COMMON NON-COMPLIANCES FOUND DURING TFP/FSC CHECKS

MAJ Winson Cheung
Head Permit & Certification
Fire Safety & Shelter Department
Singapore Civil Defence Force

INTRODUCTION

- Complaints
- Enforcement
- Spot checks
- Plan Audit
- Processing TFP/FSC application

How non-compliances be uncovered ?

SCOPE OF PRESENTATION

- **Introduction**
- **Common Non-Compliances**
  - **LPG Manifold Systems**
  - **Temporary Structures**
  - **Addition / Alteration Works**
  - **Others**
- **Conclusion**

LPG MANIFOLD SYSTEM

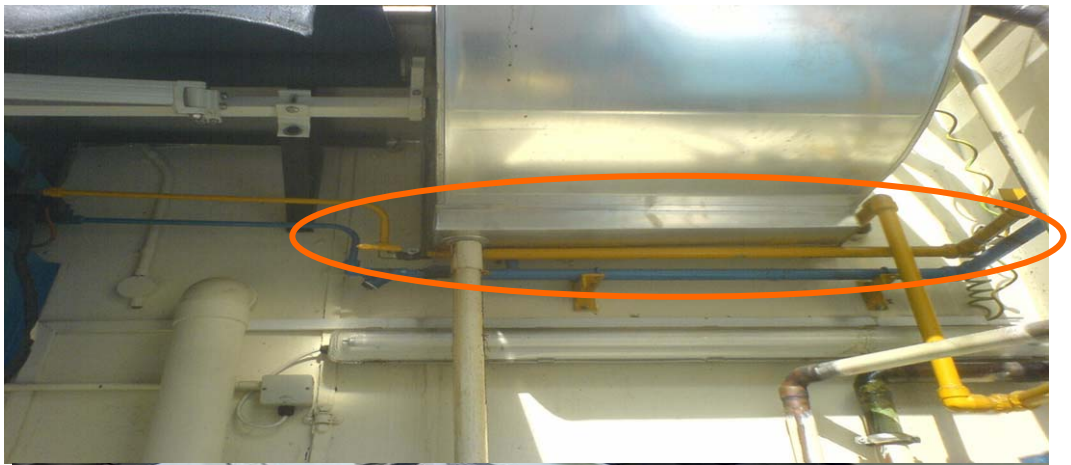
- **Appendix M – Outdoor / Indoor LPG cylinder installations**
- **NFPA 54 and NFPA 58**
- **The emergency shut-off valve and extinguisher**



- **3m from the LPG cabinet (0.5 m at site)**

LPG MANIFOLD SYSTEM

- **LPG manifold (liquid & vapor pipings) underneath the mechanical intake duct**



Exhaust duct less than 1.5 metres



The vaporiser (with the liquid pipe line) installed less than 1.8m above ground

LPG MANIFOLD SYSTEM





Vaporiser inside building

LPG MANIFOLD SYSTEM





The cylinders located less than 1.5m from any openings

ESV box installed on LPG cabinet

LPG MANIFOLD SYSTEM

– **The location of LPG installation beside the fire hydrant.**



10 m distance



LPG CHECKLIST

http://www.scdf.gov.sg/downloads/FS_Licensing/lpg.doc

Areas of Check
Ignition source should be 3m from installation or provide FR wall
Distance between 2 manifold system: must be 3m or provide 2hr FR wall
LPG must be 3m away if there is only 1 exit and 1.5m away if more than 1 exit otherwise to provide 2hr FR wall
Fire stopped (2hr fire resistance) for any pipe penetration on walls
No unprotected openings within 1.5 m measure horizontally (eg windows, doors, air vents, balanced-flue outlets etc) for building with more than 1 exit



LPG CHECKLIST

http://www.scdf.gov.sg/downloads/FS_Licensing/lpg.doc

Areas of Check
Fire Extinguisher (9kg) mounted on wall : 3m from LPG, store in proper cabinet
LPG cabinet has caution label (SS586), 3m away from fire engine access
LPG storage should be at least 10 m away from Fire Hydrant





COMMON NON-COMPLIANCES

- **LPG Manifold Systems**
- **Temporary Structures**
- **Addition / Alteration Works**
- **Others**

TEMPORARY STRUCTURE

Feedback

- **QP sees that contractors build and comply with fire safety requirements, apply TFP/FSC ?**

ANS : YES

- **RI to inspect, verify waiver if any, point out irregularities and not to commit the issuance of form 1 or 2 ?**

TEMPORARY STRUCTURE



- Expired extinguishers

- Waiver issues on setback requirement and fire rated roofing materials

TEMPORARY STRUCTURE





Findings:

- Plans approved, no TFP/FSC, expired extinguisher found

- But business as usual

- No RI certification



COMMON NON-COMPLIANCES

- **LPG Manifold Systems**
- **Temporary Structures**
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- **Others**

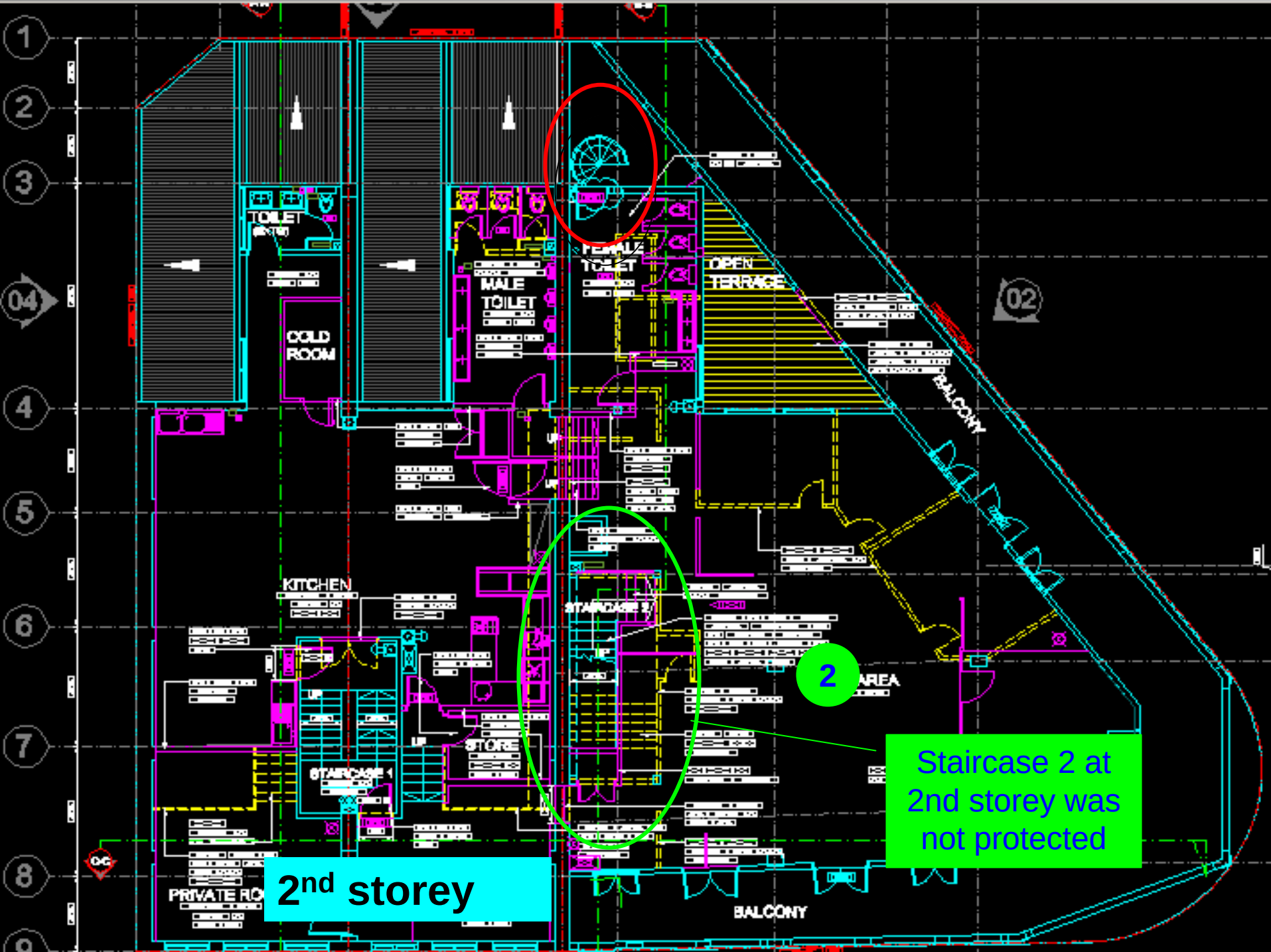
ADDITION / ALTERATION CASE

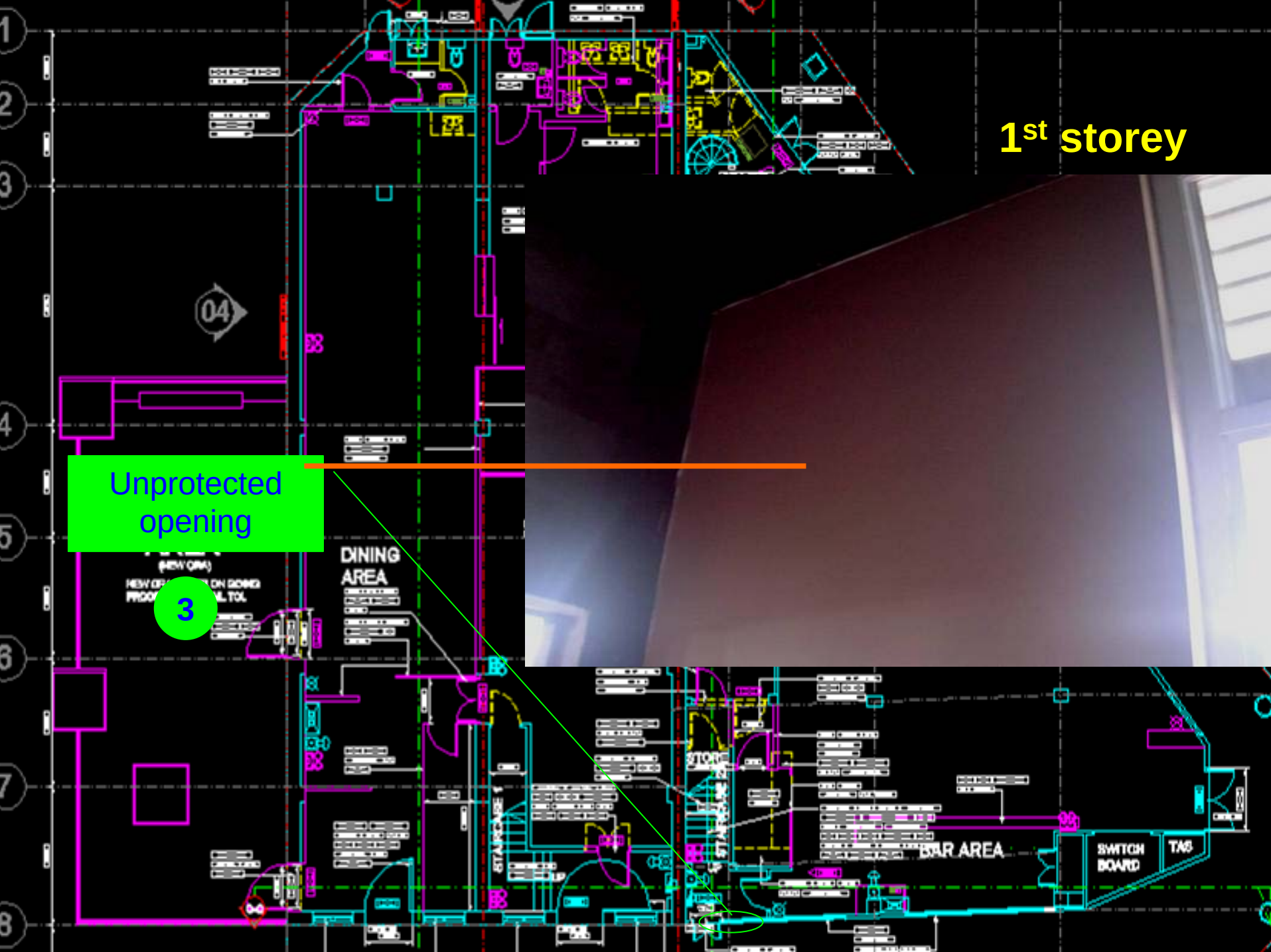
- **Proposed A & A to few units of a restored conservation building**

- **TFP application received in Oct 2008**

- **RI (Arch) had issued the Inspection Certificate Form 2 :**
  - **To install permanent signages for fire alarm panel prior to FSC application**


2nd storey
TOILET
COLD ROOM
MALE TOILET
FEMALE TOILET
OPEN TERRACE
BALCONY
10m
KITCHEN
DINING AREA
STORE
STAIRCASE 1
PRIVATE ROO
ALCONY
1
The overall diagonal distance was 33.2m


TOILET
COLD ROOM
MALE TOILET
FEMALE TOILET
OPEN TERRACE
BALCONY
KITCHEN
STAIRCASE 2
STORE
STAIRCASE 1
2
Staircase 2 at 2nd storey was not protected
2nd storey
BALCONY


1st storey
Unprotected opening
3
DINING AREA
BAR AREA
SWITCH BOARD
TAB

ADDITION / ALTERATION CASE



- **Unit with glass door located at fire lift lobby**
- **BP approval obtained**
- **RI issued form 1 despite that waiver on provision of fire rated glass door disapproved**

ADDITION / ALTERATION CASE

- **Wrong location of exit sign**



- **Fire door without door closer**



- **Faulty e-lights**



OTHER NON-COMPLIANCES

Serious non-compliances within a same case, a 6-storey commercial building

- **Dry riser not provided**
- **Automatic alarm system not provided**
- **Smoke-stop lobby not provided**
- **2 independent exit staircases not provided**

Non-Compliances to Relevant Clause

- **Clause 6.2.1 - Dry rising main shall be installed in buildings where the habitable height is more than 10m, but does not exceed 60m.**

- **Table 6.3A - Building of more than 4 storeys shall be provided with automatic alarm system.**

Non-Compliances to Relevant Clause

- **Clause 2.2.13 - Entry at every storey level to an exit staircase of any building or part of a building of more than four storeys above ground level shall be through a smoke-stop lobby.**

- **Clause 2.2.11 - There shall be at least 2 independent exit staircases or other exits from every storey of a building, unless otherwise permitted under other subsequent provisions of the code.**

OTHER NON-COMPLIANCES

- Unsatisfactory smoke purging systems found in basement carpark



OTHER NON-COMPLIANCES

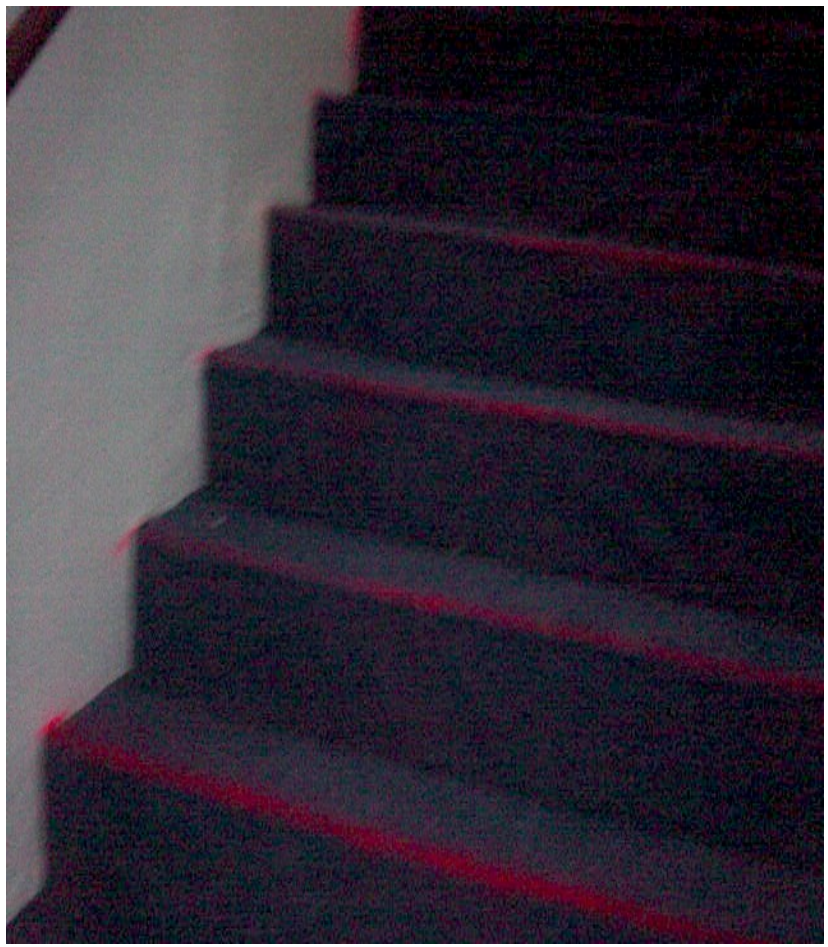
Glass door installed at exit staircase, not fire rated and no waiver being sought



OTHER NON-COMPLIANCES

Protected passageway or exit staircase having combustible material





OTHER NON-COMPLIANCES

- **Sprinkler bell (gong), not working upon activation of sprinklers**





OTHER NON-COMPLIANCES

- **Temporary signages not change to permanent one**



- **Opening at the compartment slab floor**



OTHER NON-COMPLIANCES

-Faulty automatic fire alarm system, signal transmission, LED lights, zone diagrams not tally







OTHER NON-COMPLIANCES



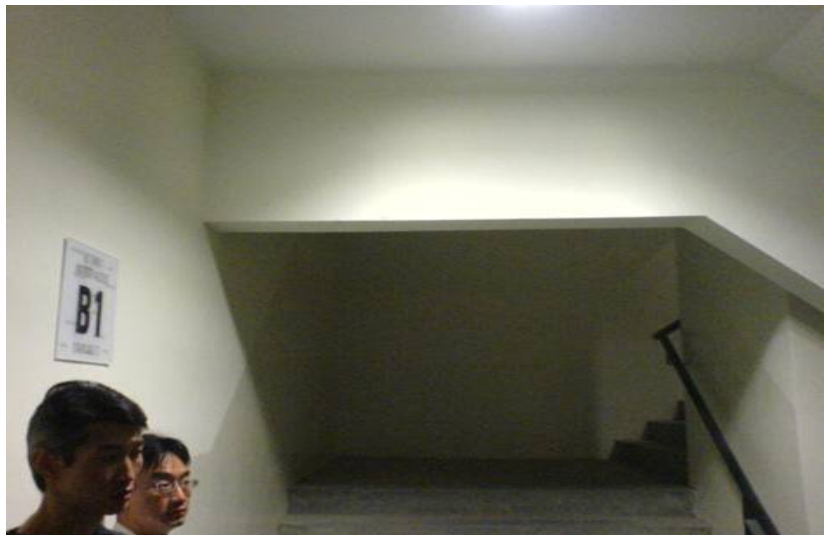
–**Absence / insufficient of directional exit signs**



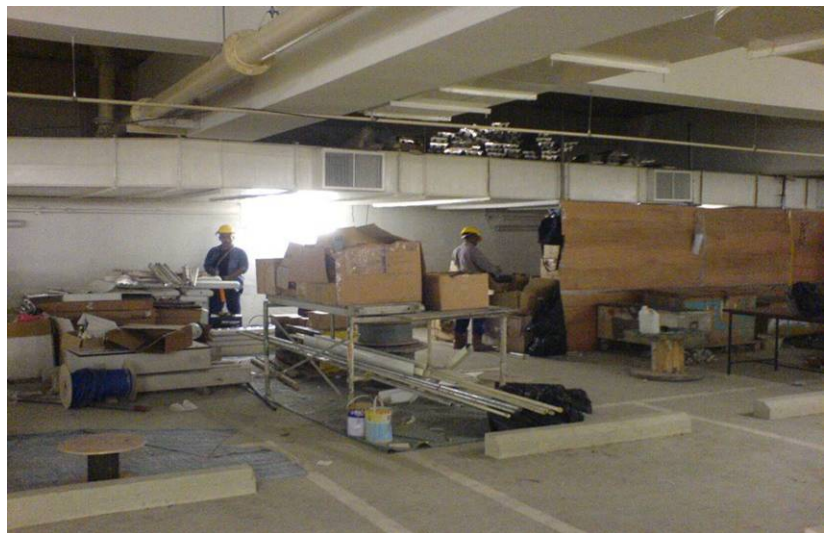
– **Fire extinguishers not unwrap, not hung**

OTHER NON-COMPLIANCES

Absent of exit sign



Fire hazards not removed after building completion



CONCLUSION

- **QPs and RIs to clarify technical issues, fire code clauses if in doubt**
- **QPs and RIs are to work very closely when conducting certification checks at site**
- **Prevent unsafe buildings coming into use**






Thank You


END