Maintenance & Operation Requirements For Staircase Storey Shelters

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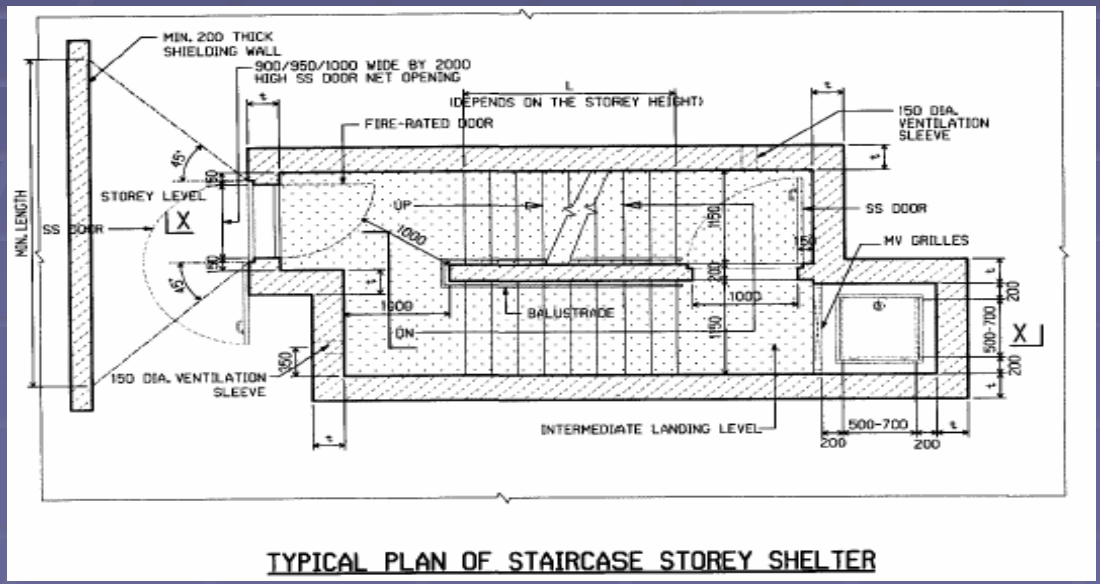
SCOPE

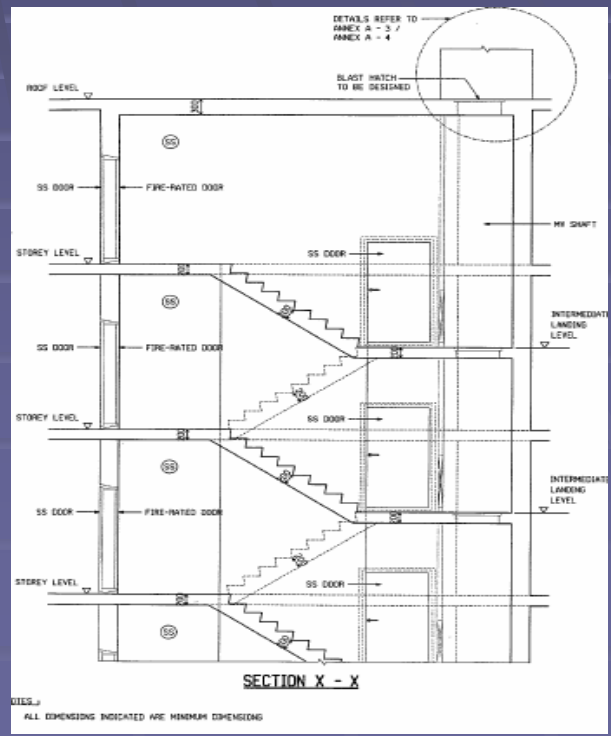
- Introduction
- Operation & Maintenance Manual
- Shelter Management Plan
- Shelter Conversion Guide
- Maintenance Requirements
- Implementation

INTRODUCTION

- Staircase Storey Shelter (SS) was implemented since July 2004 to allow exit staircases to be hardened as storey shelters.



TYPICAL PLAN OF STAIRCASE STOREY SHELTER



SECTION X - X

INTRODUCTION

- Under Civil Defence Shelter Act, building management/MCST of residential developments with staircase SS has :
  - **Responsibility for the maintenance and operation of the staircase SS**

INTRODUCTION

- **Role and responsibilities of building management/MCST :**
  - Formulating a **shelter management plan** for the staircase SS;
  - Implementing the **maintenance programme** for the staircase SS; and
  - **Educating residents** on the concept and use of shelter.

OPERATION & MAINTENANCE MANUAL

- Guidelines and requirements for the management and maintenance of staircase SS
- Content :
  1) Staircase SS design concept;
  2) Concept of management for staircase SS;
  3) Guidelines for shelter management plan; and
  4) Maintenance requirements.

OPERATION & MAINTENANCE MANUAL

☑ Chapter 1 : Introduction

- Background
- Staircase Storey Shelters
- Operation & Maintenance Requirements
- Inspection by SCDF



OPERATION & MAINTENANCE MANUAL

☑ Chapter 2: Management of Staircase SS

- ➲ Roles & Responsibilities of MCST
- ➲ Organisation Structure for shelter management



OPERATION & MAINTENANCE MANUAL

☑ Chapter 3: Shelter Management Plan

- What is Shelter Management Plan?
  - Measures and actions for maintenance and operation of the staircase SS
- Shelter Management Procedures
- Identification of Staircase SS compartments

SHELTER MANAGEMENT PLAN

- ☑ **Layout Plan and Contents**
  - Building plans including layout of staircase SS
- ☑ **Roles & Responsibilities**
  - Shelter management structure with appointment holders' names, contact and duties
- ☑ **Conversion Guide**
  - Procedures on conversion of staircase SS for emergency use

SHELTER MANAGEMENT PLAN

- ☑ **Staff Aids**
  - Shelter allocation plan, floor register, shelter occupation chart
- ☑ **Training Records**
  - Training and practice sessions for appointment holders and residents
- ☑ **Maintenance Records**
  - Maintenance schedules, inspection and service reports

SHELTER CONVERSION GUIDE

☑ Step 1

- **Uninstall and remove MV grilles from all SS compartments**





SHELTER CONVERSION GUIDE

☑ Step 2

- **Access, close and lock all horizontal or vertical blast hatches located in SS compartments**





SHELTER CONVERSION GUIDE

☑ Step 3

- **Close and seal fragmentation plates over the ventilation sleeve (VS) in SS compartments**



VS in Open Position



External Face of VS in Closed Position



Internal Face of VS in Closed Position

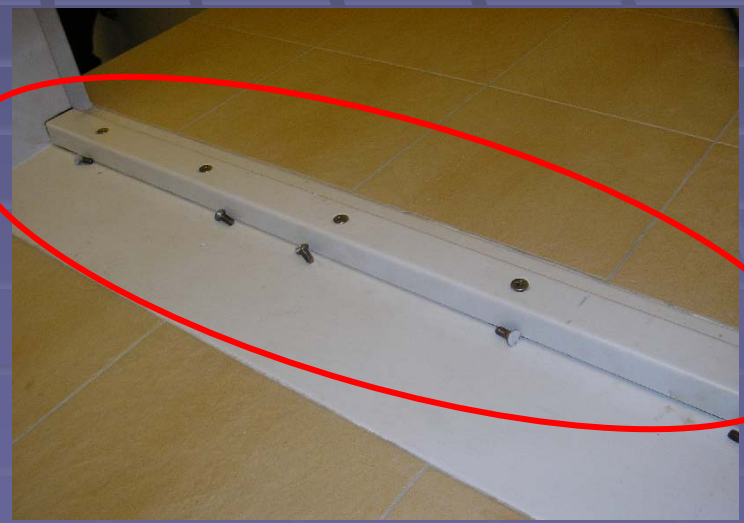
SHELTER CONVERSION GUIDE

☑Step 4

- **Remove door kerb from above SS door and install on the bottom edge of door frame**



Remove door kerb from above SS door



Install door kerb on bottom edge of SS door

SHELTER CONVERSION GUIDE

☑ Step 5

- **Close internal SS doors but leave SS entrance doors open**







SS door in closed position

SHELTER CONVERSION GUIDE

☑ Step 6

- **Set up telephone, TV or radio set in SS compartments.**



OPERATION & MAINTENANCE MANUAL

☑ Chapter 4: Maintenance Requirements

- Maintenance of Staircase SS
- Scope and Schedule of Works



MAINTENANCE REQUIREMENTS

- ☑ **RC walls, shielding walls, staircase flights, landings, roof slabs**
  - **Half yearly checks for :**
    - Cracks or seepage on structure
    - Signs of corrosion
    - Unauthorised openings
  - **Remedial works**



MAINTENANCE REQUIREMENTS

☑ Setback Provisions

- **Half yearly checks on :**
  - RC floor slabs, trellises and shielding elements
  - Unauthorised works that will affect setback provisions



MAINTENANCE REQUIREMENTS



☑ Entrance & Internal SS Doors

- **Half yearly checks and servicing to :**
  - Repair or replace damaged parts
  - Remove any rust and touch up with approved paint/coating
  - Check on condition of hinges and locking mechanism
  - Repair or replace damaged, loose or missing rubber seals



MAINTENANCE REQUIREMENTS

☑ Removal Door Kerb

- **Half yearly checks and servicing to :**
  - Repair or replace damaged parts
  - Remove any rust and touch up with approved paint/coating
  - Check on alignment of door kerb
  - Repair or replace damaged, loose or missing rubber seals



MAINTENANCE REQUIREMENTS

Mechanical Ventilation Blast Hatches



- **Half yearly checks and servicing to :**
  - Repair or replace damaged parts
  - Remove any rust and touch up with approved paint/coating
  - Check on condition of hinges, opening/closing
  - Repair or replace damaged, loose or missing rubber seals
  - Clean and grease the lock set



MAINTENANCE REQUIREMENTS

☑ Ventilation Sleeves



- **Half yearly checks and servicing to :**
  - Repair or replace damaged parts
  - Remove any rust and touch up with approved paint/coating
  - Check on condition of bolts, threaded holes, closing of fragmentation plates
  - Repair or replace damaged/missing bolts
  - Check on space clearance - 350mm

MAINTENANCE REQUIREMENTS

☑ Electrical & Communication Fixtures

- **Half yearly checks for :**
  - **Proper operation of electrical fixtures - lightings, power points, TV/radio sockets**
- **Rectify or replace where necessary**



IMPLEMENTATION

- Building management/MCST implement maintenance for Staircase SS and formulate Shelter Management Plan.

- Operation & Maintenance manual available at SCDF website www.scdf.gov.sg.

- Building management/MCST may seek consultation with FSSD.

Thank you

