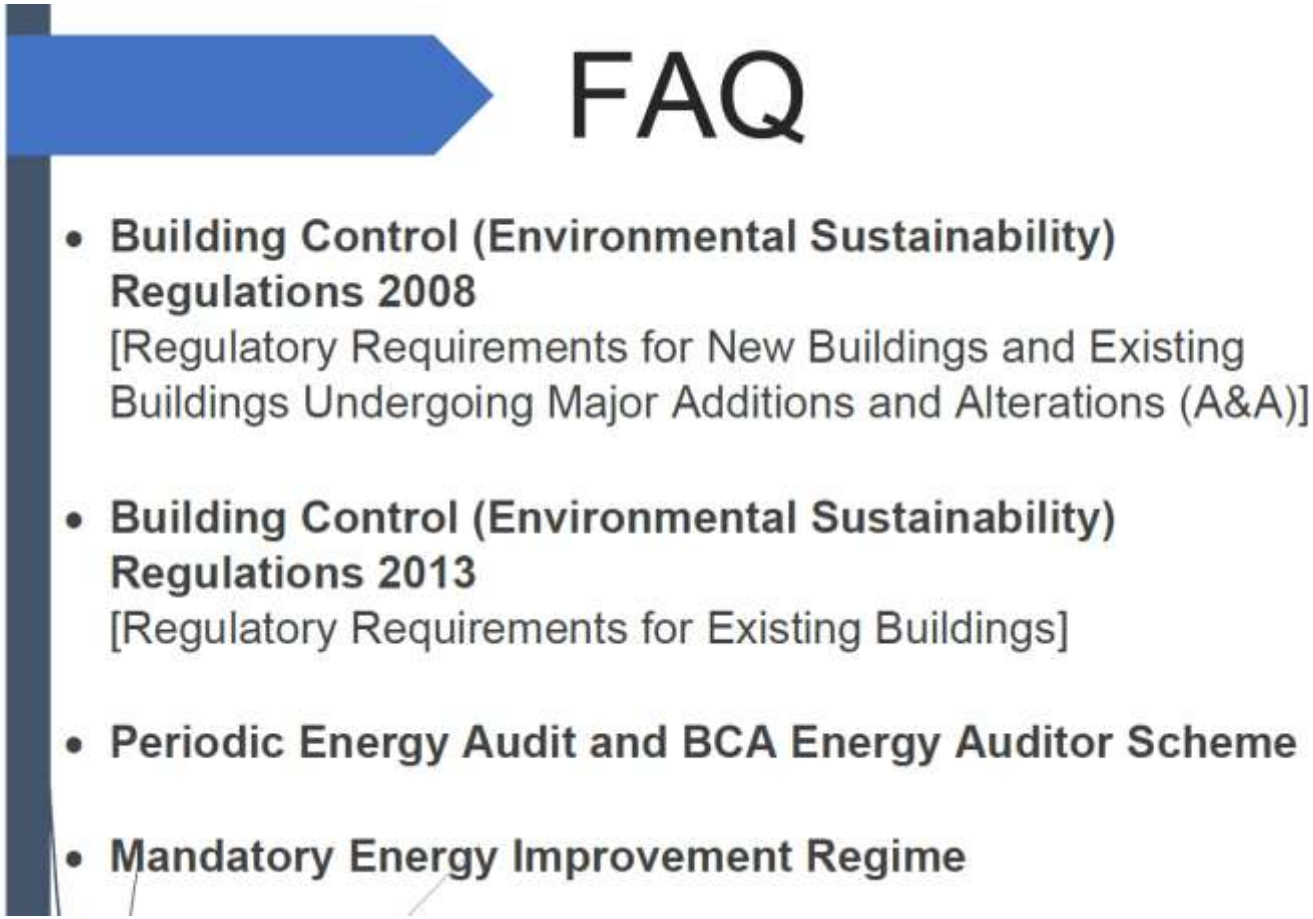

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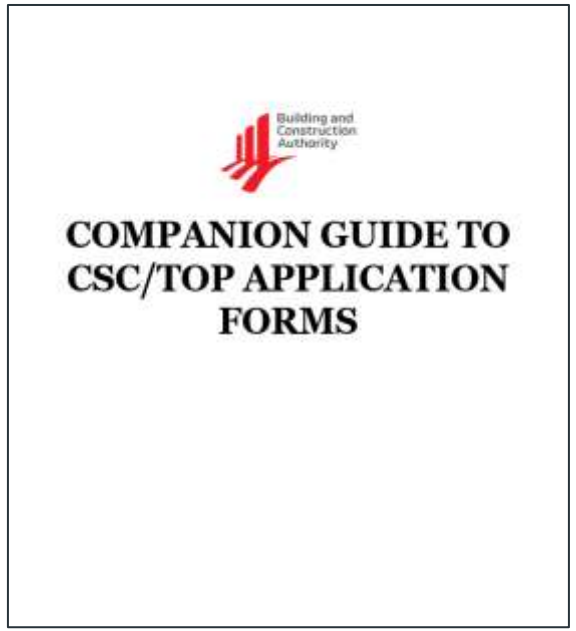
COMPANION GUIDE FOR BCA TOP/CSC SUBMISSIONS

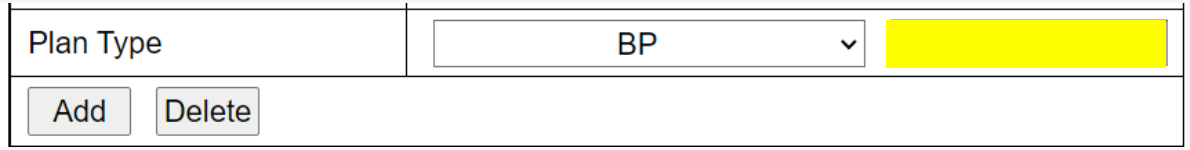
Companion Guide for CSC/TOP Submissions

- Poor quality applications (E.g., Data errors or incomplete information) often results in multiple written directions (WD) and exchanges between QPs and BCA
- Companion Guide aims to highlight the common errors and provide guidance to achieve better submissions.
- Better quality submissions will be a Win-Win; smoother and shorter approval timelines.



KEY FIELDS TO NOTE IN FORM

Certificate of Supervision for Building Works (BCA-CSC-CSPBW)

Key Field To Note	Sections of the form
Building Plan Numbers • Add all your approved Building Plan numbers using the 'ADD' button	

Ensure the following

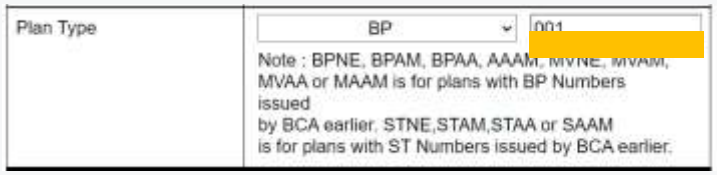
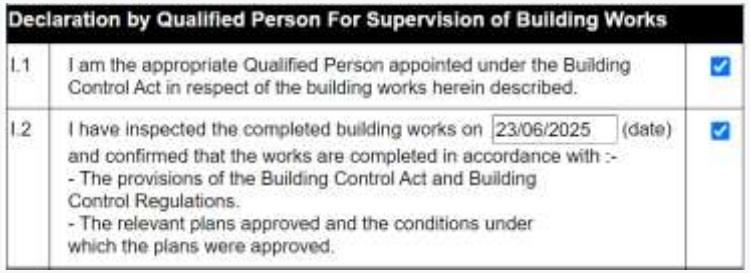
- ☐ All approved BP numbers added
- ☐ Permit date filled in
- ☐ Dates are in correct sequence
- ☐ SGFA and building cost included

Common Mistakes

- ☐ Not filling in all approved BP number
- ☐ Filling in disapproved BP number
- ☐ Permit date not filled

KEY FIELDS TO NOTE IN FORM

Declaration by Qualified Person for the Application of CSC/TOP for Building (BCA-CSC-TOPCSCDQP)

Key Fields To Note	Sections of the form
Plan Type Plan type refers to the **BP Main Approved Plan** number	💡 Use your first approved BP number 
Inspection dates - getting the timing right	💡 The date should be within 3 months before the date of application 

Ensure the following

- ☐ Plan type should be first approved plan.
- ☐ Date of inspection should be within 3 months
- ☐ Fill in latest Approved BP/RP Plan number.

Common Mistakes

- ☐ Plan type is not first approved plan
- ☐ Date of inspection is more than 3 months ago

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SMART INITIATIVES FOR TOP/CSC INSPECTION

Virtual TOP Inspection

- Virtual TOP Inspection transforms the way TOP inspections can be conducted by using virtual reality technology to create digital twins for remote assessments.

- Since its implementation in 2024, more than 100 projects have successfully obtained their TOP with the use of virtual scans. Early adopters have shared that they had achieved up to 60% productivity gains from their virtual TOP inspections

- Virtual inspections can help minimise bottlenecks and late-stage rectifications at the TOP stage. In addition, the virtual inspection process enhances collaboration across the project stakeholders and strengthens accountability with digital records.

- As adoption grows, we like to share some pointers on how project teams can optimise their capturing process for better outcomes.

Project Team conducts the virtual scans (360 Capture)

Project Team/BCA officers reviewing the 360 scans

Common Virtual Inspection Mistakes

Frequently observed issues during virtual inspections include:

Obstruction in confined spaces
- Consider extending the camera into tight spaces instead of going in.

Insufficient lighting affecting image quality
- Conduct 360 Capture during daylight hours or provide supplementary lighting to ensure adequate illumination.

Common Virtual Inspection Mistakes

Frequently observed issues during virtual inspections include:

Incomplete coverage

- Remember to cover critical areas such as stairwells and maintenance areas

Risers omitted from scan

- Ensure the internal areas of risers are captured.

Guidebook on Virtual Inspection

The Guidebook help guide on the different processes in a virtual inspection for TOP/CSC to help answer the key questions that the industry have.

Pre-consultation between project team and BCA officers

Capturing (by project team)

Inspection (by BCA officer)

SMART INSPECTION SEMINAR

SMARTER CONSTRUCTION INSPECTIONS: BEYOND REGULATORY COMPLIANCE

For GPEs, Developers, QPs,
Builders & Solution Providers

🗓️ 29 May 2026 9am to 3pm
📍 BCA Academy

WHAT TO EXPECT:

Seminar, 9am to 12noon:

- ✓ Update on BCA Smart Inspection Initiatives
- ✓ Benefits of virtualisation

MASTERCLASSES, 1pm to 3pm:

- ✓ Tech expert will share hands-on technology insights
- ✓ Focused sharing session

Scan the QR Code to register now

RECENT CIRCULARS AND REMINDERS

Circular Ref. BCA BC-2025-01: Formalisation and Publication of Technical Agencies Services Standards for TOP/CSC Inspection Arrangements and Post Inspection Response Time

a. Publication of Agencies' Service Standards for TOP/CSC to provide industry with greater certainty to plan around timeline and milestones leading up to TOP/CSC issuance

b. Provides service standards on agencies response time for:
   - Duration between inspection confirmation and actual inspection
   - Post inspection response time

c. Effective from 1 Dec 2025

Agency	Process	Service Standards (Working Days)	
		A. Duration between Inspection Confirmation & Actual Inspection	B. Post-Inspection Response Time
LTA URA	CSC TOP/CSC	20 for entire TOP/CSC application process including inspections	
NParks	CSC	7	7
SCDF	TFP/FSC		
PUB	TOP/CSC	14	
BCA	TOP/CSC		
NEA	TOP/CSC		

Building and Construction Authority

Thank You

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