

**SINGAPORE CIVIL DEFENCE FORCE
FIRE SAFETY & SHELTER DEPARTMENT
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President, Singapore Institute of Architects (SIA)
President, Institution of Engineers, Singapore (IES)
President, Association of Consulting Engineers, Singapore (ACES)
President, Real Estates Development Association of Singapore (REDAS)
Registrar, Board of Architects (BOA)
Registrar, Professional Engineers Board (PEB)

Dear Sir/Mdm,

PERMISSIBLE VARIATIONS FOR STOREY SHELTER (SS) TECHNICAL REQUIREMENTS

A review has been conducted by SCDF and BCA on the technical requirements for storey shelter, to establish permissible variations for SS technical requirements. Permissible variations are allowable alternative designs to compensate for shortfall in meeting SS technical requirements without compromising protective requirements. This is to allow for greater flexibility in the design of SS.

2 The permissible variations for SS technical requirements are stipulated in **Annex A**. Adoption of these permissible variations in accordance with the conditions for acceptance is deemed as compliance with the stipulated clauses of the SS technical requirements and hence, no waiver applications will be required in such cases.

3 The permissible variations shall take immediate effect. We would appreciate it if you could disseminate the contents of this circular to members of your Institution or Association.

A PROUD MEMBER OF THE HOME TEAM



4 Please contact undersigned at 68481470 or Maj Cheok Poh Chin at 68481406, should you require further clarifications.

Yours faithfully,

CPT LEE GEOK SENG RAYMOND
SSO SHELTER DEVELOPMENT
FOR COMMISSIONER, SINGAPORE CIVIL DEFENCE FORCE

cc

Members of FSSD Standing Committee

President, SISV

CEO, HDB
Attn: Mr Lau Joo Ming

CEO, URA

CEO, BCA
Attn: Deputy CEO (Building Control)
Director (Special Functions)
Deputy Director (CDSED)
Senior Executive Engineer (CDSED)



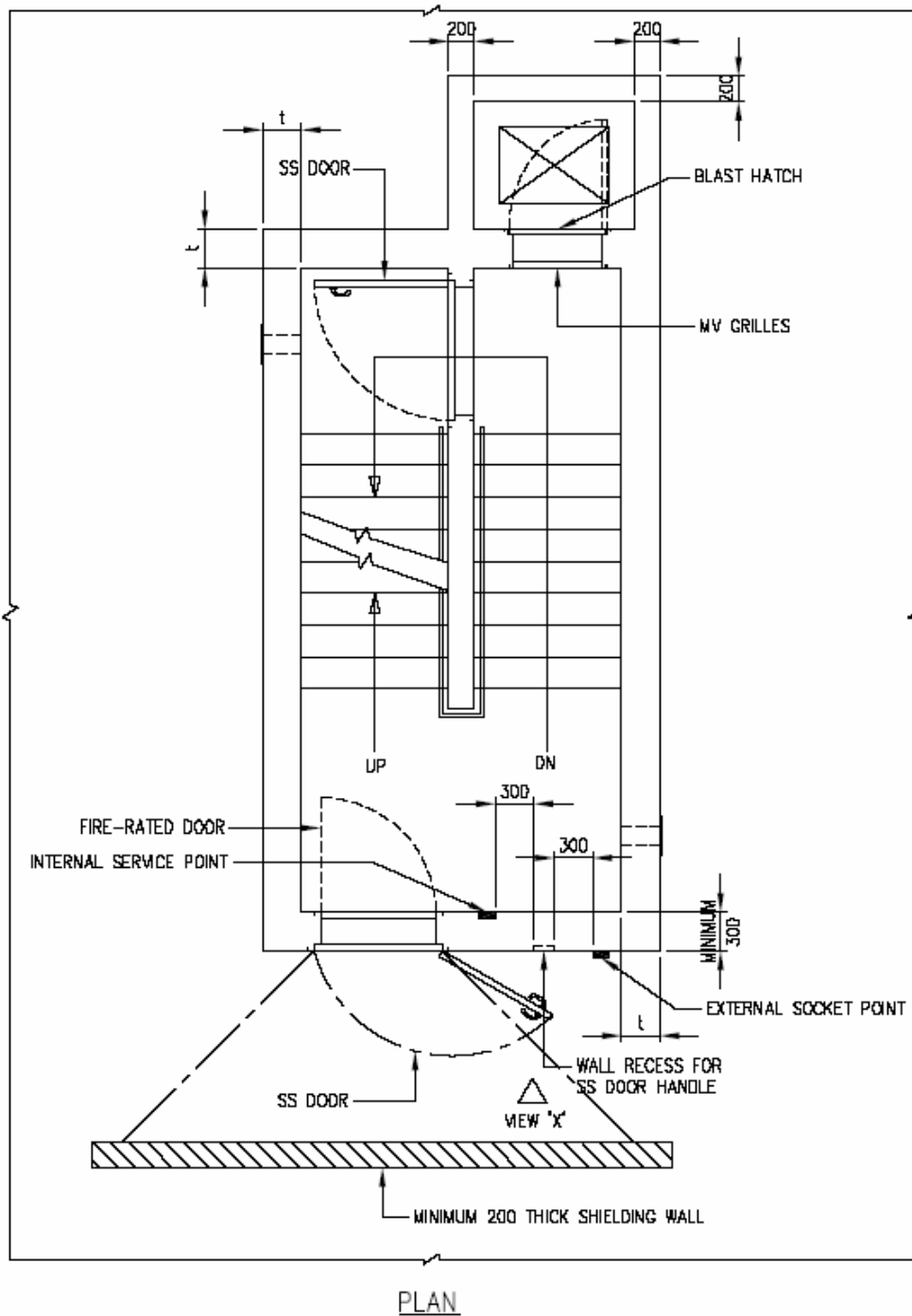
A PROUD MEMBER OF THE HOME TEAM



Permissible Variations To Storey Shelter Technical Requirements

S/No	Clause stipulated in Technical Requirements for SS 2006	Design Issue	Conditions for Acceptance
1	<p>Clause 3.5.4 Cast-In-Situ SS elements shall comply with the dimensions and detailed requirements as shown in Figure 3.5.4 (g).</p>	<p>To accommodate the protrusion of the SS door handle when the SS door is in fully opened position. This is to allow the SS door to be fully opened and in line with the SS wall.</p>	<ul style="list-style-type: none"> a. Provision of a 160 mm (length) x 80 mm (height) x 40 mm (depth) recess to accommodate the SS door handle for SS wall of minimum 300 mm in thickness. (See Figure 1a and Figure 1b). b. The spacing between the SS door handle recess and external socket point shall be at least 300mm apart. c. The spacing between the SS door handle recess and internal service point shall be at least 300 mm apart. d. No reinforcement bars would be exposed, so as not to affect the structural integrity of the affected SS wall.
2	<p>Clause 3.6.1 Where an SS or NS and lift core share a common wall, mounting of services on the lift core side of the SS wall shall be made of stainless steel material. For the purpose of installing M&E equipment within the lift core, all anchor bolts to be fixed onto this common wall shall be made of stainless steel and embedded up to a maximum penetration depth of 75 mm. They shall also be cast in place with the structural wall. The spacing of the anchor bolts, measured between their centerlines, shall not be less than 300 mm.</p>	<p>To accommodate the installation of M & E equipment within the lift core via anchor bolts to be fixed onto the common wall of the SS and lift core.</p>	<p>If non-cast in place method is to be used on this common wall for the installation of M & E equipment, then the thickness of the common wall shall be increased by 50mm.</p>

Permissible Variations To Storey Shelter Technical Requirements



SS CLEAR HEIGHT (Ht) (mm)	*SETBACK DISTANCE OF SS WALL (mm)	SS WALL THICKNESS (t) (mm)
2400 ≤ Ht ≤ 3400	< 6000	300
	≥ 6000	250
3400 < Ht ≤ 3900	< 6000	325
	≥ 6000	275

*SETBACK DISTANCES SHALL COMPLY WITH TABLES 2.3.3, 2.3.4(a) AND 2.3.4(b)

Figure 1a: Wall Recess For SS Door Handle

Permissible Variations To Storey Shelter Technical Requirements

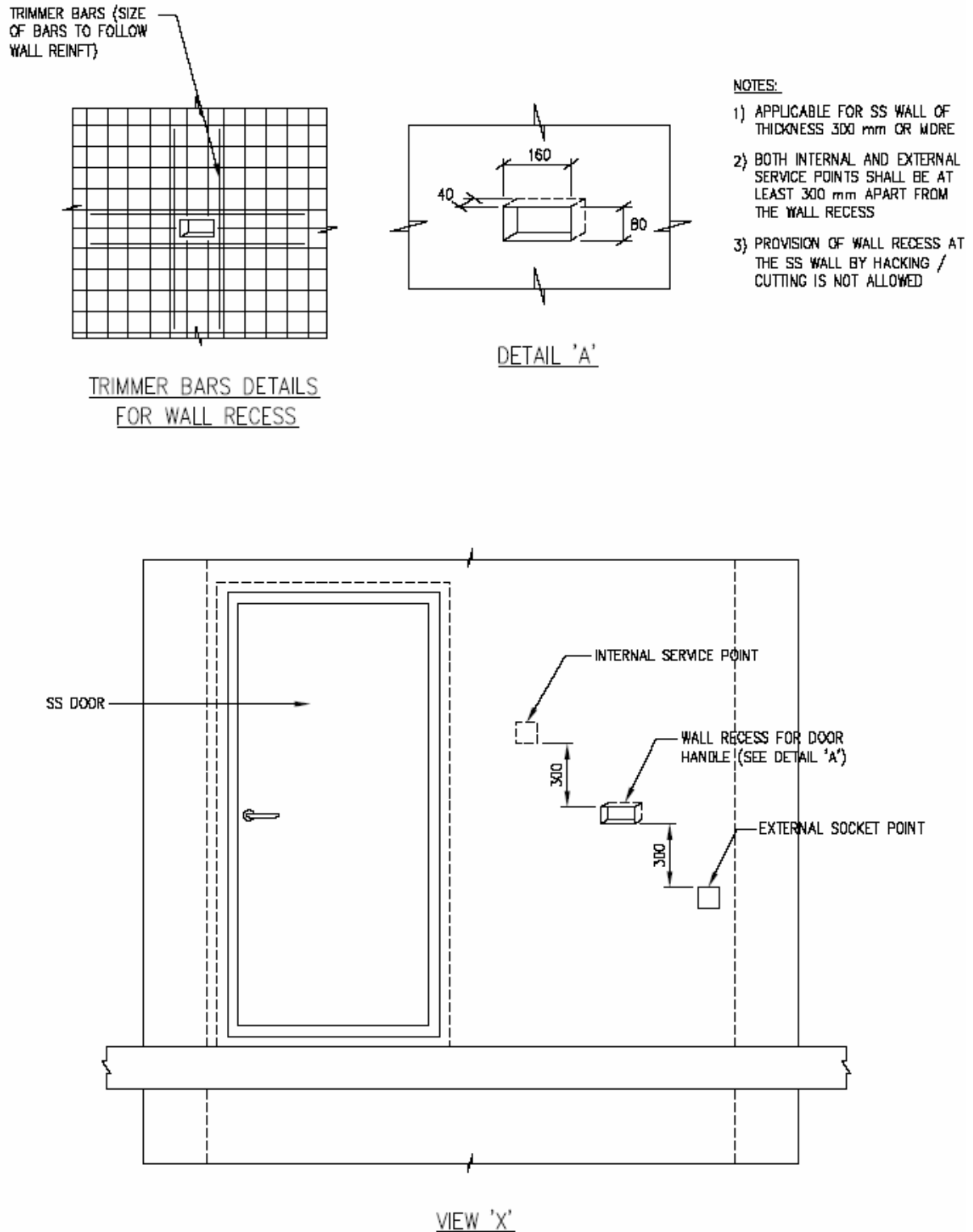


Figure 1b: Details of Wall Recess For SS Door Handle