

BCA INDUSTRY SHARING SESSION ON BP/TOP PRACTICES AND REGULATORY UPDATES

09 MAY 2023



Regulatory Updates on Building Plan Requirements

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Building Plan and Advertisement Licensing Department
Building Plan and Management Group



Topics

- 1 Approved Document Updates
- 2 Recap of Recent Circulars
- 3 Good Practice Guideline for Maintainability of AC Ledges
- 4 Good Practice on Use of Glass
- 5 General Observation of Common BP Non-Compliances



1. Approved Document Updates



Approved Document Updates

2 Circulars issued on

➤ 1 Dec 2022

➤ 1 Mar 2023

2 circulars issued to inform the industry on **updates to the Approved Document**.

The updates comprise mostly editorial changes, which are meant to improve clarity.

Update to the Approved Documents (1 Dec 2022) will apply to all projects submitted to Commissioner of Building Control (CBC) for approval on or after 1 June 2023.

The subsequent **Update to Approved Documents (1 Mar 2023)** to be read in conjunction with the BCA circular on **STANDARDISED DESIGNS FOR REPLACEMENT AND REINSTATEMENT OF SAFETY BARRIERS INTEGRATED WITH $\frac{3}{4}$ HEIGHT AND FULL HEIGHT WINDOWS IN EXISTING RESIDENTIAL BUILDINGS** issued on 1 Dec 2022. These changes will take effect on or after 1 March 2023.

Building and Construction Authority



1 Dec 2022

An MND Statutory Board

Our ref : APPBCA-2022-24
01 Dec 2022

See Distribution List

Dear Sir/Madam

UPDATES TO THE APPROVED DOCUMENT (1 DECEMBER 2022)

This circular is to inform the industry on the update of the Approved Document on 1 December 2022.

Building and Construction Authority



1 Mar 2023

An MND Statutory Board

Our ref : APPBCA-2023-04
01 Mar 2023

See Distribution List

Dear Sir/Madam

UPDATES TO THE APPROVED DOCUMENT (1 MARCH 2023)

This circular is to inform the industry on the update to the Approved Document with reference to BCA circular ref: APPBCA-2022-25 issued on 1 December 2022.

Amendments to Approved Documents

	Approved Document V7.03		Approved Document V7.03
B.3.3 B.3.7	Structural Design (Editorial charges) • Cl B.3.3.1(c)(iv) & (v) • Cl B.3.3.1(o)(i) • Cl B.3.3.1(p)(i) • Cl B.3.7.1(m)(ii)	E.3.7	Staircase Nosing (Clarification) • <u>Not required</u> for dwelling units including landed houses. • <u>Required</u> for common property such as corridors, lift lobbies within residential developments.
Annex A	SS EN 1992-4 Design of Concrete Structures (Editorial charges) Design of Concrete structures Design of fastenings for use in concrete <u>NA to SS EN 1992-4</u>	G.2.4	Mechanical ventilation (Clarification) May be provided to: i. Any fitness room <u>forming part of the communal area or common property.</u>
E.3.3	Width of Staircase • Cl E.3.3.1 – <u>≥ 1000mm clear wide</u> • Harmonisation of BCA & SCDF handrail requirements	K.3.1 K.3.2 K.3.3	Lifts and Escalators (Editorial charges) • Lifts & Escalators • Vertical Platform Lifts and Stairlifts • Home Lifts
E.3.5	Landing • Cl.3.5.3 – <u>≥ 1000mm clear wide</u>	P.3.2	Daylight Reflectance (Editorial changes) • Cl P.3.2.b – any material, or other than glass <u>and paint on plastered or concrete surfaces</u>, for the building work on -



E.3.3.1 Width of Staircase

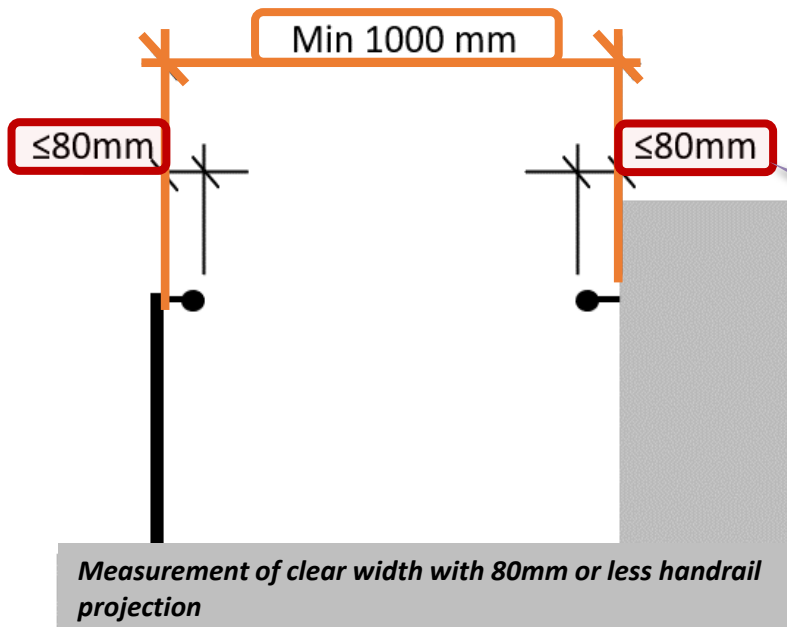
E.3.3 Width of staircase

E.3.3.1 The clearance of the width of every staircase shall not be less than 1000mm.

If the projection of the handrail:

does not exceed 80mm, the width is measured from:

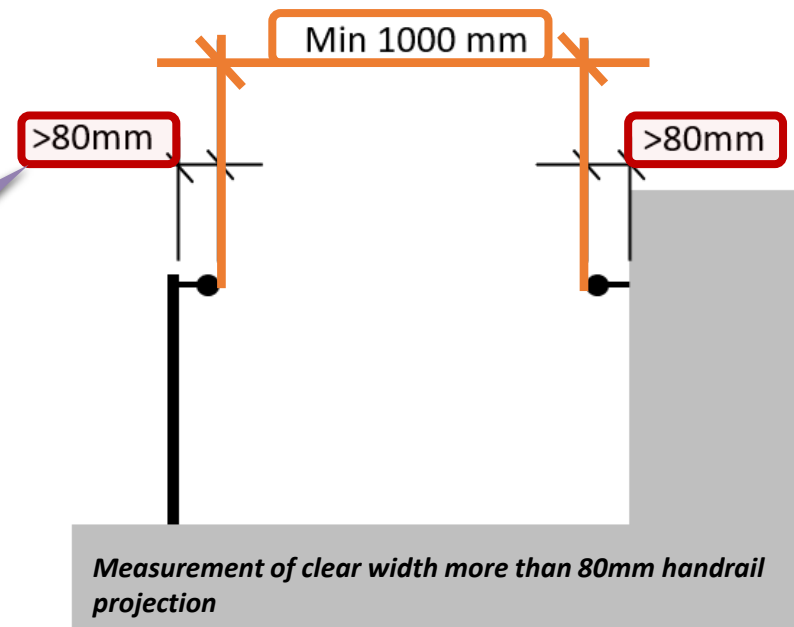
- The finished surfaces of the walls, if both sides are walls.
- The finished surface of the wall and the inner side of the balustrade, if one side is wall and another side is balustrade.
- The inner sides of the balustrades, if both sides are balustrades.



If the projection of the handrail:

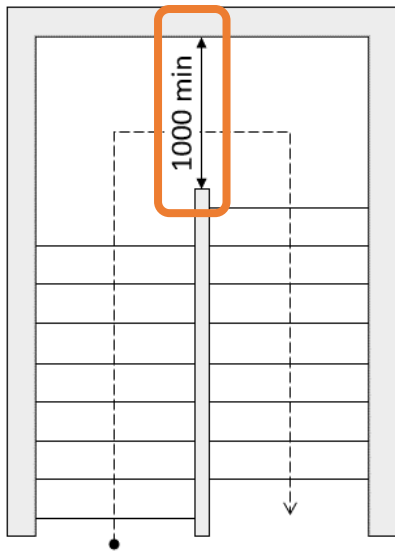
exceed 80mm, the width is measured from:

- The finished surface of the wall and the inner side of the handrail, if one side is wall and another side is handrail.
- The inner sides of the handrails, if both sides are handrails.

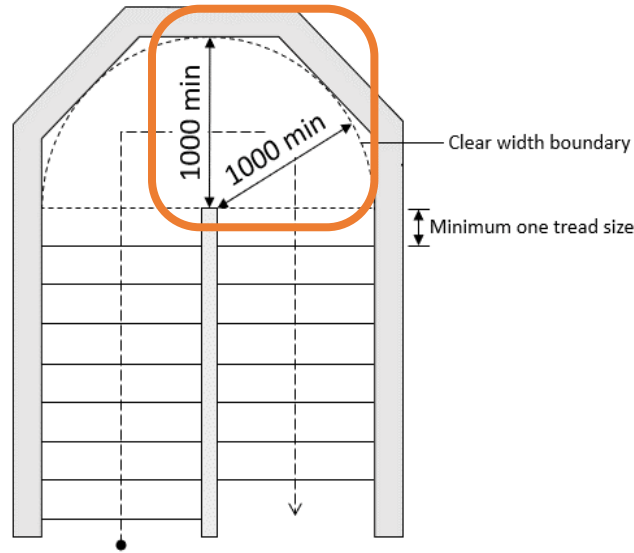


E.3.5 Landing

E.3.5.3 The clearance width of any landing shall not be less than 1000mm.



Measurement of landing width

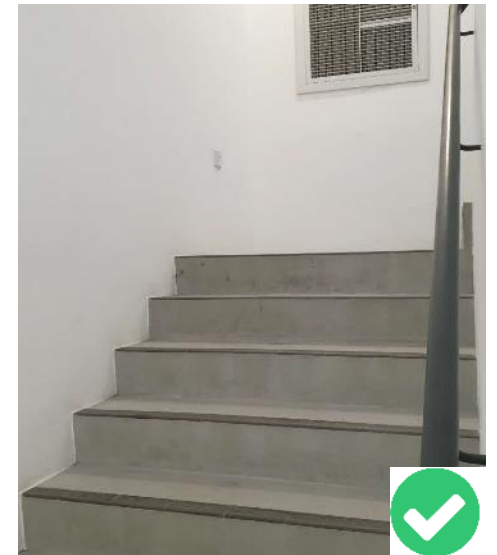


Measurement of the width of an irregular landing

E.3.7 Stair Nosing

Stair nosing is not mandatory to dwelling units including landed houses.

Stair nosing applies to common property such as staircases leading to corridors, lift lobbies etc. **within residential developments.**



Stair nosing required for common property within residential developments (i.e. common staircases)

G.2.4 Mechanical ventilation may be provided to any of the following rooms or spaces in any residential development:

- (i) any fitness room **forming part of the communal area of common property**;
- (ii) any clubhouse;
- (iii) any civil defence shelter;
- (iv) any toilet, bathroom or lavatory;
- (v) any basement.



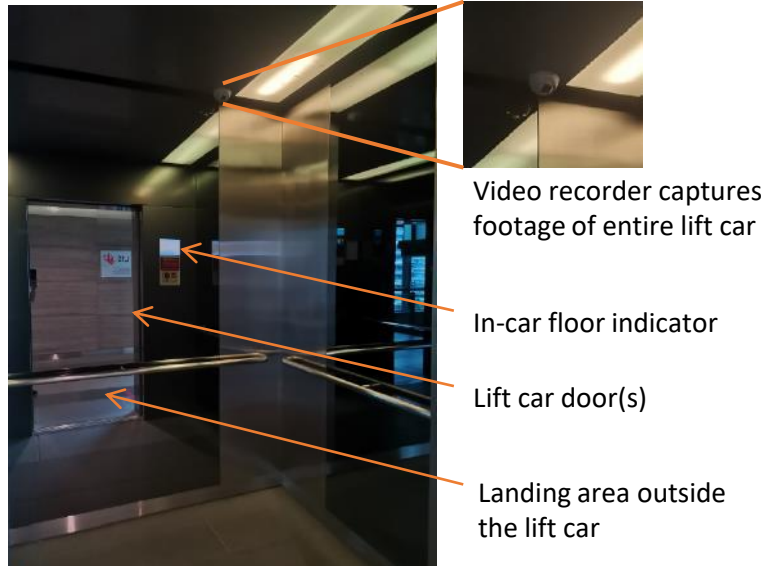
Fitness room forming part of the communal area of common property

K.3.1.a & K.3.2 Lifts and Home Lifts

Editorial
Changes

K.3.1 (a) The lifts are designed and installed:

- (ii) with light curtain installed at the lift door as a door protective device that shall automatically initiate re-opening of the door(s) in the event of a person crossing the entrance during the closing movement, and that the light curtain shall have its nudging mode de-activated if nudging mode is provided; and:
- (iii) **provided** with a video recorder that has the following minimum specifications –
 - a. Capacity to record 24 hours a day, 7 days a week;
 - b. Capture **footage of** the **entire** lift car, **including** in-car floor indicator, **lift car door(s)** and **landing area outside the lift car in front of the lift doors;**



** Similar changes to Escalators (K.3.1.b) and Vertical Platform Lifts/Stairlifts (K.3.2)*

K.3.3 The requirements in paragraph K2.1 are deemed to be satisfied if home lifts are designed **and** installed in accordance with the requirements of –

(c) with a telephone, intercom system or any other communication device that enables notification or direct communication with personnel who can initiate an emergency response.

For the purposes of this part:

“home lift” means a lift, excluding a stairlift or a vertical platform lift not being common property, installed in a **private home solely for the use of its occupants.**

P.3.2 The material used for the building work is deemed acceptable if –

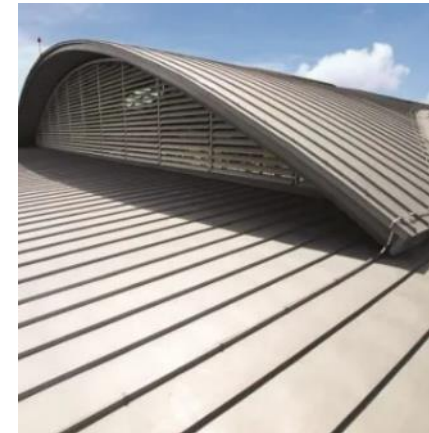
- a) The **glass** for the building work has a daylight reflectance not exceeding 20%
- b) Any material, other than glass **and paint on plastered or concrete surfaces**, for the building work on –
 - (i) the façade of the building has a specular reflectance not exceeding 10%
 - (ii) the roof of the building, inclined at an angle not exceeding 20 degrees from the horizontal plane, has a specular reflectance not exceeding 10%
 - (iii) the roof of the building, inclined at an angle more than 20 degrees from the horizontal plane, has a daylight reflectance not exceeding 20% and a specular reflectance not exceeding 10%
- c) **Emulsion paint** on plastered or concrete surfaces has a specular reflectance not exceeding 10%



Metal sheet used as both roofing and wall façade



Aluminum façade cladding



Metal roofing



Perforated panels as façade cladding

Amendments to Approved Documents

Approved Document V7.04

H.3.1A

Safety From Falling

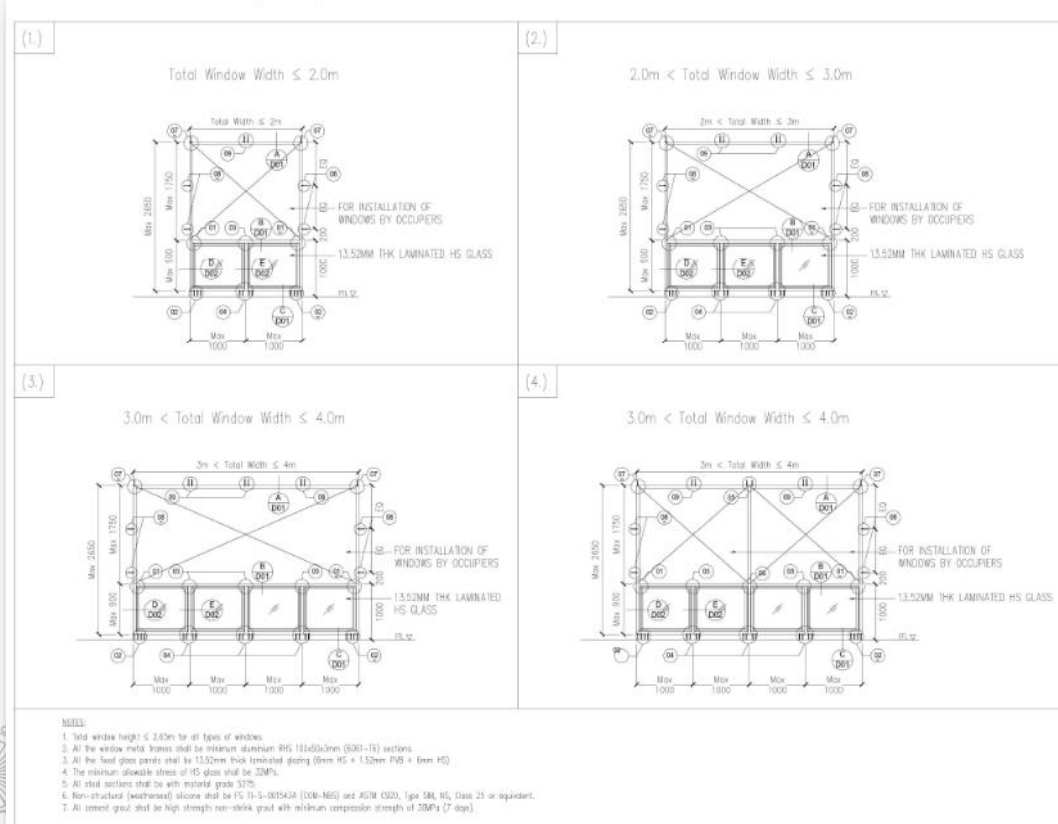
- Safety barrier integrated with windows at existing residential buildings.
- Standardised design set out in Annex C in Approved Document.

BCA has developed a set of Standardised Designs for replacement and reinstatement of safety barriers integrated with $\frac{3}{4}$ height and full height windows in existing residential buildings.

Adopting Standardised Design will save cost and time as **building owners or homeowners** do not need to engage the service of a **Professional Engineer (PE)** to act as a **Qualified Person (QP)** to design the replacement or reinstatement works or obtain the plan approval and permit.

To ensure replacement or reinstatement of safety barriers remain safe, replacement or reinstatement works must be carried out by **licensed Builders or Approved Window Contractor (AWCs)** with **Trained Window Installers (TWIs)** who completed the course “Module on replacement and reinstatement of safety barriers integrated with windows”.

FULL HEIGHT WINDOW SCHEDULE (CASE 1-4)



* Effective on or after 1 March 2023

2. Recap of Recent Circulars



1. Qualified Persons (QPs) are taking longer time to respond to Technical Agencies' Written Directions (WDs).

- a) QPs fail to comply with deadlines stipulated in the WDs:
- The technical agencies may disapprove the QPs' application(s) or deem **QPs' application as withdrawn**.
 - QPs will need to **re-submit a fresh application**.

2. Implementation of Validity Period for Written Direction.

- a) Currently, **BCA & SCDF** generally provide periods of up to sixty (60) working days to comply with WDs.
- b) **URA** validity period for WDs is tied to the **validity period** of the parent **Provisional Permission (PP)** of 6 months unless further extension is supported.

BCA	Building Plan - 40 working days for 1 st WD, 20 working days for 2 nd WD. Structural Plan – 14 calendar days for 1 st and 2 nd WDs.
SCDF	60 working days for QP's clarifications to plan approvals, waivers and fire engineering design brief.

- c) With effect on or after 1 Jan 2023, NEA, NParks, LTA and PUB WD will have validity period of sixty (60) working days.
- QPs **must respond to written directions** within this validity period of **sixty (60) working days**.
 - Applicable for **all application types and first plan applications** (Refer to Annex A).

Annex A – Application Types and First Plan Applications to Agencies.

	Application Types	First Plan Application
LTA	DC, BP, Engineering Works and CSC	First DC application
NEA	DC, BP, TOP, CSC, Noise Assessment (NA) and Waiver applications	
PUB	DC, BP, TOP and CSC	
NParks	DC, BP (where applicable) and CSC (where applicable)	

3. Implementation of allowable time frame between BCA Temporary Occupation Permit (TOP) and obtaining of Certificate of Statutory Completion (CSC).

With projects TOP or PUB's Clearance Certificate issued **on or after 1 Jan 2023**, the **Developer** must ensure that, where applicable:

- a) The **CSC clearances** from URA, NParks, LTA, NEA, BCA and Fire Safety Certificate (FSC) from SCDF are obtained **within two (2) years from date of TOP** issued by CBC.
- b) The **Compliance Certificate for Drainage and/or the compliance certificate for Sanitary/ Sewerage** are obtained from PUB **within two (2) years from the respective PUB's clearance certificates.**
- c) If **TOP** was issued in stages, **two (2) years shall commence from the date of the latest TOP** issued by CBC.
- d) If QPs are **unable** to comply with the timelines above, QP to provide:
 - (i) a list of **regulatory requirements not complied with for obtaining CSC** and
 - (ii) a **schedule of timelines(s) to comply with each outstanding regulatory** for CSC application.

Objective:

- A set of guidelines on Computational Fluid Dynamics (CFD) simulation and report to be submitted to Commissioner of Building Control (CBC) for adoption of jet fans as an Alternative Solution for MV Carpark.

Guidelines:

- Guidelines on the CFD simulation and report on the adoption of jet fans are detailed in Annex A.
- Appointed PE(Mech) should:
 - Assess the suitability of the adoption of guidelines for the CFD simulation to guide their design of jet fan systems.
 - Provide design details and expected operating conditions that may require **more stringent** assumptions in CFD simulations.
 - Provide sufficient justification, if there is **any deviation** from the recommended guidelines.
 - Exercise their duties and due diligence under section 9(3) of Building Control Act 1989, to ensure the jet fan system satisfies the objectives and performance **before issuing the Certification of Supervision**.

Effective Date:

- Recommended that the guidelines in Annex A to be adopted with immediate effect when submitting the jet fan CFD simulation and report to CBC.



3. Good Practice Guideline for Maintainability of AC Ledges



URA Circular - Harmonisation of Floor Areas Issued on 01 Sept 2022

Under Appendix 2, URA's revised GFA definition, Clause 2:

- Ledges for equipment exclusive to a strata unit, such as AC ledges⁴ that are included in strata areas, will be computed as GFA.
- However, Developers who propose to retain AC ledges as common property will continue to exclude such AC ledges from GFA⁵.

Note 4: QPs must ensure that AC ledge designs continue to meet BCA's design for maintainability guidelines to ensure ease of maintenance [refer to Clause 3.1.2(a) and 3.1.2(b) under the Maintainability Section for Residential Buildings].

Note 5: Developers should consider design solutions at the building design stage to safeguard direct access to the common property AC ledges by the MCST for downstream access and maintenance.

Good Practice for Maintainability of AC Ledges

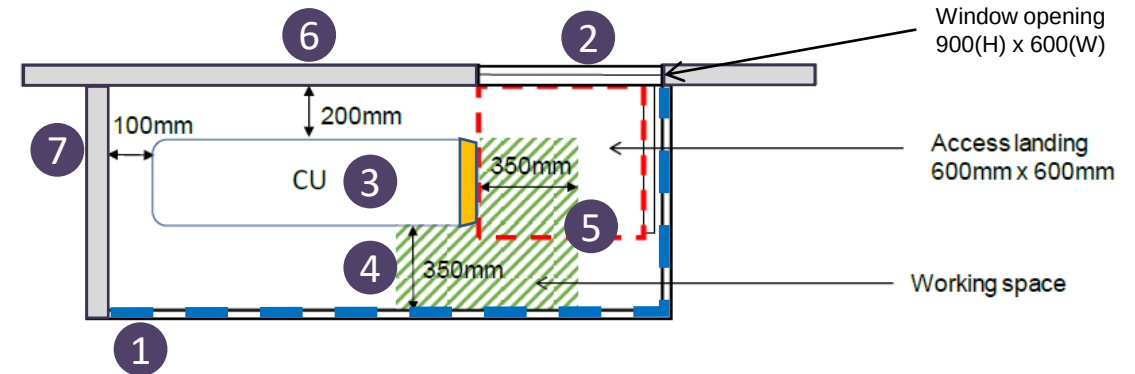
Maintainability Section for Residential Buildings

Under Clause 3.1.2, access space around the AC ledge for maintenance of condenser unit:

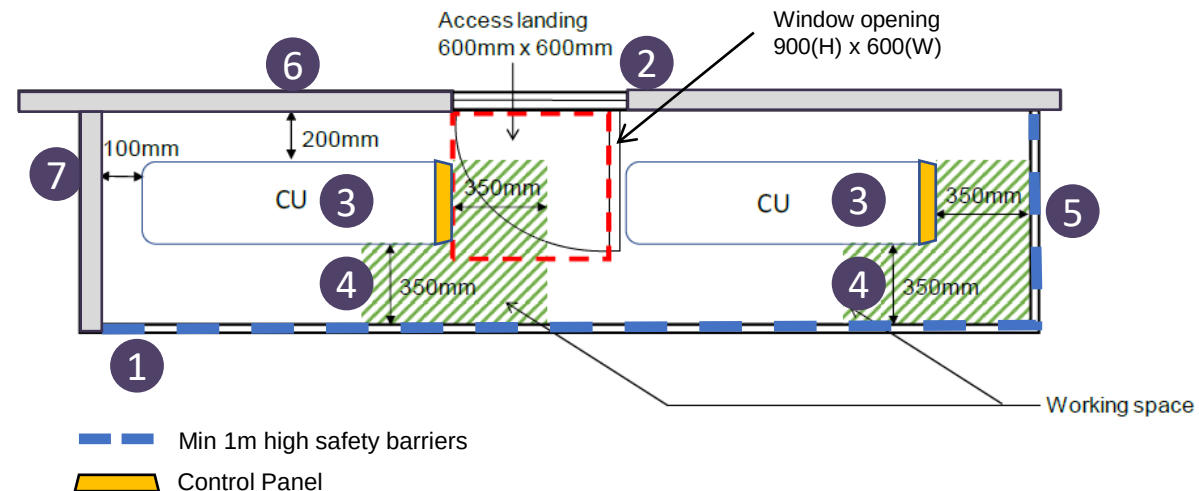
1. **Safety barrier** shall be **minimum height of 1m**.
2. Window opening of **900mm (H) x 600mm (W)** for AC maintenance and replacement.
3. The condenser units (**CU**) should not be stacked.
4. Min. clearance of **350mm** in front of CU.
5. Min. clearance of **350mm** at side of CU with Control Panel.
6. Min. clearance of **200mm** at the back of CU.
7. Min. clearance of **100mm** at side of CU without Control Panel.

* **Adequate working spaces** must be provided for service and maintenance.

AC ledge with 1 Condenser Unit



AC ledge with 2 or more Condenser Unit



4. Good Practice on Use of Glass



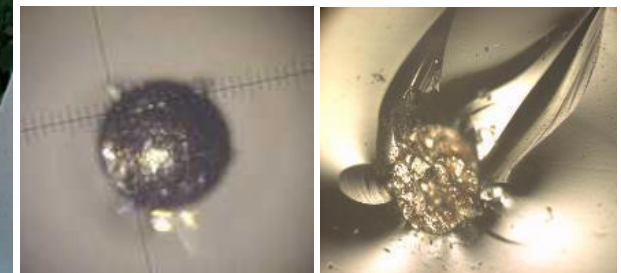
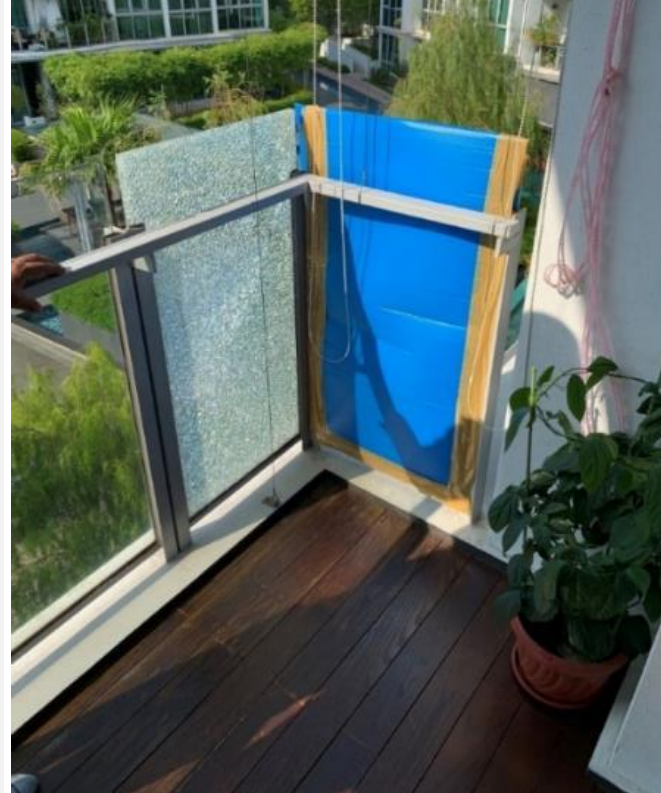
Good Practice on Use of Glass

Common Applications of Tempered Glass in Building Developments

- Used as whole or part of –
 - Safety barriers
 - Glass at height
- E.g. in *laminated glass* (monolithic tempered glass panel bonded to another glass panel with an interlayer)

Peculiarity of Tempered Glass

- Presence of *nickel sulphide* impurities during the tempered glass production process can lead to *spontaneous breakage*, when these impurities expand in volume over time under certain conditions



Nickel Sulphide (NiS)



Good Practice on Use of Glass



Heat Soaking

- Widely accepted **quality control** process to reject tempered glass panels with such impurities during production and hence significantly **reduce the residual risk** of spontaneous breakage

SS 653: 2020

Code of Practice for Glazing in Buildings – Safety Related to Human Impact

- Launched by Enterprise Singapore on 28 Jan 2021
- Guideline recommending the application of **heat soaking in accordance with EN 14179 to all monolithic tempered glass** used in buildings where glazing is subject to high risk of human impact (e.g. in safety barriers and shower screens)



Good Practice on Use of Glass

Current Requirements

- **Safety Barrier** : Laminated glass
- **Glass at Height** : Glass provided with screen or shield protection (laminated glass recommended)
- Type of glass used must be clearly **annotated on all building plans**
e.g. heat-soaked tempered laminated glass barrier (when tempered glass is opted to be used in safety barriers)

To raise tempered glass standards within industry, the following good practices are encouraged:

Recommended Practices for All Tempered Glass Used in Safety Barriers and at Height

For all building developments, where tempered glass is used as whole or part of safety barriers and at height

- **Heat soaking** in accordance with EN 14179 as recommended in SS 653 is encouraged
- Heat-soaked tempered **glass marking** can be applied in accordance with Clause 4.4 of SS 341

Recommended Tests that can be Conducted on Heat-Soaked Tempered Glass

Type Tests

- Fragmentation test, impact test & bending strength test in accordance with EN 14179-1, Clause 10 & 11

Calibration Test

- On heat-soak oven, in accordance with EN 14179-1, Annex A

Factory Production Control

- FPC audit in accordance with EN 14179-2



5. General Observation on Common BP Non-Compliances

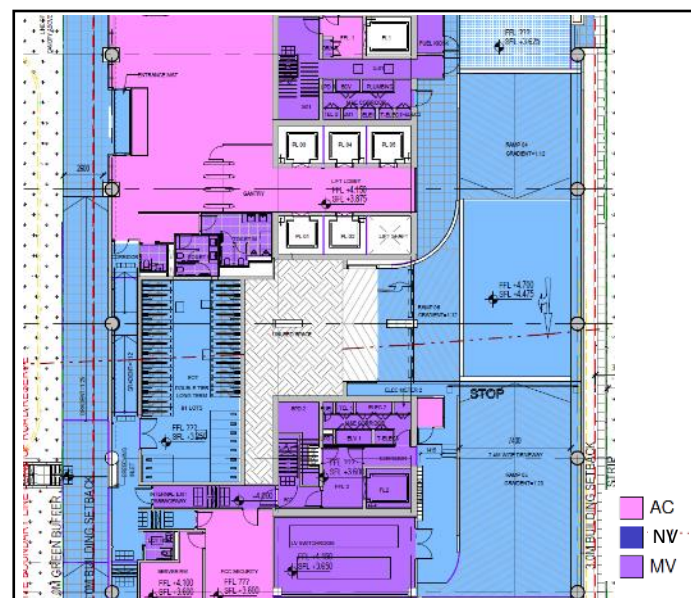


G.3.1.c Declaration on Mode of Ventilation on Plans

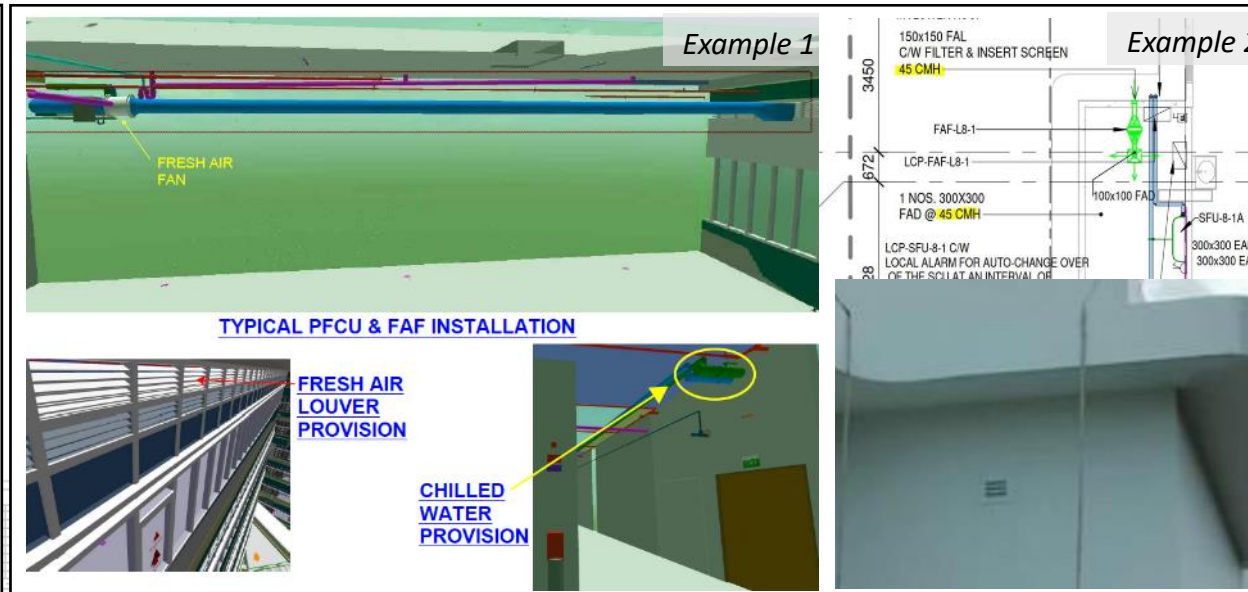
Ventilation shall be adequately provided to rooms/spaces to protect people from loss of amenity due to lack of fresh air.

Ventilation can be in the form of NV, MV or AC following the Acceptable Solutions in the Approved Document.

- ✓ QP should clearly declare if mode of ventilation is NV, MV or AC (not ACMV).
- ✓ Areas with mode of ventilation declared as **AC or MV** shall comply with **fresh air supply** requirements as specified in **SS553**.



BP plan showing mode of ventilation



Design of fresh air supply to AC system

This form may take you 5-8 minutes to complete.

THE BUILDING CONTROL ACT (CAP 29) CERTIFICATE OF SUPERVISION OF MECHANICAL VENTILATION/AIR-CONDITIONING SYSTEM(S)	
Commissioner of Building Control Building & Construction Authority 52 Jurong Gateway Road #11-01 Singapore 608550 Website: http://www.bca.gov.sg/	INSTRUCTIONS: (1) * Delete accordingly. (2) [] Please tick in the appropriate box. (3) This form is to be filled in BLACK INK only.

CSC05: Certificate of Supervision of ACMV systems

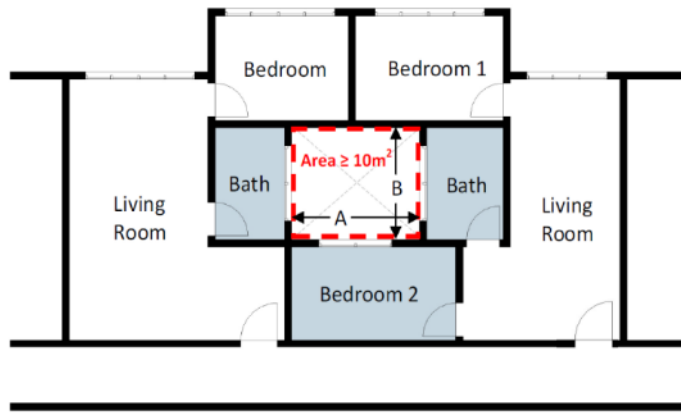
G.3.2.2 & G.3.2.3 Acceptable Solutions for Natural Ventilation

Consider following requirements relating to building design and layout early to avoid iteration with agencies

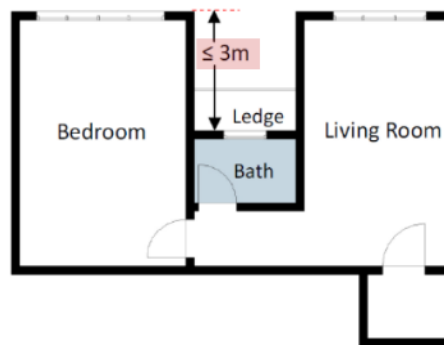


Section G - Acceptable Solutions in the Approved Documents (if performance-based solution is not adopted)

BP plan showing a airwell/void with min. width of 3m (applicable to both A & B) and min. area of 10sqm (up to a height of 30m)

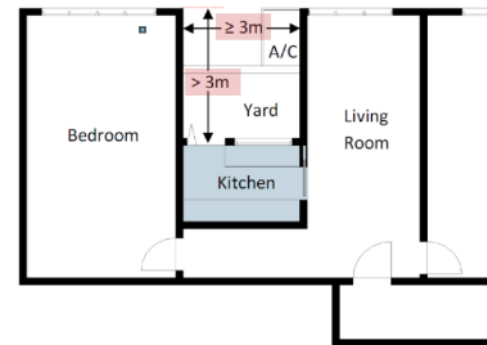


Example 1

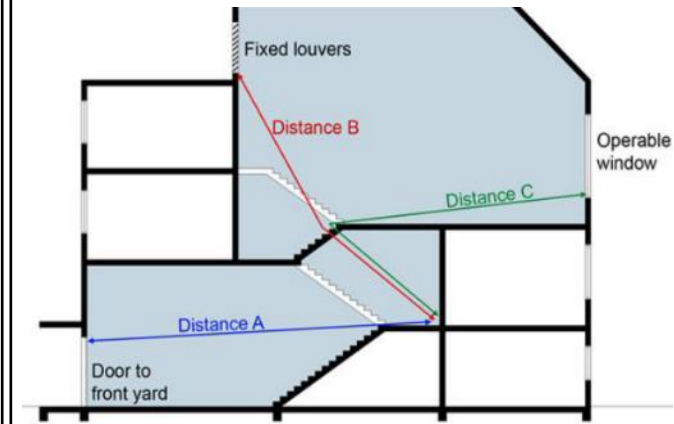


BP plan showing recess within 3m from external wall

Example 2



BP plan showing recess exceeding 3m from external wall, with min. 3m width



Section showing ways to measure the 12m rule for stairwell with NV

* Shared in BCA Industry Sharing Session on BP/TOP Practices and Regulatory updates last year

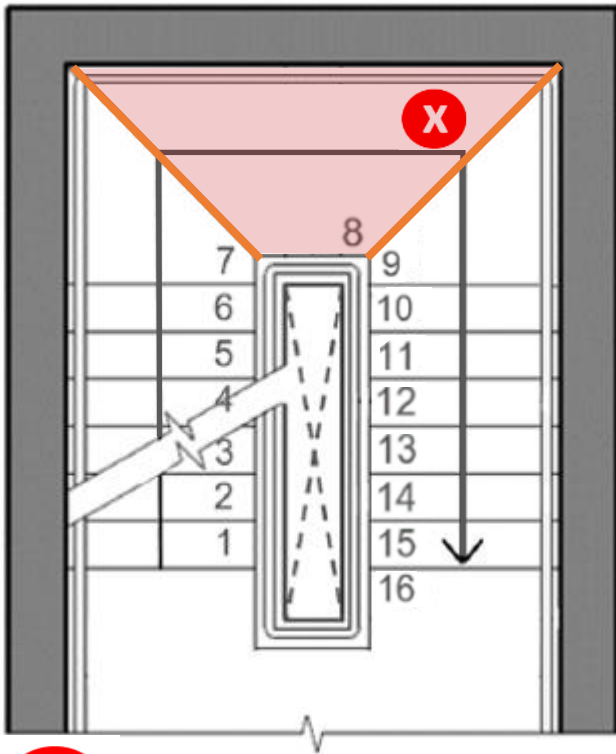


E.3.5.4 Back-to-Back Staircase Winders for Dwelling Units

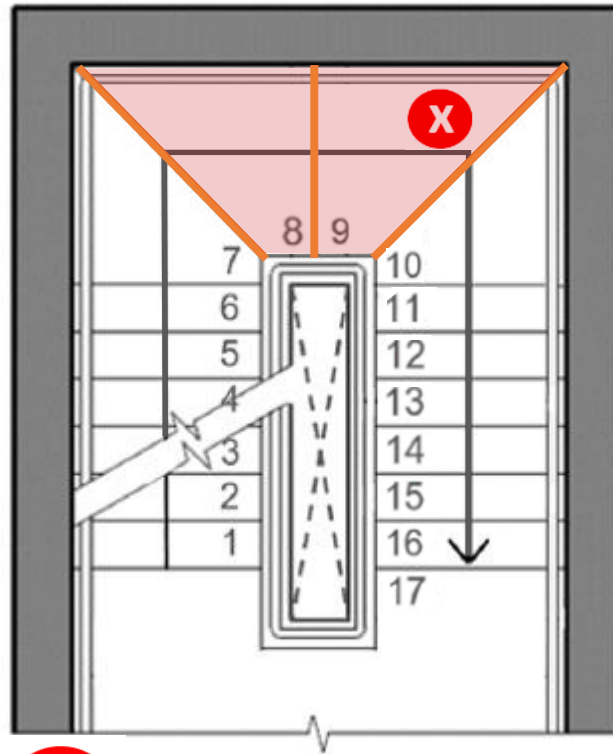
Section E - Acceptable Solutions in the Approved Documents

Clause E.3.5.4 in the Approved Document

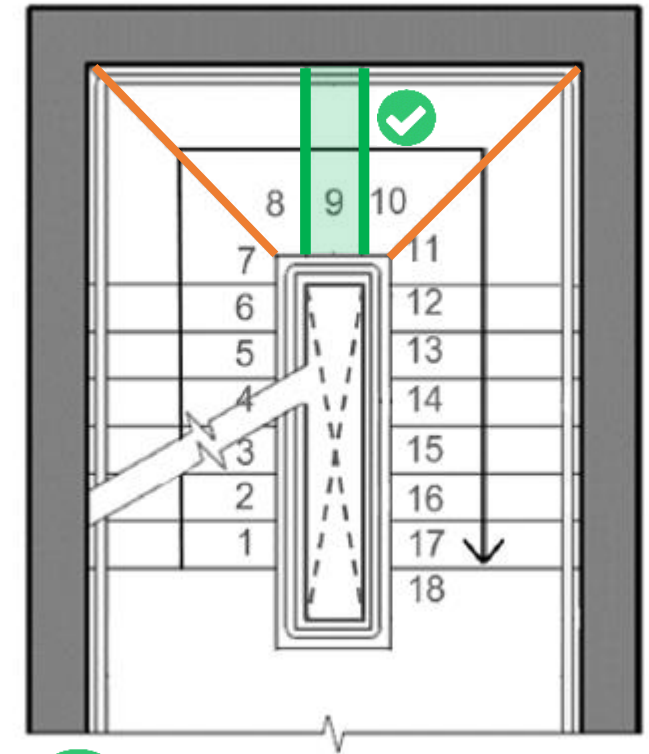
A landing shall not have **any step or drop**, except that in a dwelling unit, one winder is allowed in every 90 degrees turn in the staircase.



X Back-to-back staircase winders **NOT** acceptable with no staircase tread provided in between.



X Back-to-back staircase winders **NOT** acceptable with a single step or drop in between.



✓ Staircase winders separated by a flight of stairs in between. Winders are considered as part of total riser count.



4.7.3.1.e Handrails Gaps and Examples of Wall Surfaces

Clause 4.7.3.1.e in the Code of Accessibility 2019

- (e) have a clear space between the handrail and all wall surfaces as shown in Figure 39(b) of:
- (i) a minimum of 40 mm; or
 - (ii) a minimum of 60 mm where the wall has a rough surface.

Some Examples of **Smooth** Surface (Min 40mm wall gap)



Smooth
Metal
Surface



Smooth
Concrete
Wall Surface



Smooth
Plaster Wall
Surface



Smooth
Timber Wall
Surface

Some Examples of **Rough** Surface (Min 60mm wall gap)



Pebble
Wash
Wall
Surface



Rough
Stone
Wall
Surface



Textured
Wall
Surface

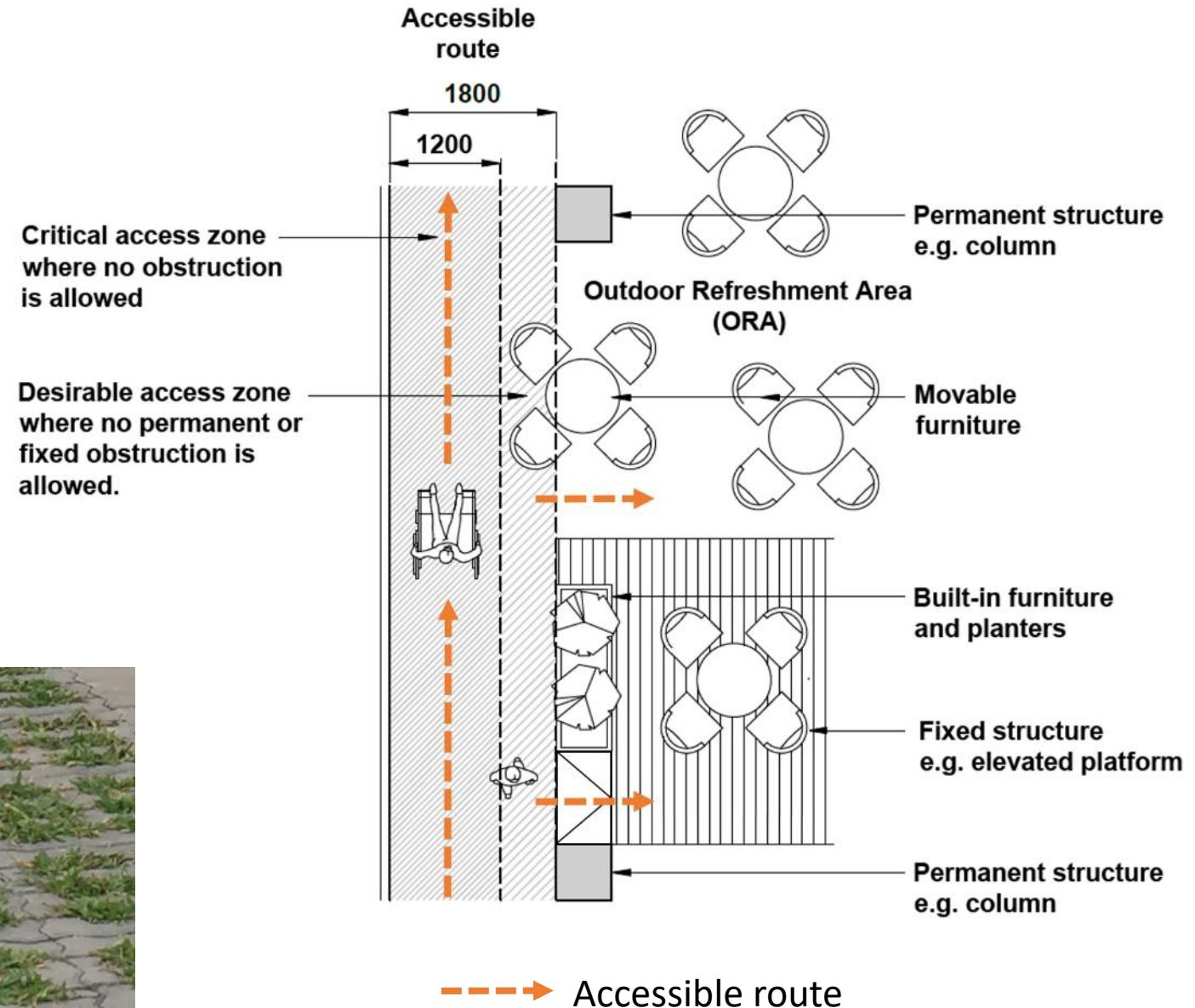


Uneven
& Rough
Wall
Surface

Accessible Route within ORA

Design Principles:

- **Indoor seating of F&B unit must be made accessible**; outdoor seating should not be the primary seating arrangement.
- **Minimum width of 1800mm for accessible routes** with no permanent or fixed obstruction such as built-in furniture, planters, etc.
- Should there be a **raised/elevated platform**, it must be made **wheelchair accessible**.
- Use suitable materials for tree **aeration slabs** when they are located **along accessible route**.

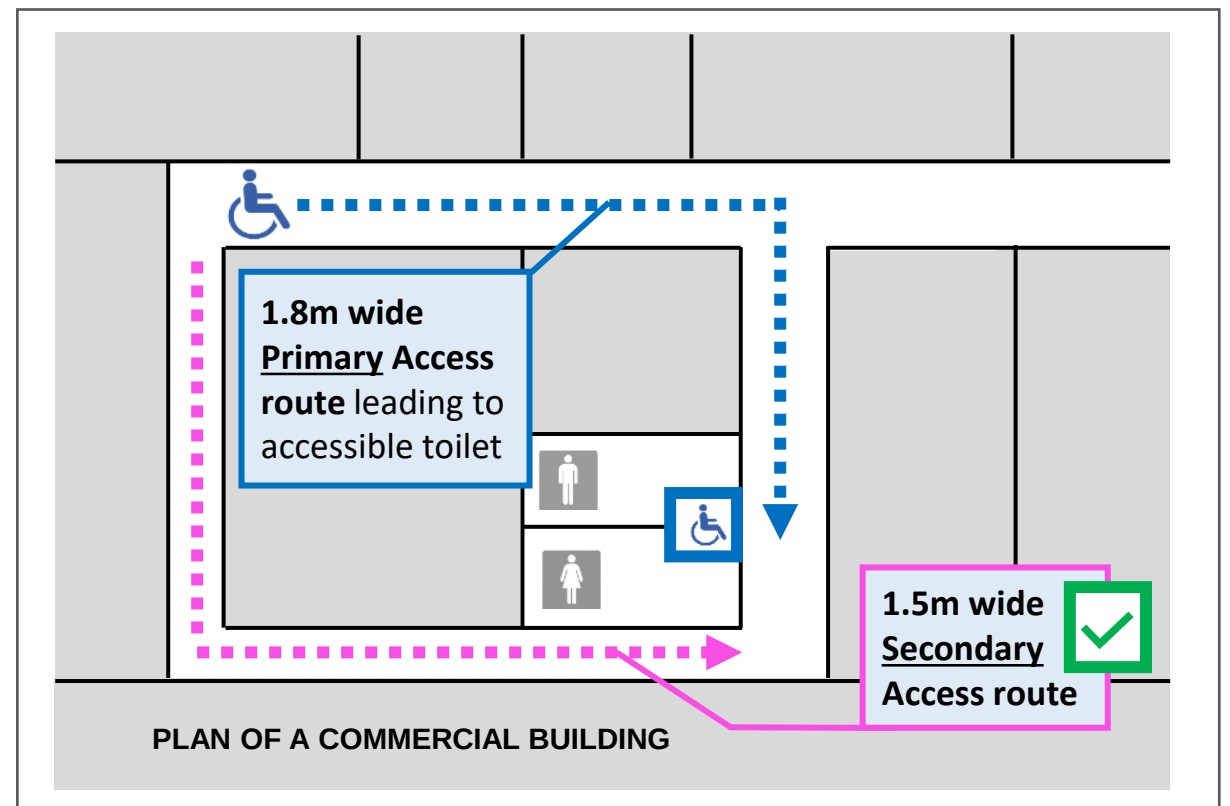
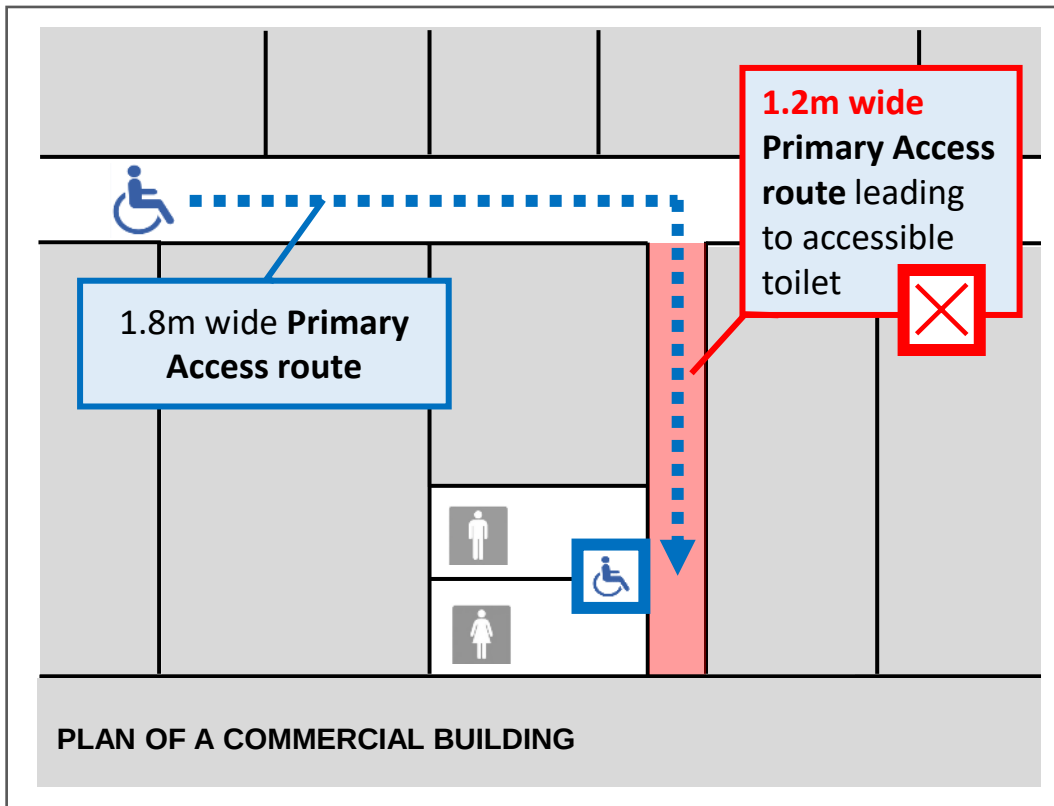


4.2.1.1 Width of Accessible Routes, Corridors and Paths

Primary Access Route is the **main barrier-free path** connecting various functional/activity areas and accessible facilities of the place or building

Secondary Access Route is an **alternative barrier-free path** **provided in addition to the primary access** route and normally caters to a lower volume of human traffic

Minimum width of accessible route must comply with Clause 4.2.1 and Table 3 of Code on Accessibility 2019



Thank You



@BCASingapore



Common Findings and Issues from TOP/CSC inspections and Applications

Senior Manager / Mr. Benjamin Tan

Building Certification & Ops Planning Department
Audit and Inspection Group



Agenda

- **Recent Circulars and Initiatives**
- **Sharing of Non-Compliances Observed During TOP/CSC Inspections**
- **Key Clarifications and Observations from BCA's Recent TOP/CSC Inspections**
 - Toehold and foothold for safety barriers
 - Requirements at maintenance areas
 - Maneuvering spaces at door
 - Retrofit washroom in residential unit
- **Smart Inspection**



Recent Circulars and Initiatives



REMINDER on Required Site Conditions for TOP/CSC Inspection

[Shared in Circular Dated 17 FEB 2023](#)

Example of **Incomplete Works**:

- No **safe and proper egress, ingress and access** within the development
- Incomplete building works such as:
 - *Safety from **falling from height***
 - *Staircase's treads, risers & safety barriers*
 - *Incomplete basic finishing works*
 - *Incomplete accessibility requirements*
- QP to ensure all **building works are completed** prior to request of TOP inspections.
- **False declaration** of incomplete building works and **non-compliance with the regulatory requirements** is an **offence** under **Section 43A** of the BC Act.

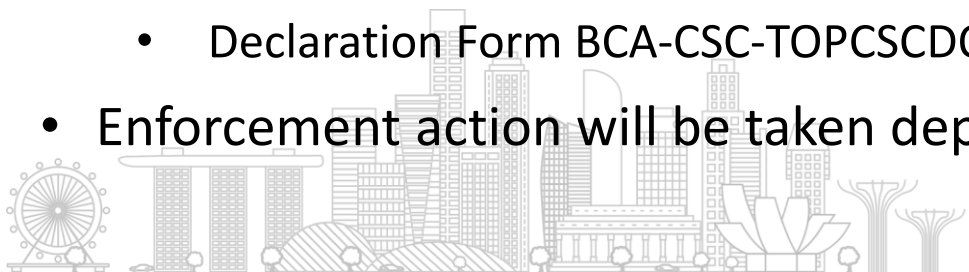


Consequences of **incomplete site** applying for TOP inspection



Circular dated
17 FEB 2023

- BCA Officer will walk off, no WA will be issued.
- Project team to meet BCA management to explain.
- Booking of inspection will not be allowed until meeting is convened.
- Strong advisory will be issued to all project parties (developer, QP, Builder)
- Express Inspection and Express TOP Application may not be allowed for reinspection projects and project team's future projects may also be impacted for recurrent instances.
- Detailed submission of photographs of completed works before BCA proceed with inspection
- BCA may investigate the QP for **potential contravention of BC Act S43A** – Furnishing documents false in a material particular
 - Certificate of Supervision BCA-CSC-CSPBW
 - Declaration Form BCA-CSC-TOPCSCDQP
- Enforcement action will be taken depending on investigation findings.



Latest Updates for TOP/CSC Application

Revised checklist for owner built owner stay



New Air-conditioning/Mechanical Ventilation (ACMV) form



The owner of lift shall apply for PTO via (“LEAP”) Portal (<https://www2.bca.gov.sg/LEAP>) which has replaced the existing Online Permit To Operate (“OPTO”) system since 21 November 2022.



Universal Design Index (Udi)



Note: Can be found in BCA website as well.

Things to Take Note for TOP/CSC application

- Where applicable, completion of CONQUAS assessment is a requirement for residential projects
- All barrier/engineered facade submission by different QPs to be combined under the same table in the respective Annex A
- If there is deployment of crane for subsequent partial TOP, to consult MOM through BCA early
- Adjustments to barriers require ST submission
- Updated phasing of TOP & Hoarding plan

Note: QPs no longer need to submit declarations for use of glass at height, glass barriers, daylight reflectance, AMSL, suspended ceilings during TOP/CSC applications



Sharing of non-compliances observed during TOP/CSC inspections



Top Non-Compliances Observed in 2021/2022

Approved Document

Clause	Description
C.3.2.1	Headroom is less than 2.0 metres
H.3.4.1	Gap at lowest 75mm of barrier
H.3.2.1	Height of barrier is less than 1.0m
L.3.1	Lightning Protection System does not comply (i.e., missing warning signs, touch/step voltage, no bonding of metallic objects, etc.)
E.3.4.4	Risers and treads within each flight of stairs are not uniform in height and size
H.3.4A	Barrier does not have a height of 850 mm when measured from the last climbable toehold

Code on Accessibility

Clause	Description
5.2.1	Accessible Individual Washroom does not comply (i.e., doors, grab bars, water closet, basin, hooks, size, etc.)
8.3.1	Missing directional signages at lobbies, passageways, etc. to direct persons with disabilities to lifts, toilets, etc.
3.5.8	Missing signage for access vehicle parking
4.5.4	Detectable warning surfaces for ramps/slopes does not comply (i.e., missing DWS, incorrect width/setback/material)
4.11.3	Detectable warning surfaces for staircases does not comply (i.e., missing DWS, incorrect width/setback, material, etc.)

Headroom

- >400 instances of non-compliance to headroom observed in the past 2 years

Openable windows opening into public circulation spaces



Windows opening into public circulation spaces



Protruding openable windows are acceptable in public circulation areas with provision of barriers or planter strips but **kept within the width of the barrier and planter strip***

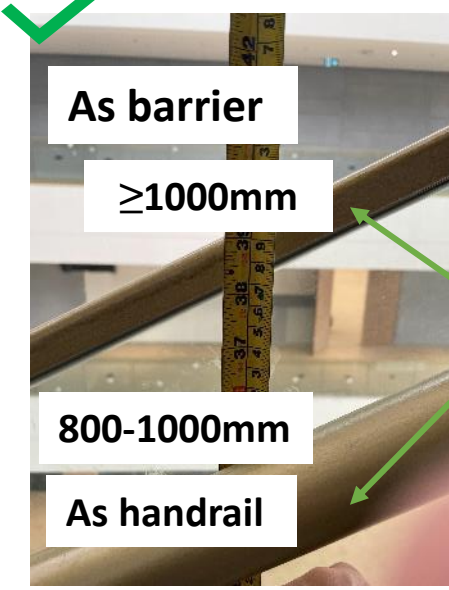


Openable windows' headroom does not apply to landed houses and private residential dwelling units, and windows opening into M&E spaces that are not easily accessible to public

* the protrusion should not reduce the width of accessible route

Safety Barrier

Staircase handrail acting as safety barrier



- *~350 non-compliances to barrier height observed in the past 2 years*

Barrier height is measured from top of kerb and not from the level of soil



Lightning Protection System

- *>250 instances of non-compliance to LPS observed in the past 2 years*



Aluminium LPS tape embedded in concrete



Step & Touch voltage



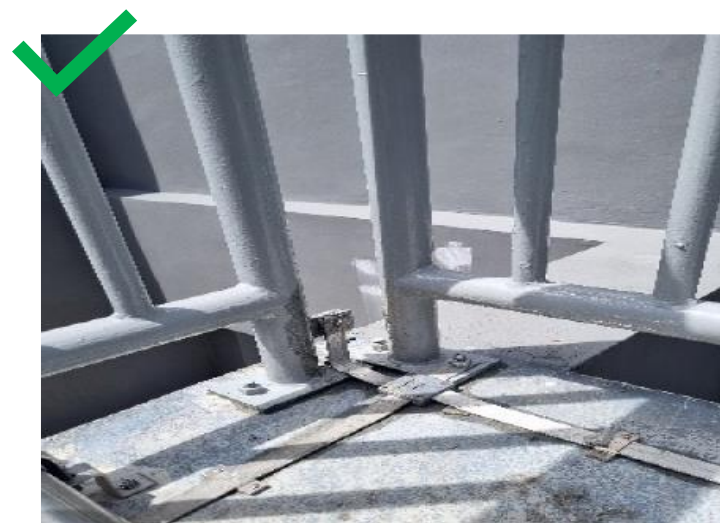
LPS warning sign



Copper LPS tape embedded in concrete



Touch voltage



Bonding exposed metallic parts to LPS



Safety from Falling - Climbability to fall > 1m

- *>300 instances of climbability issues observed in the past 2 years*



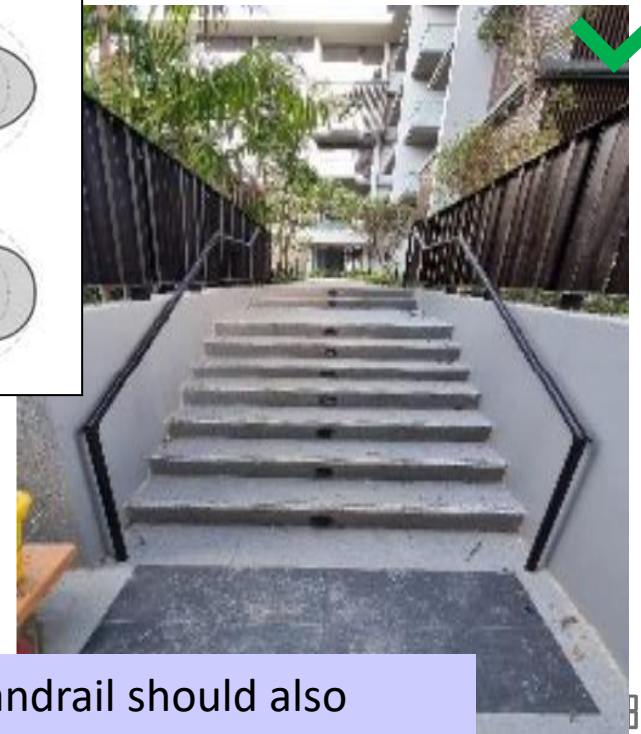
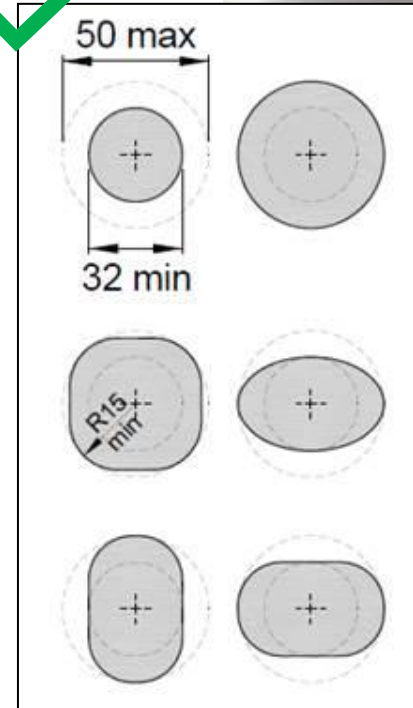
Should not have any toehold or foothold to facilitate climbing



Staircase Handrail Profile

Examples of staircase handrail profile that do not comply

- >250 instances of non-compliance for handrail profiles observed in the past 2 years*



Handrail should also return to wall/floor/post

Ventilation Requirements

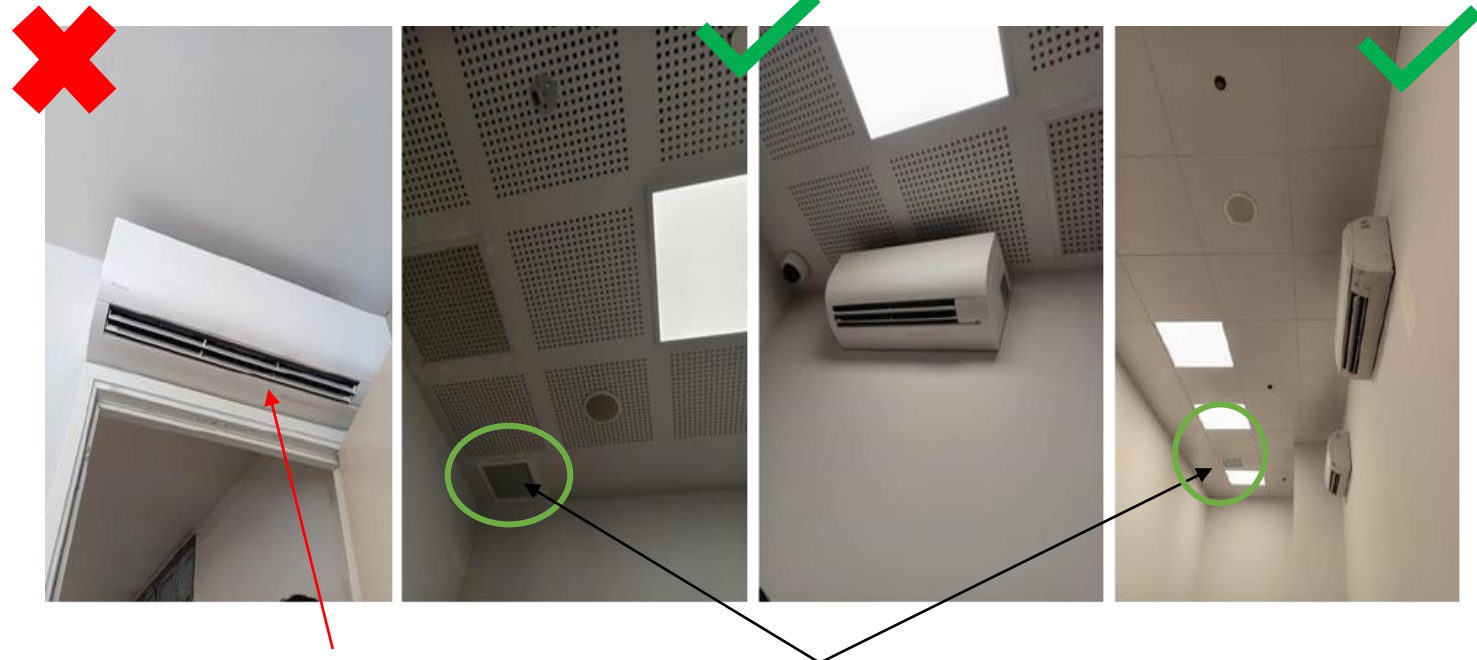
- *~250 instances of non-compliance to mechanical ventilation (SS553) or natural ventilation requirements observed in the past 2 years*

✓ Examples of acceptable mechanical ventilation systems/fittings:



Figure 2.1: Window or wall mounted fan

Figure 2.2 Ducted fresh air supply outlet



Standalone wall mounted fan-coil unit only regulate temperature and does not cater for fresh air intake. It will not comply with ventilation rates given in SS553

Ducted fresh air supply + wall mounted fan-coil unit

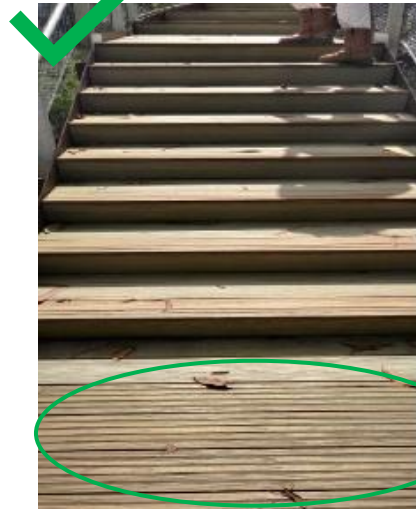


Detectable Warning Surface (DWS) for Staircases

- *~190 non-compliance of DWS for staircases observed in past 2 years*

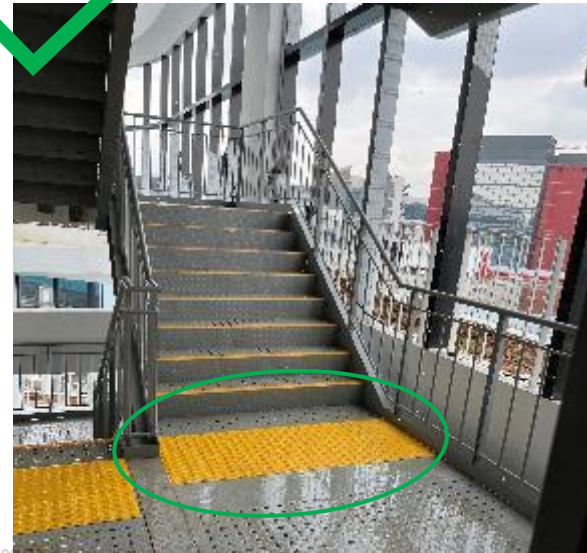


Tiled Staircase

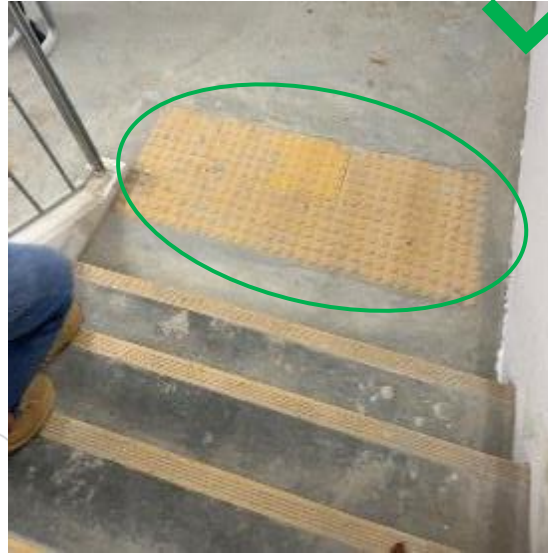


Wooden Staircase

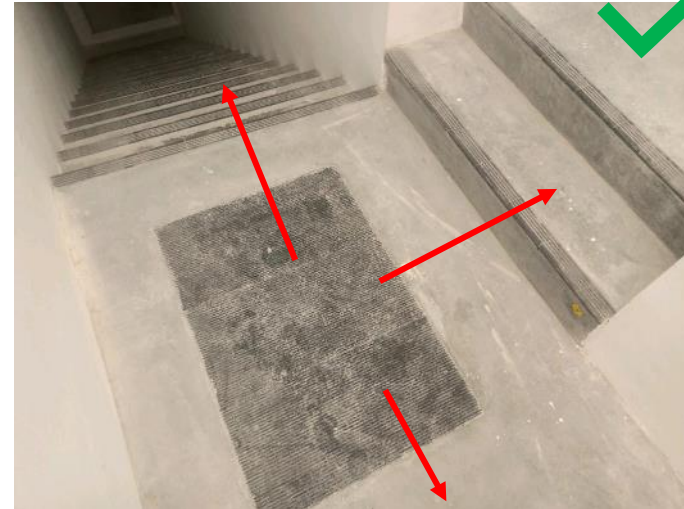
Must have **different texture and color contrast** from the surrounding floor surface



Metal Staircase



Concrete Staircase



Clarification: We can allow the above placement of DWS as long as **DWS extends to a depth of 600mm commencing 300mm back from the stairs.**

Key Clarifications and Observations from BCA's Recent TOP/CSC Inspections



Recap on AD Cl H.3.4A Requirements to Prevent Climbing

H.3.4A.1- A barrier must have a height no less than –

- (a) the height specified in paragraph H.3.2.1 (i.e., **1.0m high** or 900 mm at the lower edge of the window and gallery or balcony with fixed seating)
- (b) **850 mm** when measured **from the last climbable toehold**

Note 1:

A **toehold** means –

- (a) Any opening having **horizontal dimension of >50mm and vertical dimension of >30mm, or**
- (b) Any kerb **width >50mm and has a chamfer gentler than 45° relative to the horizontal plane.**

Note 2:

A **toehold** is **climbable** if it is **located within 600mm vertically** from

- (a) the finished floor level;
- (b) a step; or another climbable toehold.

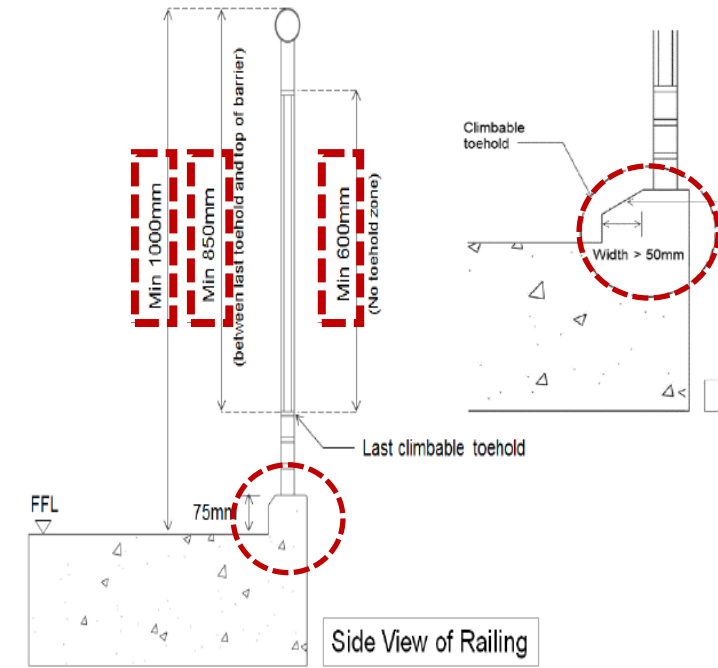


Figure H.3.4A.1(a) – Requirements to Prevent Climbing

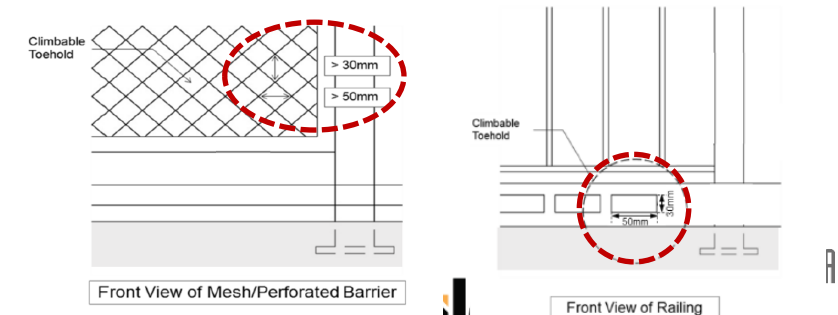
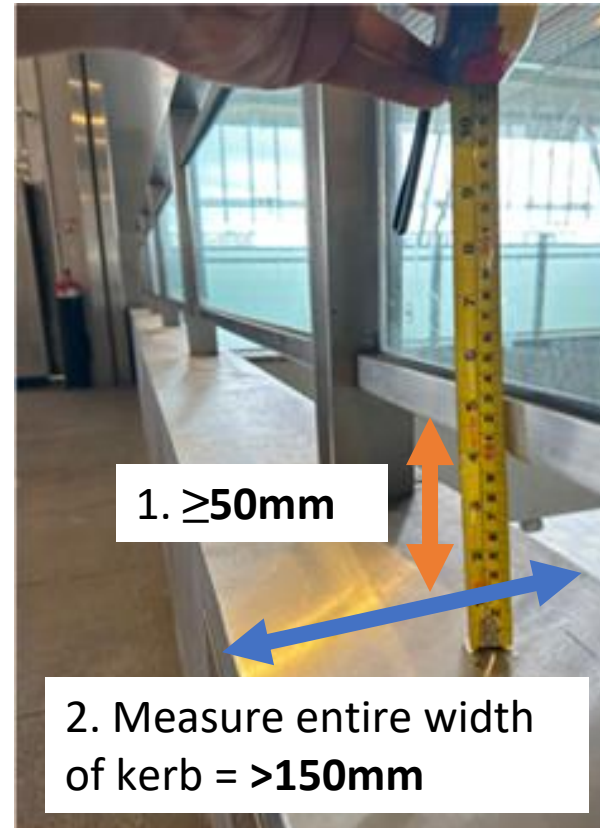


Figure H.3.4A.1(b) - Toehold Dimensions at Mesh/Perforated Barrier

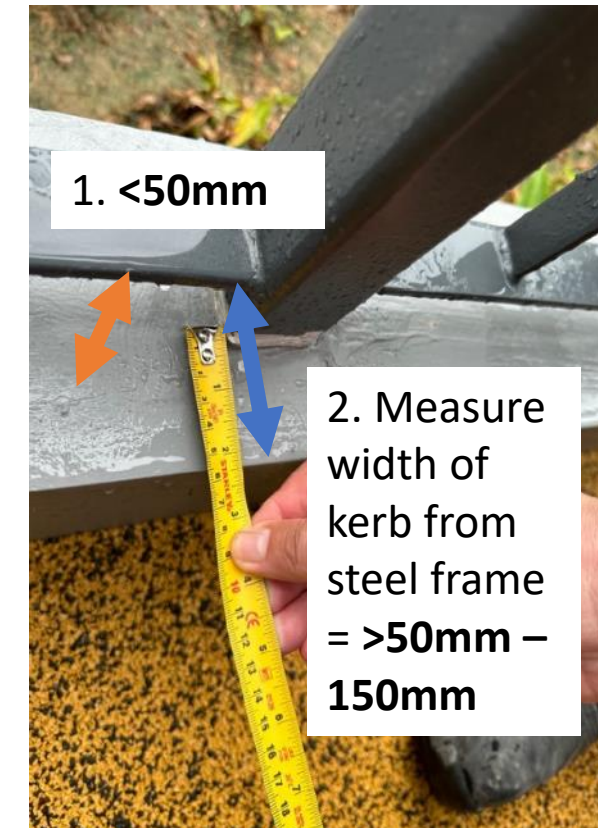
Figure H.3.4A.1(c) - Toehold Dimensions at Railing

Safety from Falling: Foothold at barriers

- How do you know whether it is a foothold?
 - If there is a gap/opening at barrier with **vertical dimension of 50mm or more**, and **width of kerb is more than 150mm**, it is considered a foothold
- 1m barrier height is **measured from top of foothold**



Foothold

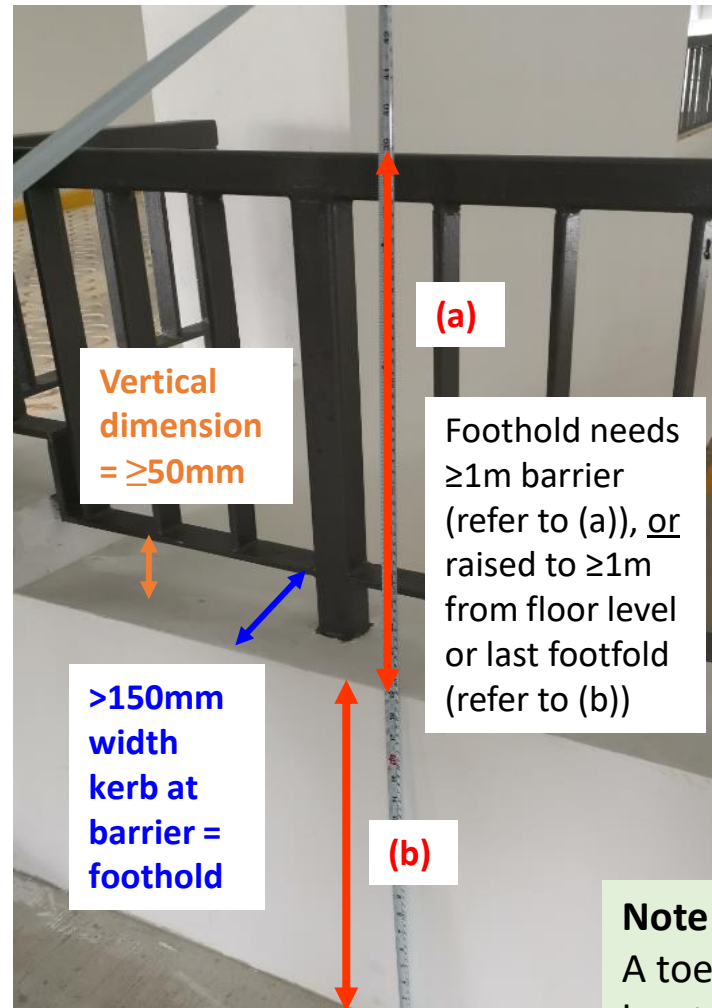
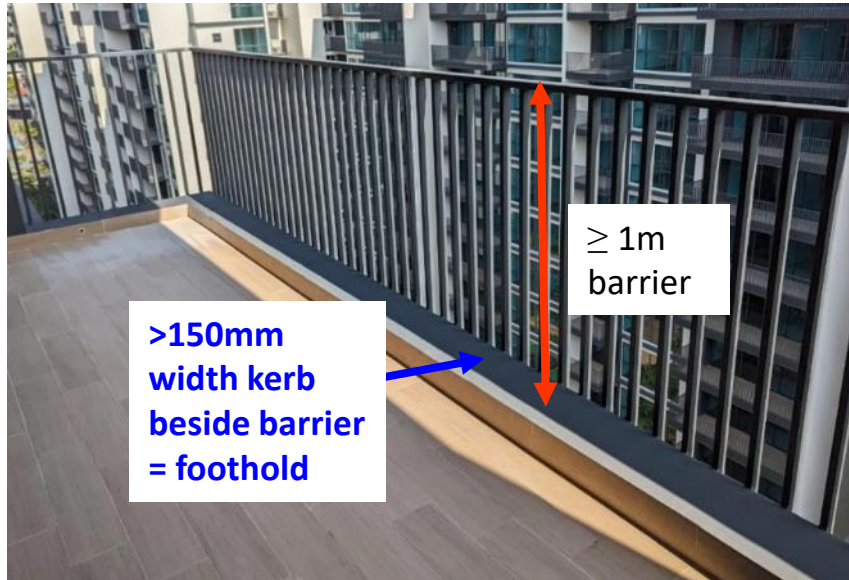


Toehold



Safety from Falling: Foothold in barriers

Examples of foothold in barriers



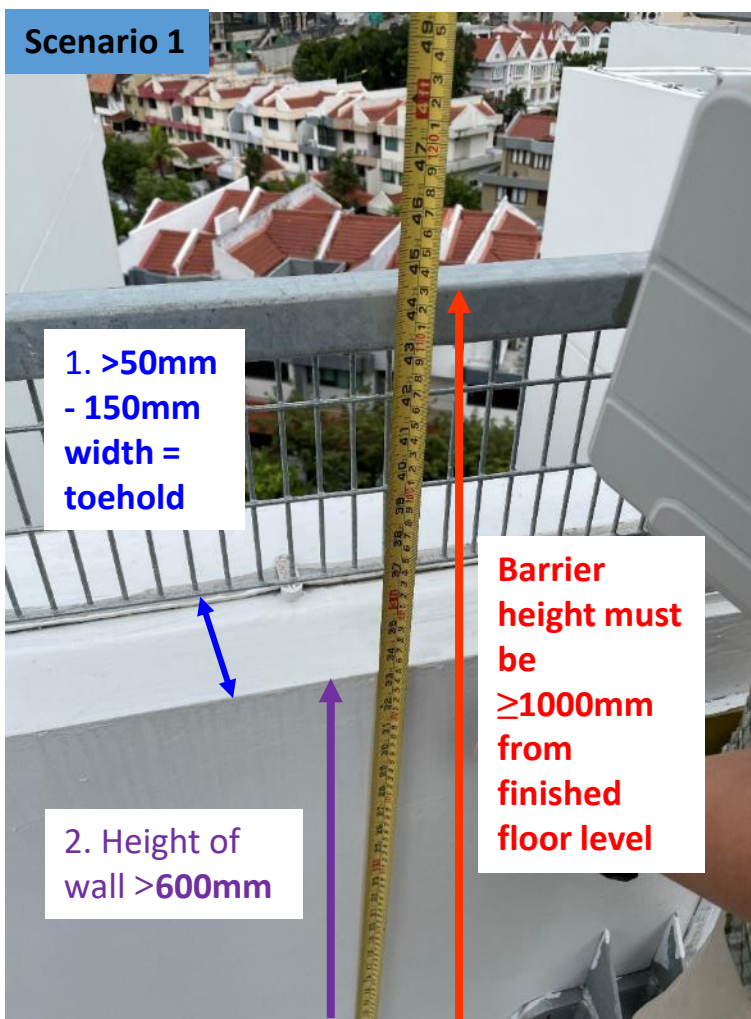
Note 2 of H.3.4A.1:

A toehold is considered to be climbable if it is located within 600 mm vertically from

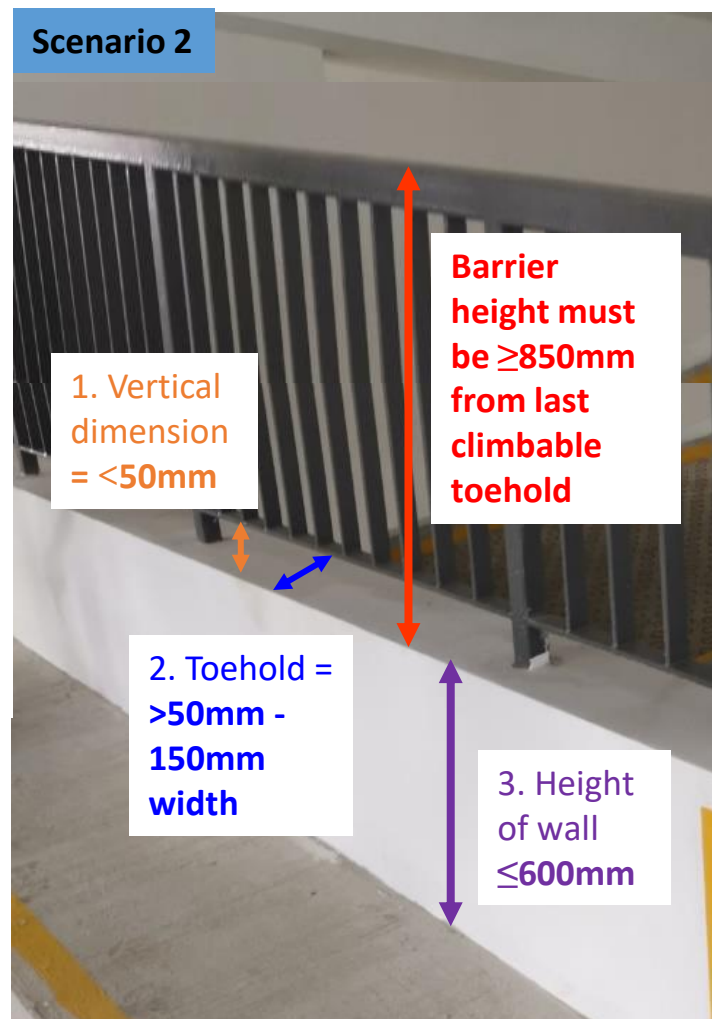
- (a) the finished floor level; or
- (b) a step; or another climbable toehold

Does not apply to foothold

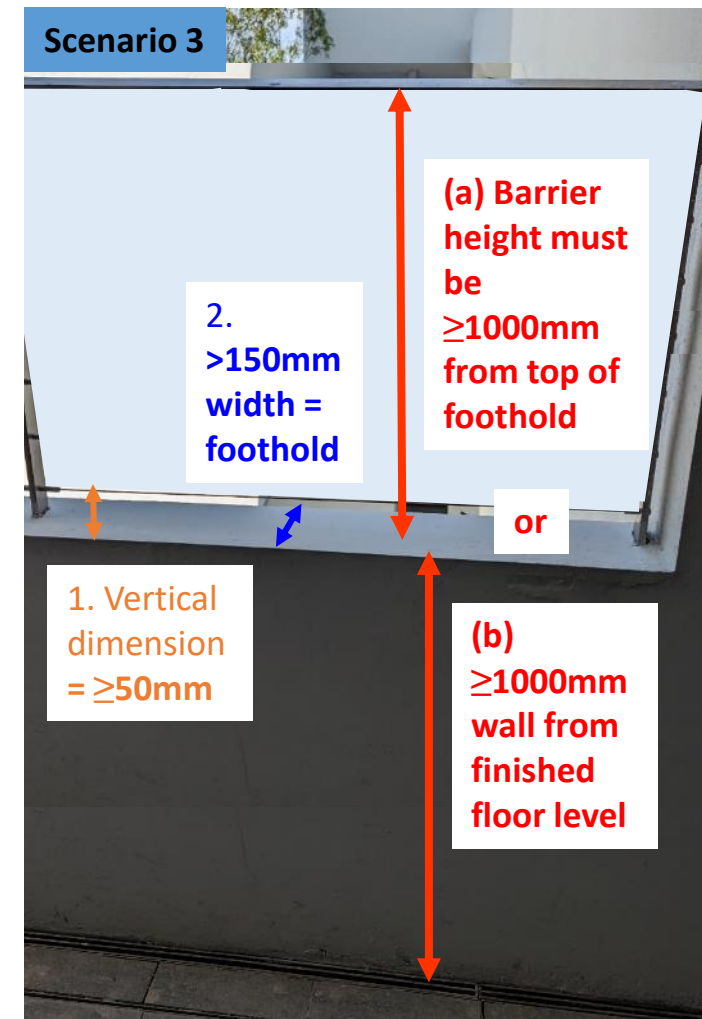
Safety from Falling: Toehold vs Foothold for barriers



Non-climbable toehold

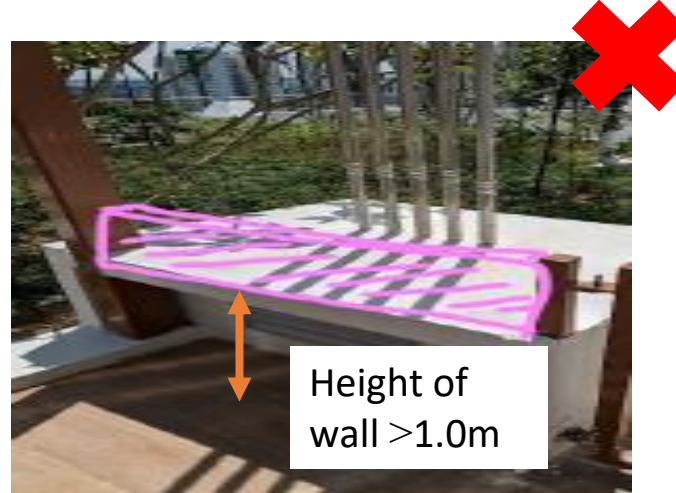


Climbable toehold



Maintenance Areas at Public Circulation Spaces Such As Lift Motor Room, Access to Rooftop, etc.

To provide barriers of $>1.0\text{m}$ at maintenance areas at public circulation spaces



No provision of barriers of $>1.0\text{m}$ or barriers not provided

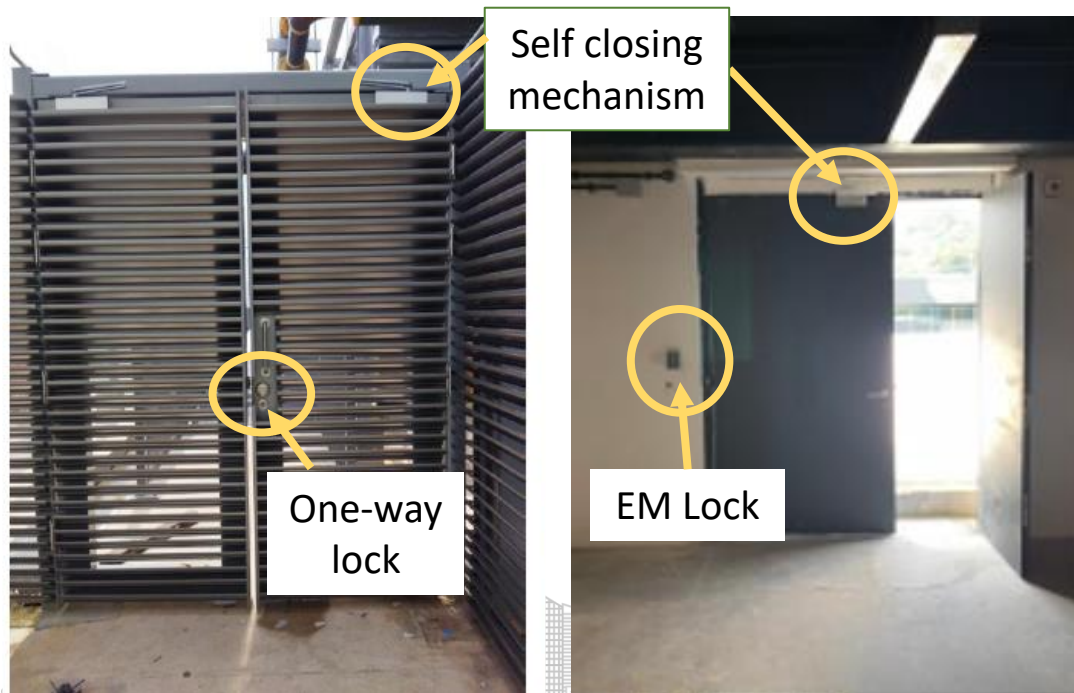


Access Control to make maintenance rooftop/area not easily accessible

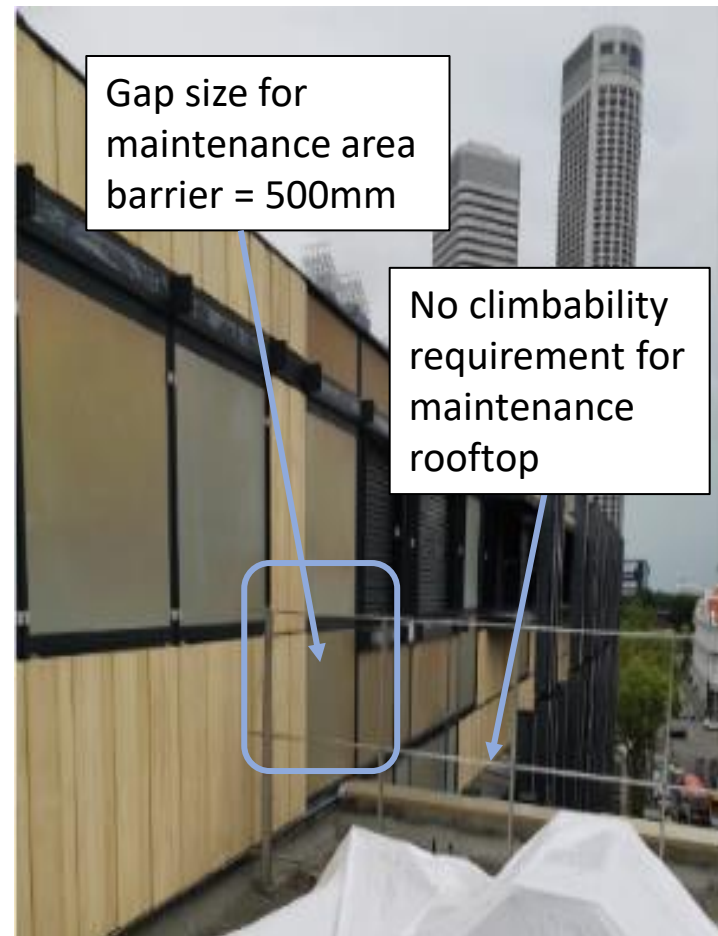
Acceptable Access Control Measures

To prevent easy access to the public, door to maintenance roof/area shall have access control in the form of:

1. **One-way lock or EM lock, and**
2. **Self-closing mechanism**



Relaxation of Approved Documents Requirements such as barrier, climbability, LPS, etc.



Low Gate Access Control to make maintenance purposes only areas/spaces not easily accessible



Easily climbable over the metal fence

1 way key lock should not be used for low gates

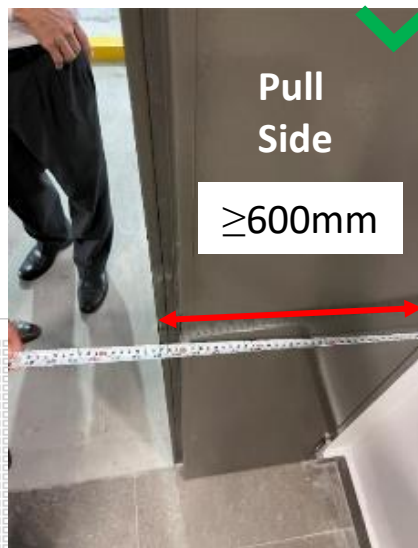
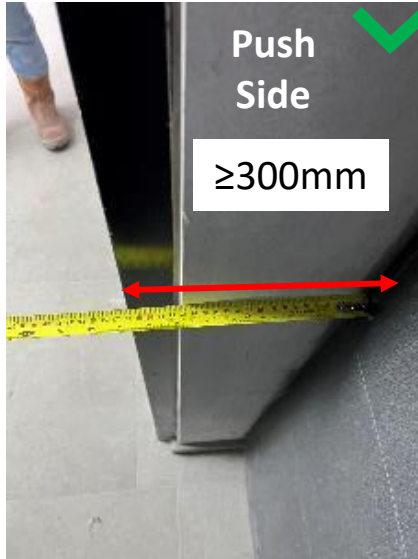


One solution is provision of 2 way key lock and self-closing mechanism



Maneuvering spaces at door

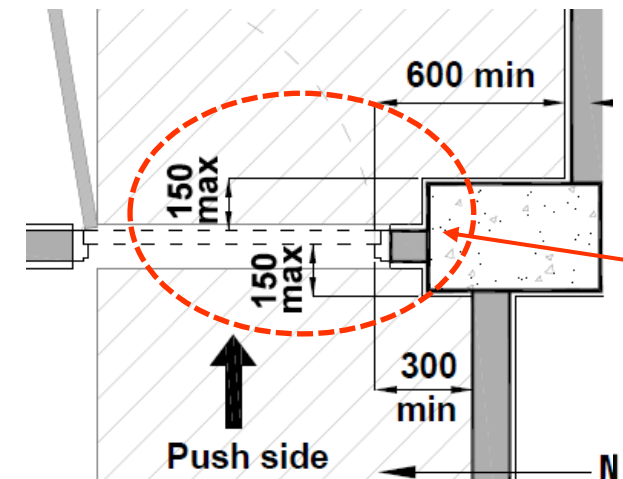
Common spaces



Entrances to residential units

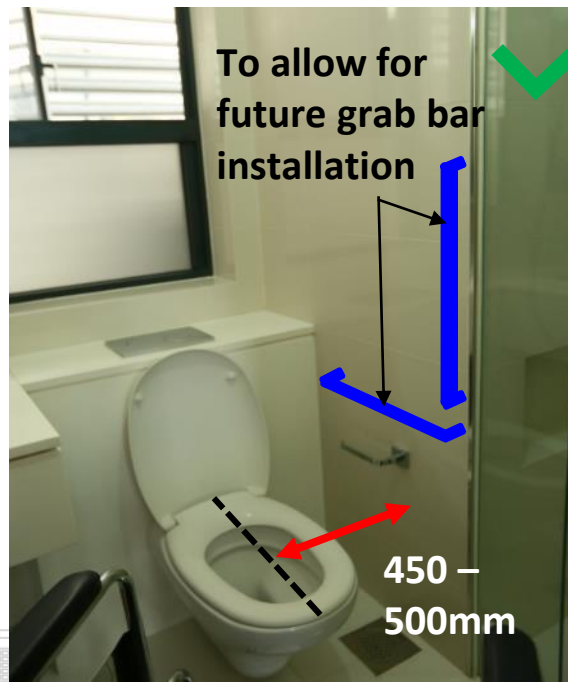
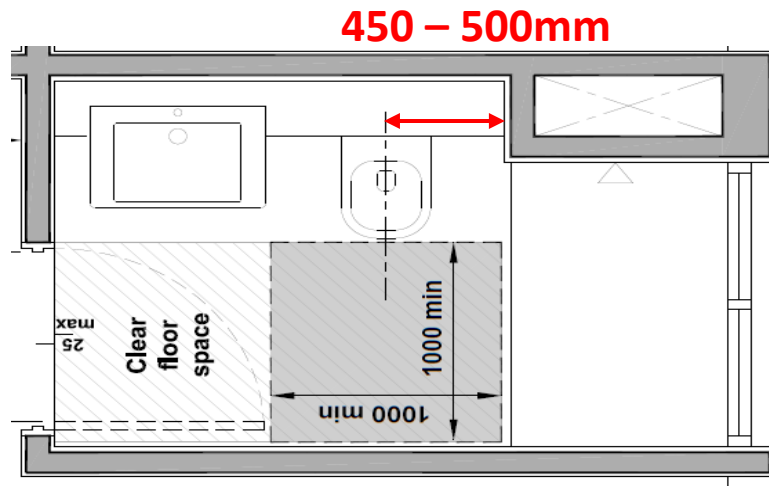


Applies to BOTH entrances to residential units & Common spaces



Code on Accessibility Clause 4.4.6.3 - The leading edge of the door leaf shall not be set more than 150mm away from the wall surface

Retrofit Washroom in Residential Unit



Wall to center of WC



Clear floor space at front edge of WC



Change in level of floor surface at doorway

Smarter Inspection for TOP

BCA is exploring new technologies and methods to bring about out more effective and efficient checks:

- Pilot-testing the use of “360 Capture” to transform BCA’s current inspections
- This technology can also aid QPs in supervising and documenting that supervision was done



1. Using 360 Capture to check completeness of site before inspection



2. Using 360 Capture to better document inspection findings for both BCA and project parties



3. Using 360 Capture to conduct inspection remotely without the need to go down to site physically

BCA encourage the industry to explore the use of emerging technologies to help you supervise your site effectively and efficiently

Thank you



@BCASingapore



Evidence-based Approach for CD Commissioning of Landed Projects

Senior Engineer / Er. Teoh How Meng

Engineering & Enforcement Department
Audit and Inspection Group



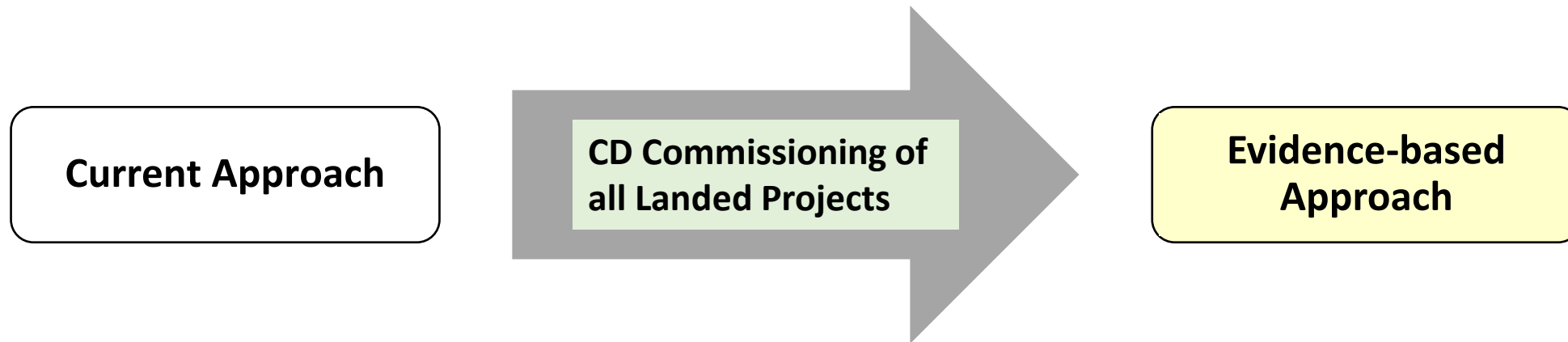
Content

- 1) Objective
- 2) Evidence-based Approach
- 3) Videos of Commissioning Tests
- 4) As-built HS Setback
- 5) Concluding Remarks



Objective

To share with the industry on the proposal of **evidence-based approach** for CD commissioning of all **landed residential projects**.

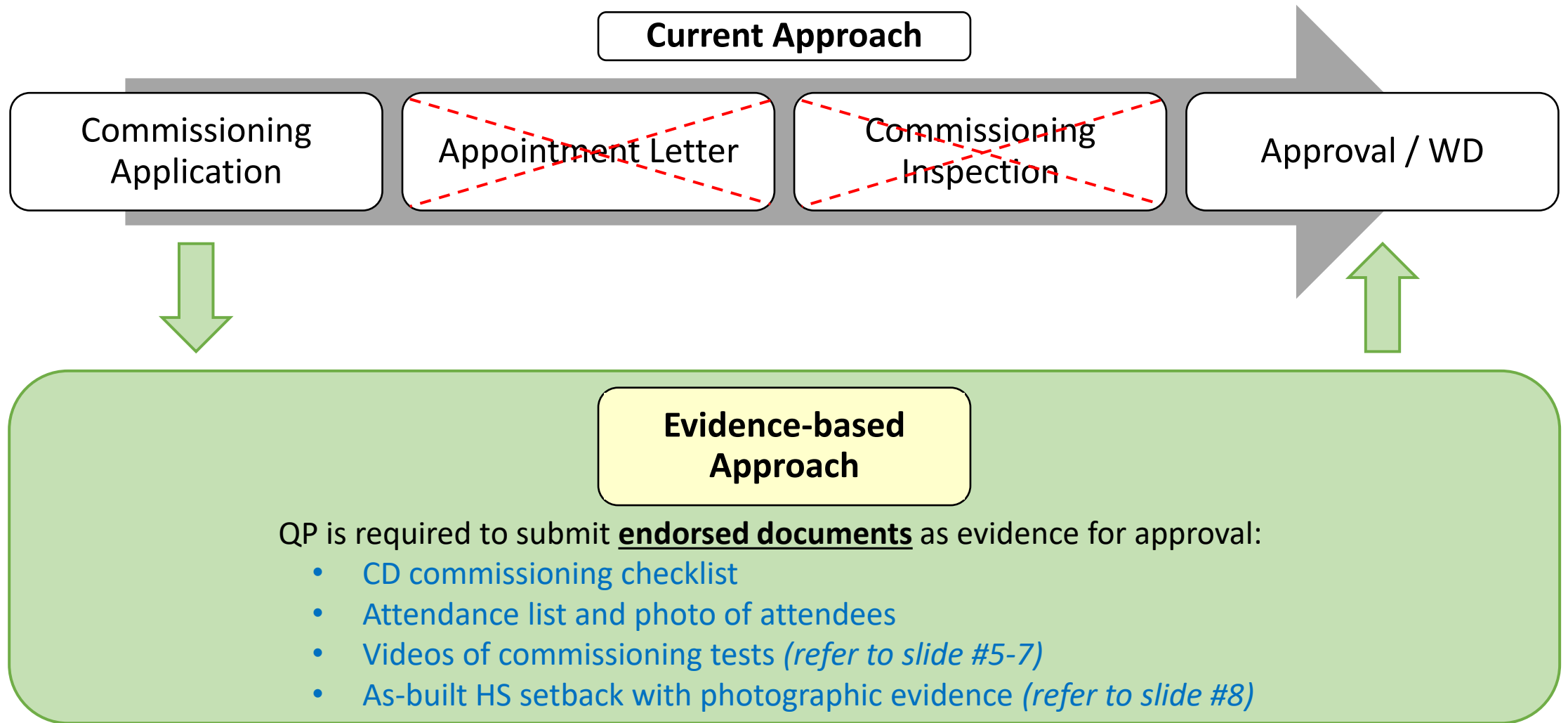


Serves as documentation and helps QP with the supervision of the works done.

BCA & SCDF in discussion whether this could be accepted in lieu of a physical BCA inspection.

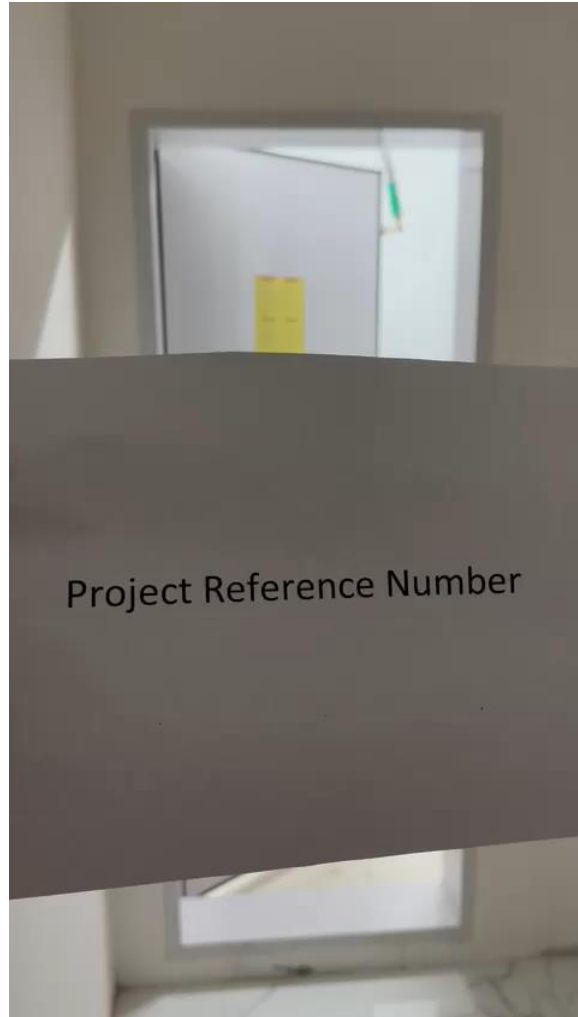


Evidence-based Approach



Videos of Commissioning Tests

1) Light penetration test



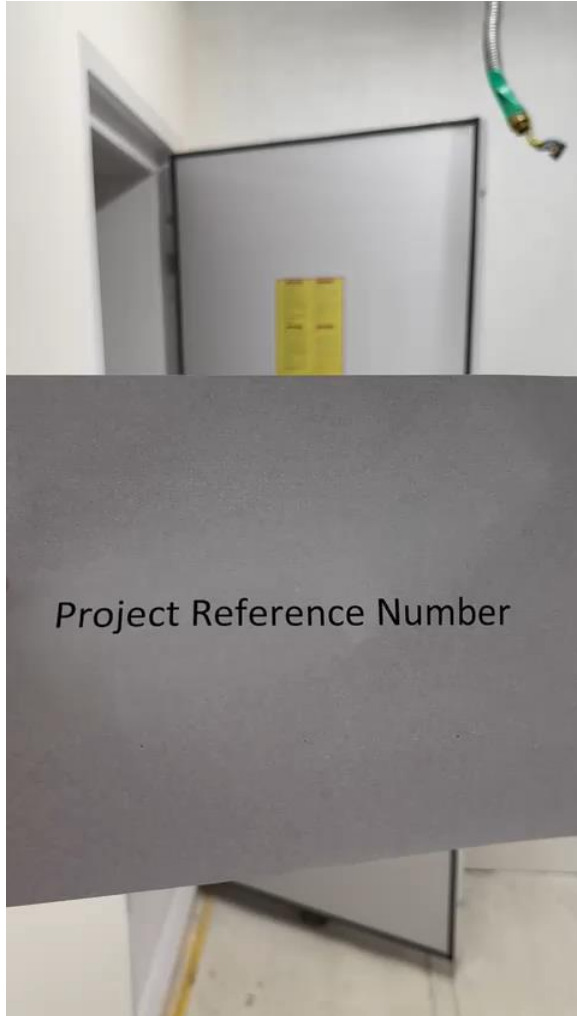
Video requirements:

- 1) Project reference number
- 2) The test is considered to have passed if no light could be seen from the inside of HS



Videos of Commissioning Tests

2) Chalk mark test



Video requirements:

- 1) Project reference number
- 2) The test is considered to have passed if there is an unbroken and uniform transfer of the chalk markings onto the door seal when the door is closed and re-opened



Videos of Commissioning Tests

3) Air-tightness test

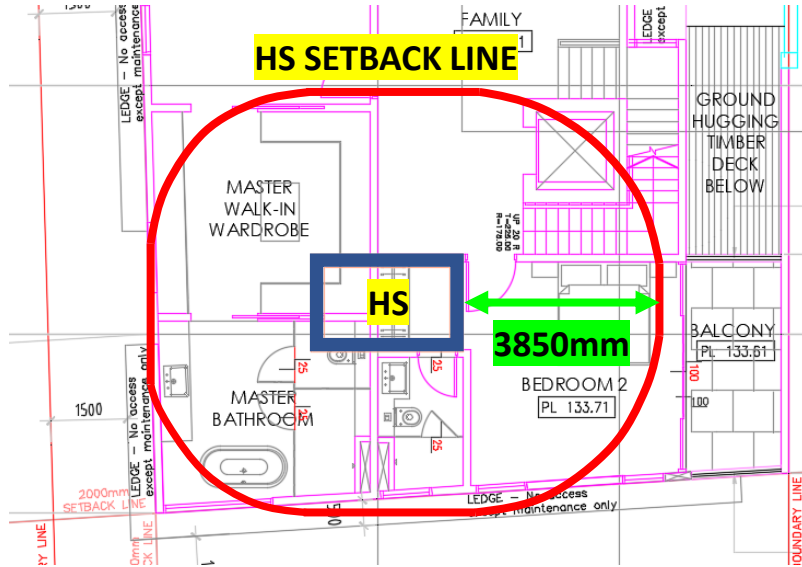


Video requirements:

- 1) Project reference number
- 2) Setup of air-tightness test
- 3) The HS is pressurised by pumping air into the HS such that there is a pressure difference of **250 Pa** between inside and outside of HS. The HS is considered to have passed the test if the pressure gauge shows more than or equal to **50 Pa** after 45 seconds (*Note: 1 mm = 10 Pa*)



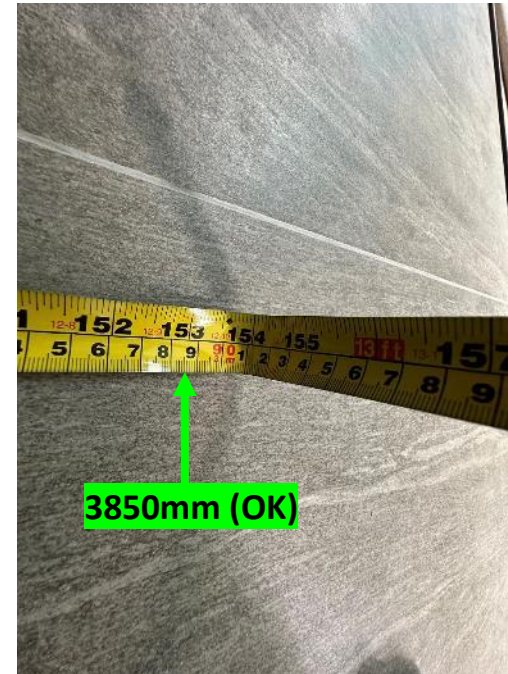
As-built HS Setback



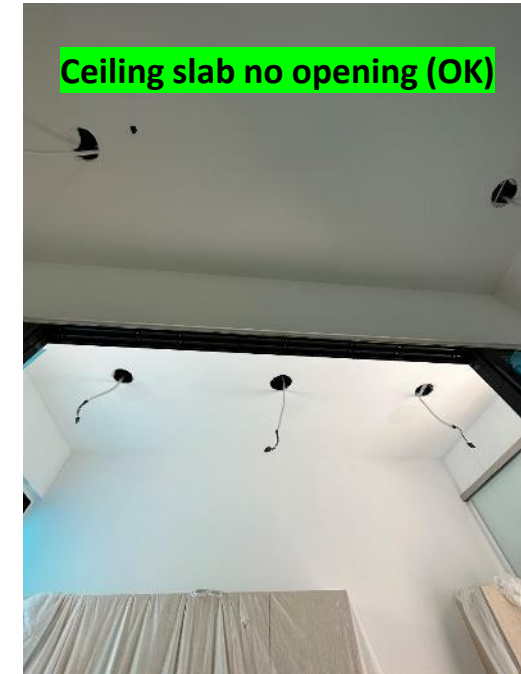
Approved Plan



Measuring tape



Closeup measurement



View of ceiling slab

Photo requirements:

- 1) As-built setback distance
- 2) View of ceiling slab above HS within setback distance



Concluding Remarks

- 1) Proposal enables QP to document own checks and supervision.
- 2) Trial inspections were carried out with positive feedbacks from QPs and builders.
- 3) Seek feedback from the industry on the proposal.



Thank you



@BCASingapore



Building Layout Related Requirements For Lifts

Senior Engineer / Er. Desmond Ang

Electrical and Mechanical Engineering Group
Investigation & Enforcement Department



Table of Contents

- Building Layout Requirements in SS550:2020
- Other Building Design Considerations related to Lifts



Building Layout Requirements in

SS550:2020 –

Code of Practice for installation, operation and maintenance of electric passenger and good lift



Recap on the Adoption of SS550:2020

- SS550:2020 launched on 8th Jan 2021.
- Circular issued on 11 Jan 2021 (link: <https://www1.bca.gov.sg/docs/default-source/docs-corp-news-and-publications/circulars/circular-on-adoption-of-ss-550-2020.pdf>)

Implementation date of code:

Any lifts in project with 1st set of plans submitted on or after 1st July 2021 will need to comply to SS550:2020.



Planning for SS550:2020 in Building Design

To reduce the need for unnecessary and excessive alteration works in later construction phases for the lifts, the following should be practiced by the relevant project stakeholders (owners, project QPs, SPE (L&E)s, consultants, contractors):

- **Early planning and due consideration** for these code requirements at the building design phase
- **Proper exchange of information and communication** between the various project stakeholders



Reminder on Building Layout Related Compliance

- Circular issued by BCA on 1 Mar 2023 to remind developers, architects, SPEs and lift installation contractors on **Building Layout related requirements** specified in SS550:2020
(link: <https://go.gov.sg/bca-circular-compliance-building-layout>)

*Compliance to these requirements are **essential** to ensure that lift service personnel are able to **safely access lift machinery spaces for rescue or repair works at all time.***

BCA audited several projects subject to SS550:2020 and found non-compliances in the building layout related requirements, which consequentially caused **unnecessary delays to the applications for Permit-to-Operate** for the lifts as the QPs sought to regularize the non-compliances.

Motor room

Motor rooms shall be provided with [proper access](#) and is [accessible by authorized personnel](#).

Proper access to machinery spaces/motor room

Requirements for access route to the machinery spaces:

- Provided with a sheltered passage way of at least a clear width of 1m and a clear height of 2.0m
- Must not be slippery & safety railing shall be provided along passage way if it is less than 1.5m away from edge of roof
- Provided with staircase if there is difference in level between floor and final machinery access



Proper access to machinery spaces/motor room

Requirements for access route to the machinery spaces:

- In the exceptional case when a conventional staircase cannot be provided, proper fixed ladders can be used (for height within 4m). For ladder access over 3 m in height, fall protection shall be provided;

Access doors to machinery spaces/machine room shall have a min. clear opening height of 2m and width of 1m.



Undesirable examples from site observations

Ladder at staircase half landing / Ladder with NO cage



Undesirable examples from site observations

Access to Lift Motor Room

- Tripping hazard along the access, e.g. disorganized and loose wires
- No railing for staircase leading to lift motor room

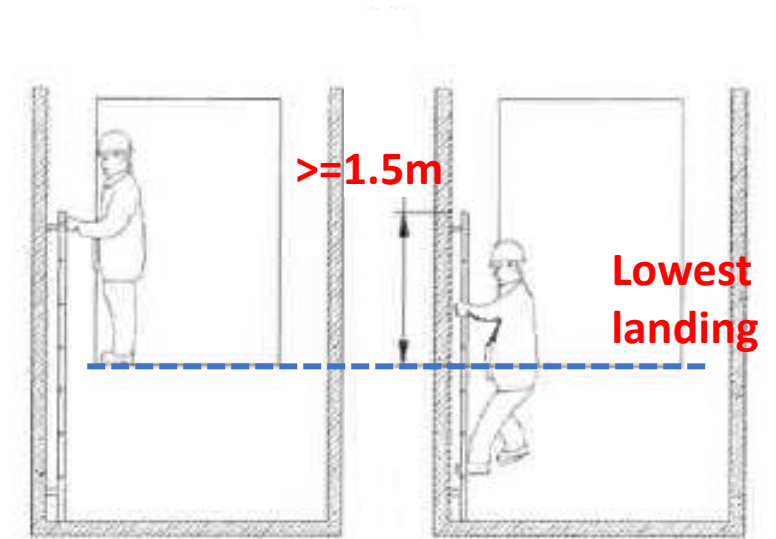


Access to pit

A means to enter the pit shall be provided consisting of:

- a) an access door where the pit depth exceeds 2.50 m;
- b) either an access door or a ladder inside the well, easily accessible from the landing door, where the pit depth is not exceeding 2.50 m.

Access doors to pit shall have a min. clear opening height of 2m and width of 1m.

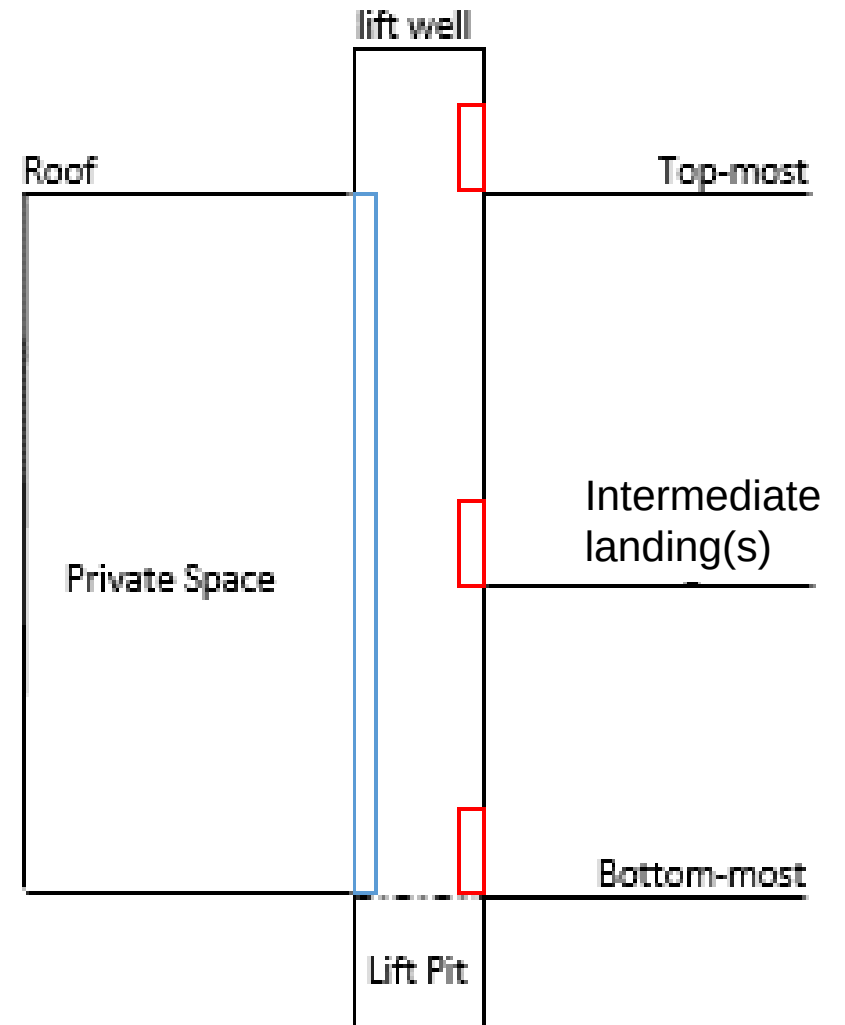


Type 1 - Fixed pit ladder

Permanent access to lift well for private lobby lift

If access to the lift for maintenance and rescue purposes is via private premises, then permanent access of authorized persons to the premises and relevant instructions shall be provided.

As a minimum, permanent maintenance access must be provided at the topmost, lowest landings and preferably also at one or more intermediate landings.



Exclusive use of machinery spaces

The well, machine and pulley rooms **shall not be used for purposes other than lifts**. They shall not contain ducts, cables or devices other than for the lift, and shall not be used as a means of gaining access to any other parts of the building

*Compliance to this requirement is essential to **prevent the access to lift machineries by untrained personnel** which, in cases of misuse, may result in harm to themselves or affect the safety of lift operations.*

*This is also to **prevent the storage of other equipment** which may **obstruct lift maintenance works** and even introduce additional **safety risks** to these work spaces.*



Audi Service Centre Explosion

The Straits Times 28 March 2023:

Flammable vapours from waste oil tank caused Audi service centre explosion:
WSH Council



An explosion blew open a section of the Audi service centre in Ubi on March 7, 2023. ST PHOTO: KUA CHEE SIONG

On March 7 2023, an **explosion** occurred at Audi service centre in Ubi, resulting in 1 injury and the evacuation of 100 people.

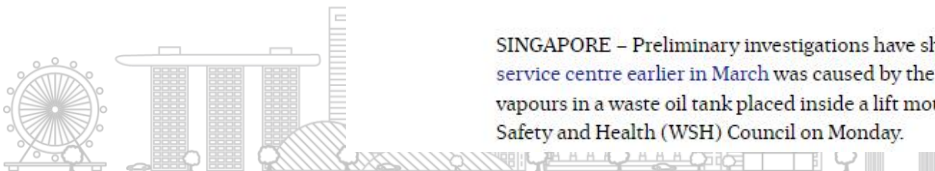


Anjali Raguraman
Correspondent

UPDATED MAR 28, 2023, 11:22 AM SGT



SINGAPORE – Preliminary investigations have shown that an explosion at an Audi service centre earlier in March was caused by the accumulation of flammable vapours in a waste oil tank placed inside a lift motor room, said the Workplace Safety and Health (WSH) Council on Monday.



Other Building Design Considerations related to Lifts



Other Building Design Considerations

Proper machinery spaces should be provided for all parts of the lift systems



E.g. No proper housing for control panel resulting in overheating and frequent breakdowns



Other Building Design Considerations

Noise

- **Noise and/or vibration** generated from the lift system may be transmitted through air and/or building structure.
- They affect the building users' daily lives (e.g. sleep disruptions) and are one of the common source of noise complaints, and should be taken into careful consideration in building design.

Sources of noise from lift systems include:

- brakes
- control panel
- motor
- lift doors
- Structure



Other Building Design Considerations

Most cost-effective to plan for **placement of lift away from dwelling units in early design stage** compared to any post-construction mitigation measures such as modification/repositioning of machineries and additional noise proofing.

Recommendations (where there are no space or height constraints):

- Lift well not to abut dwelling units
- Lift with machine room above rooftop



Other Building Design Considerations

Proximity to escalators

The location of lift shaft should be planned and designed to be in the vicinity of the escalator as much as practicable. This is to allow easy access for people who need to use the lift (e.g. parents with strollers, people with bulky luggage)



Keypoints

- **SS550:2020** requires the provision of proper access to machinery spaces and exclusive use of such spaces for lift-related maintenance and rescue works.
- Some lift-related good building design practices include planning for the location of the lift and providing proper housing for lift components to prevent downstream issues like noise, accessibility and equipment reliability.

To achieve the above, QP(Building Plan) must play an active role in ensuring compliance through **early planning of building design and proper communication between project stakeholders**. It will be too late to address such issues when SPE(L&E) comes onboard.

Thank You



@BCASingapore



Accessibility and Universal Design

Senior Architect / Ar. Tan Hui Yu

Building Plan and Universal Design Department
Building Plan and Management Group



Basic Accessibility Legislation



Importance of BFA design

Safety



Independent Access
(Quality of Life)



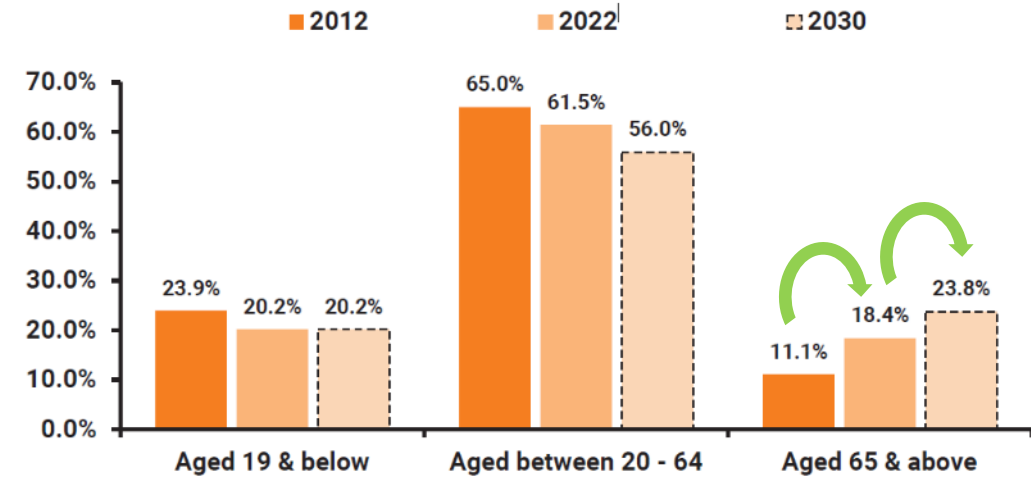
Convenience



Fast Ageing Population

The proportion of citizens aged 65 and above has increased from 11.1% in 2012 to 18.4% in 2022. This proportion is expected to increase to about 23.8% in 2030.

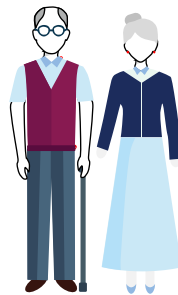
Citizen population by broad age bands, as at June8



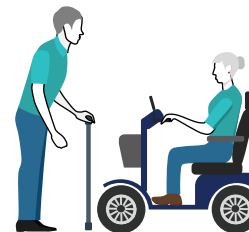
Source: Department of Statistics.

Seniors will potentially be the single largest group of Persons with Disabilities

More older persons



Larger elderly workforce



Seniors with disabilities



Current Legislation

Building Control Regulations

- Ensure that persons with disabilities are able to gain access to buildings and carry out their activities within the building with reasonable ease

Code on Accessibility in the Built Environment*

- Covers features for persons with disabilities, e.g. accessible toilet, accessible lift, accessible ramp, accessible parking lot, etc
- Applies to new buildings and existing buildings undergoing major A&A works with building plans submitted to BCA for approval
- Does not apply retrospectively to pre-1990 non-barrier free buildings unless they undergo A&A works

* previously called Code on Barrier-Free Accessibility in Buildings – first introduced in 1990

CODE ON BARRIER-FREE
ACCESSIBILITY IN
BUILDINGS, 1990



PUBLIC WORKS DEPARTMENT
BUILDING CONTROL DIVISION

CODE ON
ACCESSIBILITY
IN THE BUILT ENVIRONMENT 2019

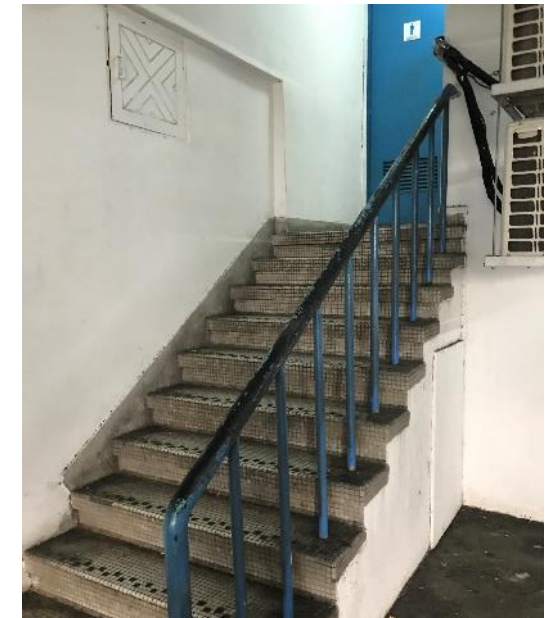
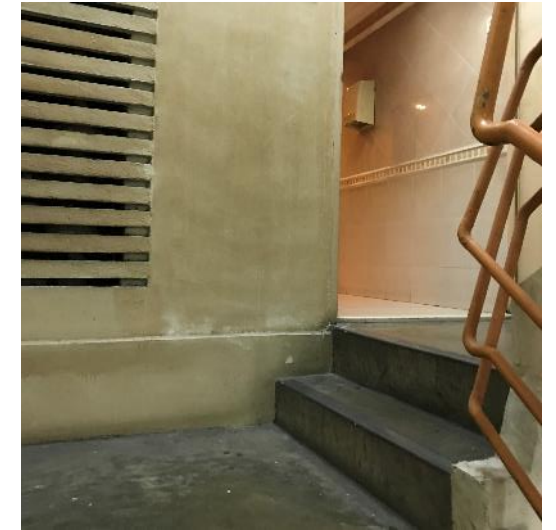
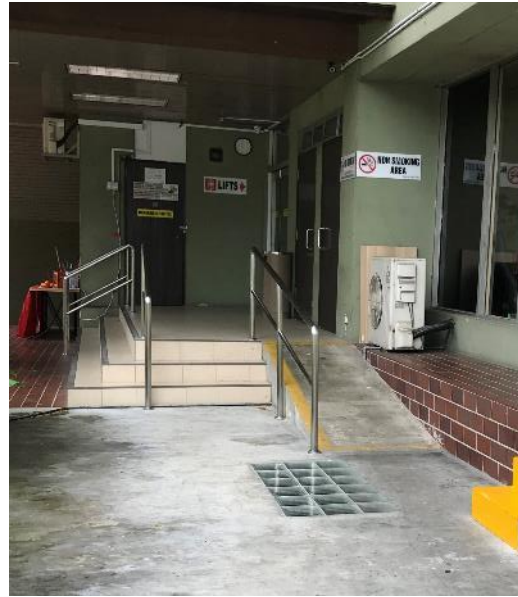


Building and Construction Authority

Non-Barrier-Free Pre-1990 Buildings (with steps at main entrance)



Non-Barrier-Free Pre-1990 Buildings (without accessible route/toilet)

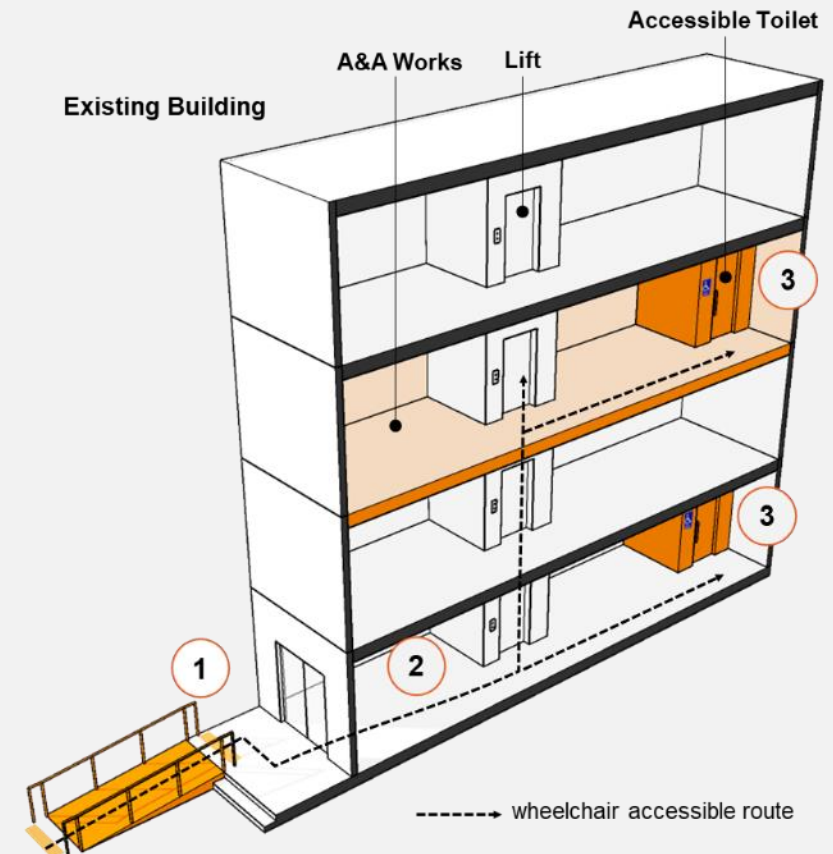


About the “Basic Accessibility” Legislation

- Amendments to Building Control Act was passed on 6 March 2020
 - Require non-BFA Commercial & Institutional buildings with GFA more than 500m² to provide with at least basic accessibility if any A/A works are carried out in any parts of the building
- Issue of circular and compliance booklet on 1 March 2023
- Effective **1 June 2023** for any A&A works submitted to BCA for approval
- Notice will be issued if the A&A works (i.e. trigger application) does not comply with basic accessibility requirements.

Basic accessibility features include:

- ① a wheelchair accessible entrance
- ② a wheelchair accessible route at the entrance level
- ③ a wheelchair accessible toilet at the entrance level or within the area of A&A works



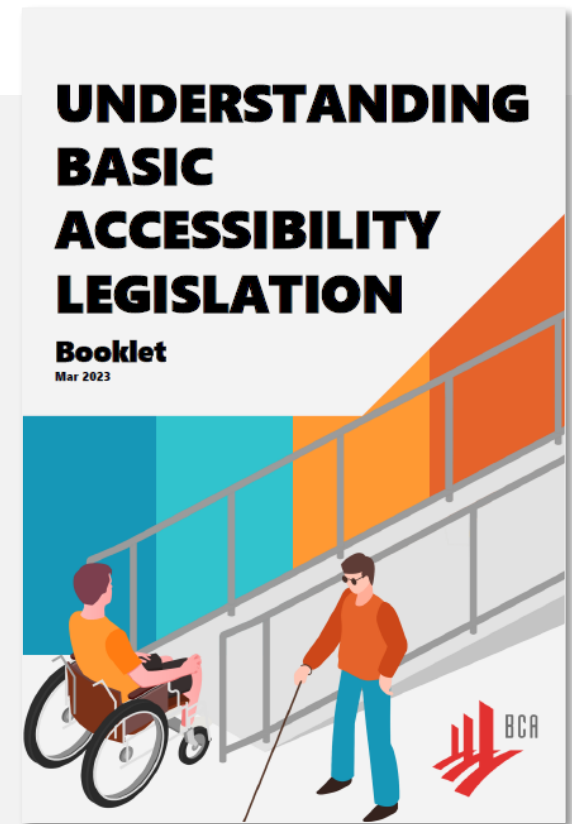
Example: Where A&A works are carried out at the 3rd storey of an existing building, basic accessibility features 1, 2 and 3 have to be provided.

Points to Note

- Waivers and modifications should not be sought as a means to circumvent the requirements to provide accessibility to buildings
- Seek consultation with BCA if there are exceptional technical constraints competing regulatory requirements, alternative solutions, etc

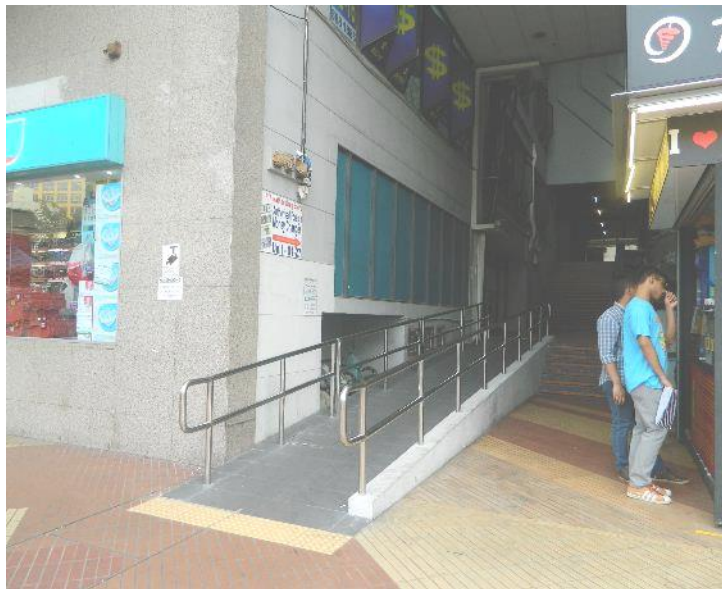
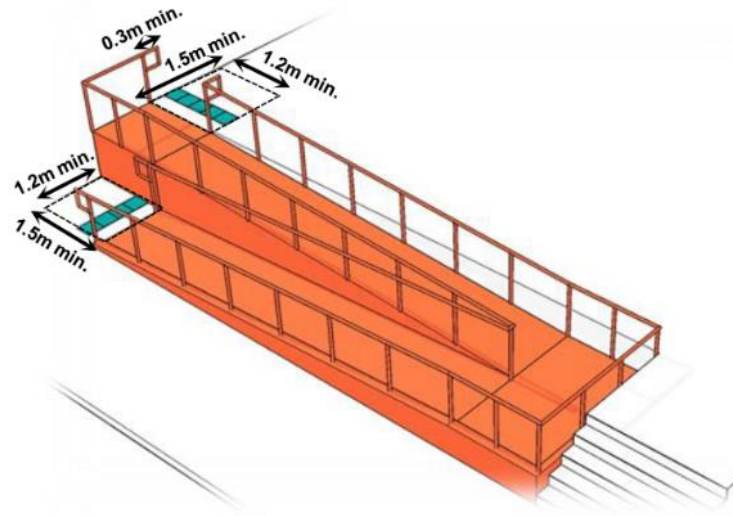
Publication

- Circular and Guidance Booklet on Understanding Basic Accessibility Legislation were released on 1 March 2023, to help building owners and industry practitioners with compliance



Examples of Accessible Features

Ramp



Examples of Accessible Features

Accessible Individual Washroom



Accessible Water Closet
Compartment within Toilet Cluster

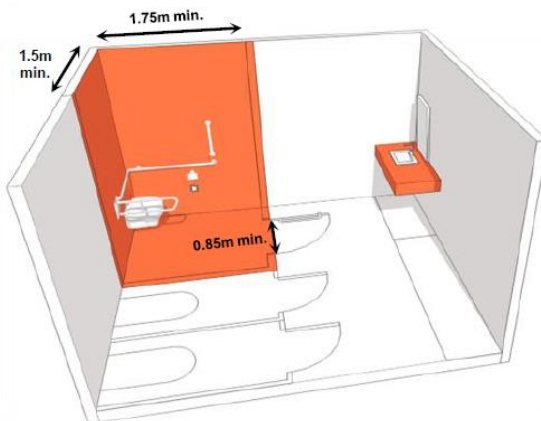
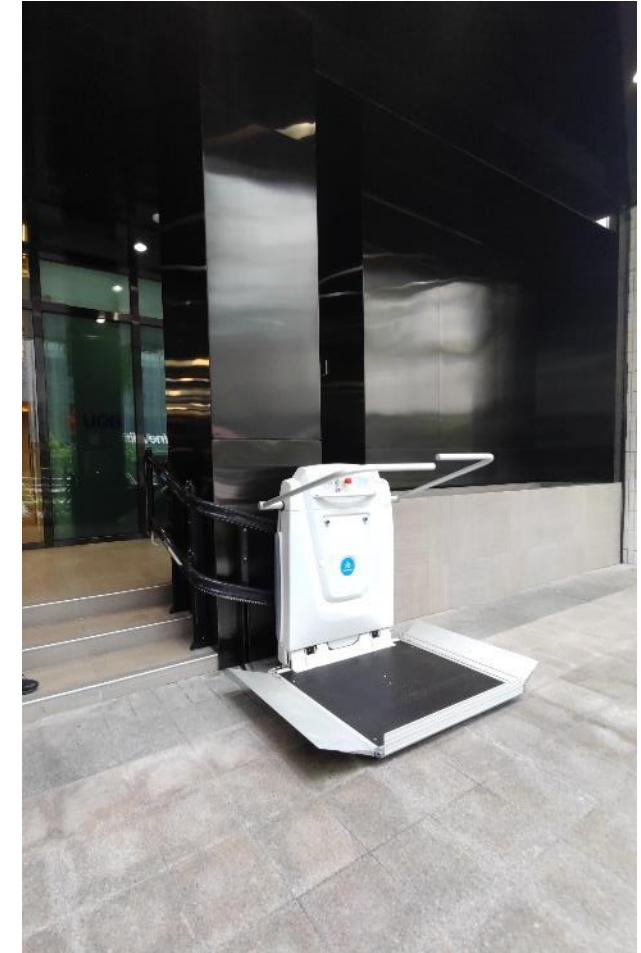
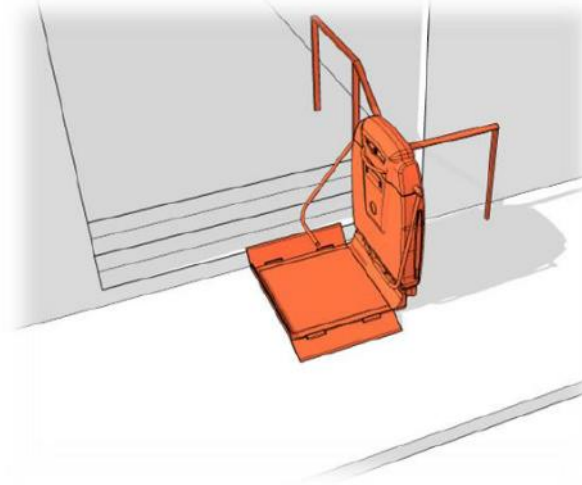


Diagram illustrating the dimensions for a wheelchair accessible ramp. The ramp structure is shown with a clear manoeuvring space at the bottom. Dimensions are indicated as follows:

- Overall width: 1.5m min.
- Clear width at the top: 0.9m min.
- Clear width at the bottom: 1.4m min.
- Clear height: 1.1m min.
- Clear manoeuvring space dimensions: 1.5m min. (width) and 1.5m min. (length).



Accessibility Fund



Enhanced Accessibility Fund

Capital Incentive for voluntary upgrading. Co-pay up to 80% of basic accessibility features and 60% of cost of Universal Design features.

Pre-1990 buildings

(without basic accessibility features)

- All pre-1990 buildings without accessibility are eligible EXCEPT Commercial and Institutional buildings that are subjected to the upcoming Basic Accessibility Legislation
- ***New – Option of one-time interim payment for accessibility upgrading projects with a minimum value of \$200,000 and involving lift installation works.**

NEW ENHANCEMENTS

Pre-2013 buildings

(up to Code 2013 implementation)

- ***New – Funding support for building owners to retrofit UD features in buildings that had already provide basic accessibility.**



Enhanced Accessibility Fund

For private buildings built before the implementation of **Code on Barrier-free Accessibility in Buildings 1990** capped at \$300,000

 up to **80%** co-funding for

Basic Accessibility Features:

- Accessible approach to building
- Ramps/lifts for improving accessibility at building's entrance level (typically first storey)
- Accessible toilet at building's entrance level
- Signage for finding way to building's accessibility features
- Lifts that are compliant with SS550 (up to \$200,000 per lift)



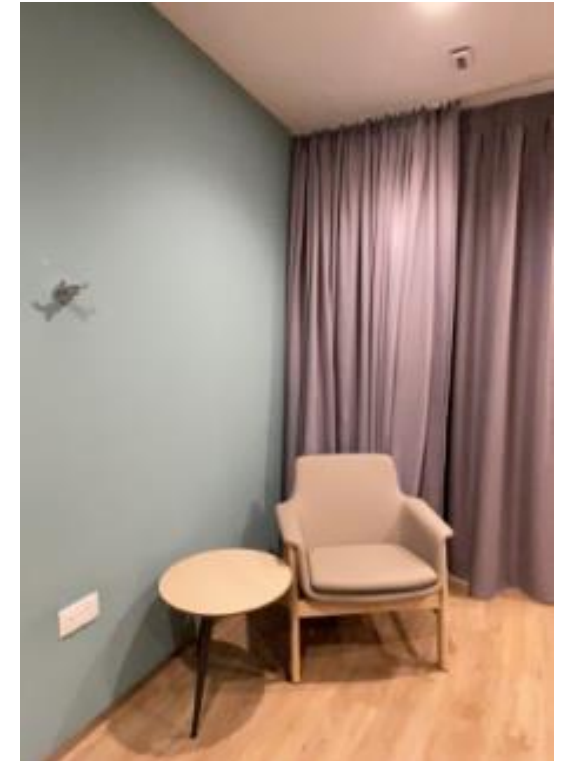
Enhanced Accessibility Fund

For private buildings built before the implementation of **Code on Accessibility in the Built Environment 2013** capped at \$100,000

 up to **60%** co-funding for

Other Accessibility Features:

- Urinal/water closet compartment for ambulant disabled and elderly
- Child-friendly water closet, urinal and wash basin
- Lactation room
- Diaper changing station
- Hearing enhancement system
- Braille and tactile features for vision impaired
- Family car park lot



Who* can apply:

- i. **Private building owners**
- ii. **Lessors** who have ownership rights to upgrade the private building
- iii. **Lessees** who can carry out the upgrading works with the approval of the private owners/lessors

***Not eligible for:**

- i. *Buildings undergoing major Additions and Alterations, which have to comply with the prevailing code, are not eligible*
- ii. *Government, any public authority, or any organization performing public function, is not allowed to apply for the Funding*



<https://go.gov.sg/bcaud-af>



<https://go.gov.sg/bcaud-af-faq>

Universal Design Index (UDi)



Recap on UDi



- An **index** to indicate the level of user-friendliness of buildings
- **Self-assessment** by QPs
- To be submitted with **every BP or TOP application** as per circular issued on 1 June 2022

<https://go.gov.sg/bca-circular-udi-framework>



Increase UD Awareness

- Encourage QPs and Developers to consider UD
- Self-help / guide / reference for QPs and Developers
- Check for **compliance with key requirements** in the Code on Accessibility



Grading Buildings

- Feedback on beyond-Code **level of user-friendliness**
- Provide benchmark for inclusive provisions
- Shortlist top-tier friendly buildings for recognition



Stocktake Inclusive Features

- Information for public. E.g. availability of accessible changing rooms

Shaping a More Inclusive Built Environment

>65%

of newly completed buildings have provided user-friendly features beyond minimum Code requirements

* Based on data contributed by projects applying for TOP between 1 September 2022 and 28 February 2023



Winners of UD Excellence Award



In Built Error Checks

Universal Design index

INSTRUCTIONS

Inputs are required within yellow coloured cells only.



PROJECT INFORMATION

Please fill in ALL fields below in yellow coloured cells

Project Reference Number	A9876-21711-2022
Description of Building Works	Proposed new 5 storey commercial building
Address of Building	546 Somerset Road
Postal Code(s) (to separate with commas)	589431
Development Name, if any (to indicate "Nil" if there is none)	
Total GFA (m ²)	5,843.80
Compliance with version of Code	Code on Accessibility in the Built Environment 2013
Declared information in this form applies to	Entire development (where there are multiple blocks)

Name of Developer Firm	Universal Development Pte Ltd
Name of Professional Firm	UD Architects
Name of Qualified Person	Ar. Tung U Dee

Development's UDindex Rating	-
	PLEASE CHECK YOUR INPUTS THROUGHOUT THE FORM

Part 1- ACCESSIBILITY AND UD PROVISIONS

	For Persons with Disabilities	For the Elderly	For Families with Young Children	For Expectant / Nursing Mothers
Total Points Scored	24	24	19	14

		Inputs	Max Points	Points Scored for Persons with Disabilities	Points Scored for Elderly	Points Scored for Families with Young Children	Points Scored for Expectant / Nursing Mothers
A	ACCESS			6	4	4	4
A.1	Accessible Pedestrian Entrances into the Building/Development						
A.1.1	Number of pedestrian entrances into building/development	1					
A.1.2	Number of accessible entrances into building/development	3					
	- Code compliant (min. 1)		2	0	0	0	0
	- More than 1 accessible entrance into building/development		1	0	0	0	0
	- More accessible (provided more than 1 entrance)		2	0	0	0	0
	- Sheltered accessible entrance from the external into building/development	1					
	- 1 sheltered accessible external route into building/development		1	1	1	1	1
	- More than 1 sheltered accessible external route into building/development		1	0	0	0	0

UDindex Rating will be shown if inputs are in order

Look out for errors highlighted in red text and correct them before submitting

Common Misunderstanding of Features

F.1 Larger Accessible Individual Washroom

- Must be at least 1.8m by 2.1m

F.2 Accessible Changing Room

- Refers to an accessible individual washroom with height adjustable changing bed for adults with disabilities
- Not a typical changing room for changing / trying of clothes

K.1.1 & K.1.5 Levelled Entrance / Entry

- Same FFL between common corridor, internal of residential unit and bathrooms
- No ramps, step



Building and Construction Authority

Guide to
Universal Design index



<https://go.gov.sg/bcaud-guides>

Count based on total numbers,
not by quantities per toilet cluster, per block etc.

Process and Online Resources

Where to obtain the UDi checklist

- Download from ESPRO folders (BP and TOP applications); or
- Download from BCA's website at <https://go.gov.sg/bcaudi>



For BP approval

- Submit completed UDi before application for BP approval
- Attach acknowledgement with BP application

To update
where
necessary

For TOP approval

- Submit updated UDi before application for TOP or direct CSC approval; or
- Confirm there are no changes to submitted UDi from BP

Submit
completed
UDi at



<https://go.gov.sg/bcaudi-sub>

**Applies to all BP and TOP / CSC applications,
regardless of when BP was first submitted to BCA**

Other Common Queries

How should the UDi checklist be filled in if we are applying for phased TOP?

If the provisions are already confirmed, we recommend to fill in UDi based on the overall provisions in the whole development before the application for the first-phase TOP to avoid having to refill in the UDi with each phase of TOP application.

For a mixed development with multiple typologies, e.g. residential towers with commercial podium and hawker centre, how many UDi checklist(s) need to be submitted?

The UDi is to be filled in on a development basis. Only 1 UDi checklist needs to be submitted for each development.

More FAQs can be found at
<https://go.gov.sg/bcaudi-faq>



Certification Course for Universal Design Assessor (Enhanced)



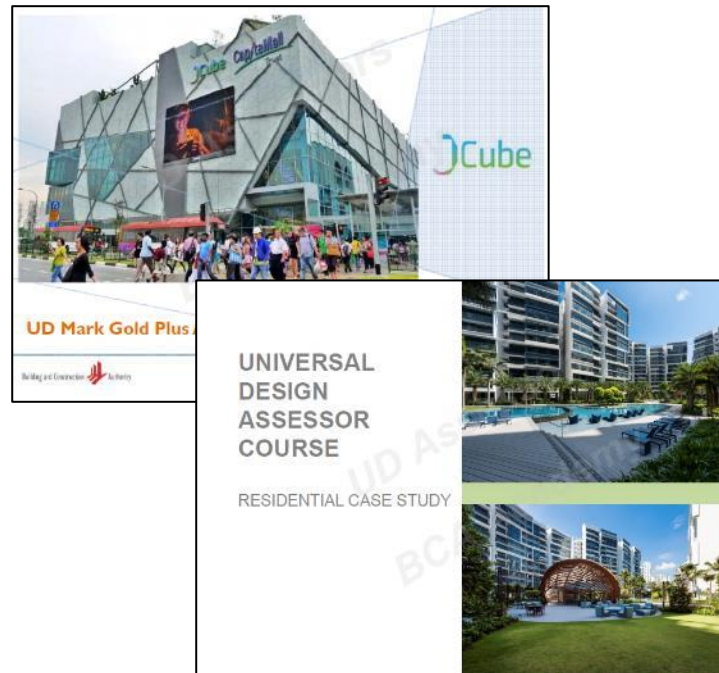
Started in 2011, objective of the Universal Design (UD) Assessor Course is to *raise awareness* and capability of the industry in applying the concept of Universal Design, so as to create an inclusive and age-friendly built environment for all ages.

19 runs

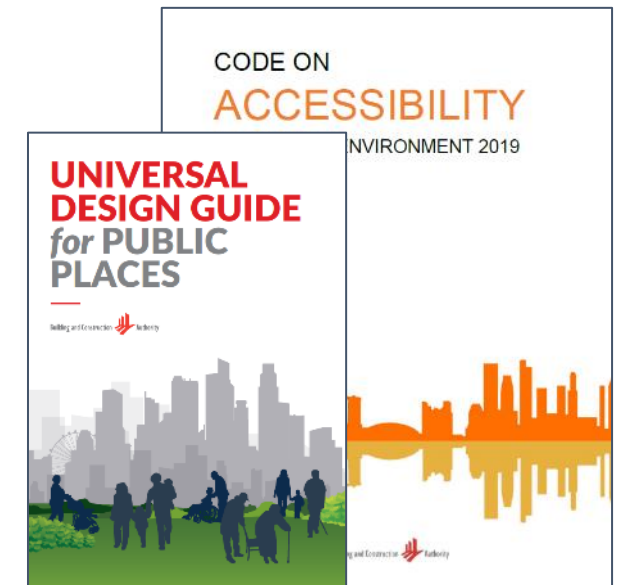
>600 trained



Immersive Learning



Sharing of UD projects



Rationale of the Code and the UD Guide explained

Certification Course for UD Assessor (Enhanced)

✓ **Revamped and enhanced:**

- Focus shifted beyond understanding disabilities, to encourage UD thinking through design considerations.

✓ **Expanded on the design considerations:**

- Address needs of elderly and children with disabilities,
- Address needs of persons living with dementia,
- Elaborate design considerations for persons with vision impairments.



Enhanced !

✓ **Practical applications:**

- Demonstrate use of new design tools like the Environment Audit Toolkits with site visits,
- Use of the UD Index (UDi) framework for design guidance and quick Code compliance checks

✓ **New 2-day Refresher Course:**

- Tailored for design professionals whom have attended the earlier runs

19 & 20, 27 &
28 June 2023

Refresher Course for Universal Design (UD) Assessors

NEWLY
ENHANCED

DETAILS

CLASSROOM

Date: 19 & 20, 27 & 28 Jun 2023

Time: 9.00am to 5.00pm

Venue: BCA Braddell Campus

COURSE ASSESSMENT

Date: 7 Jul 2023

Time: 1.30pm – 5.30pm

Platform: Virtual via Zoom

FEE (incl of GST): S\$1,700

CPD POINTS

BOA-SIA: Pending

PEB: Pending

TARGET AUDIENCE

Stakeholders of the built environment sector (Architects, Building Owners, Facility Managers, Project Managers, Town Council Executive, Academics, Interior Designers, Managing Agents, Contractors, Suppliers)

AWARD

e-Certificate of Successful Completion (e-CSC) will be awarded to participants who:

INTRODUCTION

Since 2011, the Certification Course for UD Assessors was launched to raise awareness and capability of the industry in applying the concept of Universal Design. With the latest updates in BCA Code on Accessibility in the Built Environment and the removal of UD Mark certification, the enhanced version is designed to reflect the shift in the focus of UD developments from creating barrier-free accessibility to creating an inclusive built environment. The 4-day programme aims to cover various aspects of adopting an Inclusive approach to design. The course will adopt a multidisciplinary approach, incorporating more hands-on sessions and practical examples on design considerations, to better illustrate the application of UD by industry practitioners and experts.

OBJECTIVES

- Understand the various end-users and their needs, including different groups of end-users (e.g. elderly, children with disabilities, etc.)
- Understand the use and application of new design tools such as the Environmental Audit Toolkit (EAT) and Universal Design index self-assessment framework
- Learn from industry best practices through project sharing from exemplary and award-winning UD case studies.
- Understand the latest updates to the BCA Code of Accessibility relating to elderly and family needs

LECTURERS

This course is developed jointly with BCA Universal Design Department and will be conducted by a diverse group of experienced UD practitioners/architects and experts from the relevant agencies, special education professors and access consultants.

APPLICATION FOR UD ASSESSORS REGISTRATION

Candidates must possess an architectural degree or a building related degree with at least 3 years of relevant experience, or 5 years for diploma holders. Course is recognised for training requirement of at least one professional under the Public Sector Panels of Consultants (PSPC) categories of AR01 & AR02 for Architectural firms and PM01 & PM02 for firms offering project management service.

For the specific criteria for listing on various PSPC disciplines and panels, kindly refer to <https://www1.bca.gov.sg/procurement/pre-tender-stage/>

Recognized for training requirement under the Public Sector Panels of Consultants

27 & 28
June 2023

BCA ACADEMY

Refresher Course for Universal Design (UD) Assessors

NEWLY
LAUNCHED

Newly launched course for past participants of Certification Course for UD Assessors to stay relevant with the latest UD developments



DETAILS

CLASSROOM

Date: 27 & 28 Jun 2023

Time: 9.00am to 5.00pm

Venue: BCA Braddell Campus

FEE (incl of GST): S\$750

CPD POINTS

BOA-SIA: Pending

PEB: Pending

INTRODUCTION

Since 2011, the Certification Course for UD Assessors was launched to raise awareness and capability of the industry in applying the concept of Universal Design. With the latest updates in BCA Code on Accessibility in the Built Environment and the removal of UD Mark certification, the refresher course is designed for past participants to be kept updated on the shift in the focus of UD developments from creating barrier-free accessibility to creating an inclusive built environment. The 2-day refresher programme aims to deepen capabilities of UD assessors to enhance infrastructure design with more age-inclusive design to better cater to the needs of a wider group of end-users. The course will adopt a multidisciplinary approach, incorporating more practical examples on design considerations, to better illustrate the application of UD by industry practitioners and experts.

OBJECTIVES

- Incorporate age-inclusive design considerations for different group of end-users and communities (including physically-challenged, elderly and children with disabilities, aging and dementia communities).
- Understand the use and application of new design tools such as the Environmental Audit Toolkit (EAT) and Universal Design index self-assessment framework
- Learn from industry best practices through project sharing from exemplary and award-winning UD case studies.
- Understand the latest updates to the BCA Code of Accessibility relating to elderly and family needs

LECTURERS

This course is developed jointly with BCA Universal Design Department and will be conducted by a diverse group of experienced UD practitioners/architects and experts from the relevant agencies, special education professors and access consultants.

AWARD

- e-Certificate of Successful Completion (e-CSC) will be awarded to participants who:
- Attain 75% of physical attendance
- Complete the in-class assignment

TARGET AUDIENCE

Past participants of previous runs of Certification Course of UD Assessors (Architects, Building Owners, Facility Managers, Project Managers, Town Council Executive, Academics, Interior Designers, Managing Agents, Contractors, Suppliers)

Certification Course for UD Assessor



Refresher Course for UD Assessor



Thank You



@BCASingapore

