



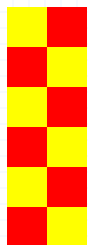
# SCDF

The Life Saving Force

*... for a safer Singapore*

## FSM Seminar 2024 -

# Common Fire Safety Enforcement Findings



**CPT Ling Hsieh Hwa**

Staff Officer, Enforcement Branch

Fire Safety Department

Singapore Civil Defence Force



# Scope

- Introduction
- Enforcement Workflow
- Common Fire Hazards & Fire Safety Offences
- Managing Fire Safety using Technology
- Conclusion



# Introduction

- **SCDF regulates fire safety to attain a fire-safe built environment by:**
  - ✓ Formulating fire safety policies – E.g. Fire Safety Act (FSA), Code of Practice for Fire Precautions in Buildings (Fire Code)
  - ✓ Implementing fire safety requirements – E.g. Fire Safety Certificate (FSC), Petroleum and Flammable Materials License (P&FM), Temporary Permit
  - ✓ Partnering the industry players to improve on regulatory systems – E.g. Fire Safety Managers (FSM), Building Owners
  - ✓ Maintaining an effective regulatory regime – E.g. Regular Inspections, Enforcement Actions



# Regulatory Regime

- **To create a fire-safe environment by enforcing the FSA and achieved through:**
  - ✓ Scheduled fire safety enforcement checks
  - ✓ Responding to public feedbacks
  - ✓ Concerted joint efforts by SCDF and building managements / owners / FSMs / CERTs





THE STATUTES OF THE REPUBLIC OF SINGAPORE

FIRE SAFETY ACT

(CHAPTER 109A)

(Original Enactment: Act 39 of 1993)

# Enforcement Action

REVISED EDITION 2000

(30th December 2000)

*Prepared and Published by*

THE LAW REVISION COMMISSION

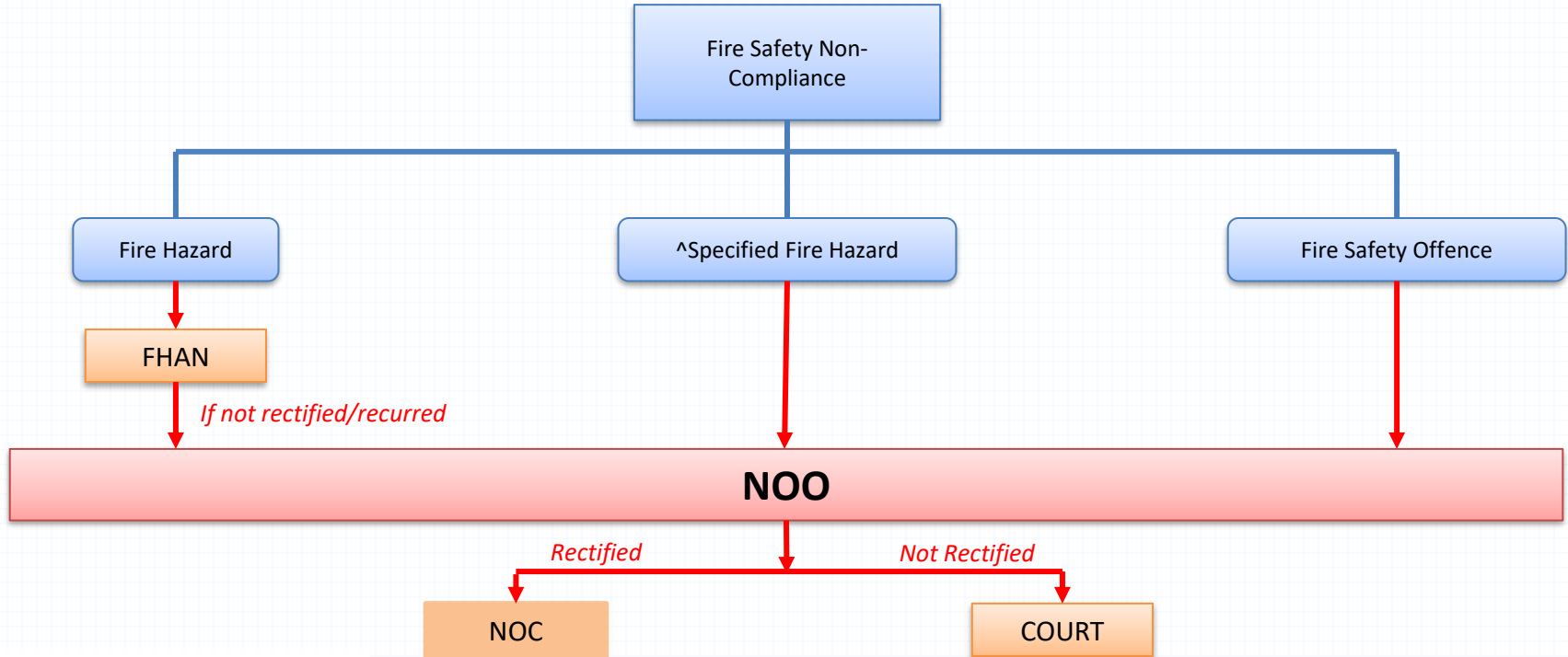
UNDER THE AUTHORITY OF

THE REVISED EDITION OF THE LAWS ACT (CHAPTER 275)

Informal Consolidation – version in force from 1/9/2013



# Enforcement Framework



**FHAN:** Fire Hazard Abatement Notice

**NOO:** Notice of Offence

**NOC:** Notice of Composition

*^ such as*

- (i) Overcrowding*
- (ii) Fire safety measures not in order*
- (iii) Obstruction to escape route*



# Common Fire Hazards



# Fire Hazards

- Any matter or circumstances which materially increase the likelihood of fire or the danger to life or property that would result from the outbreak of fire which includes:
  - ✓ Obstruction to means of escape
  - ✓ Obstruction to fire safety measures
  - ✓ Non-maintenance of fire safety measures
  - ✓ Storage/placement of combustible material
  - ✓ Missing/removal of fire safety measures

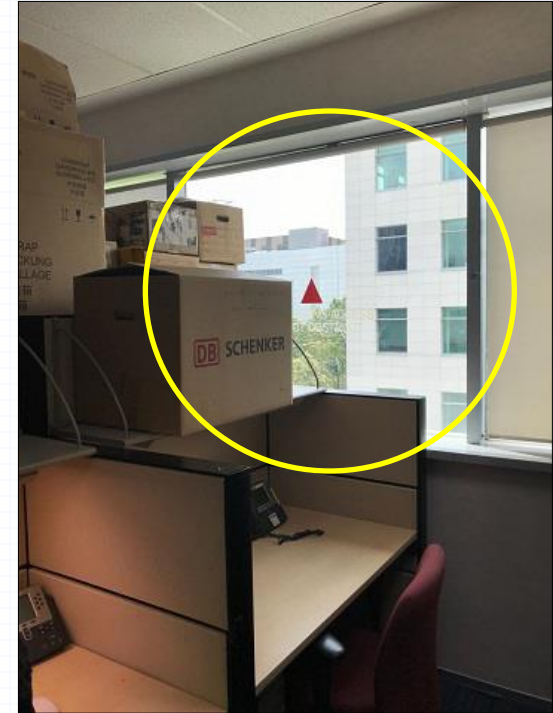




# Obstruction along Means of Escape



# Obstruction to Fire Safety Measures



# Obstruction to Fire Engine Access/Accessway

Before





# Obstruction to Fire Engine Access/Accessway

After



# Fire Safety Measures Not in Proper Working Order



# Common Fire Safety Offences

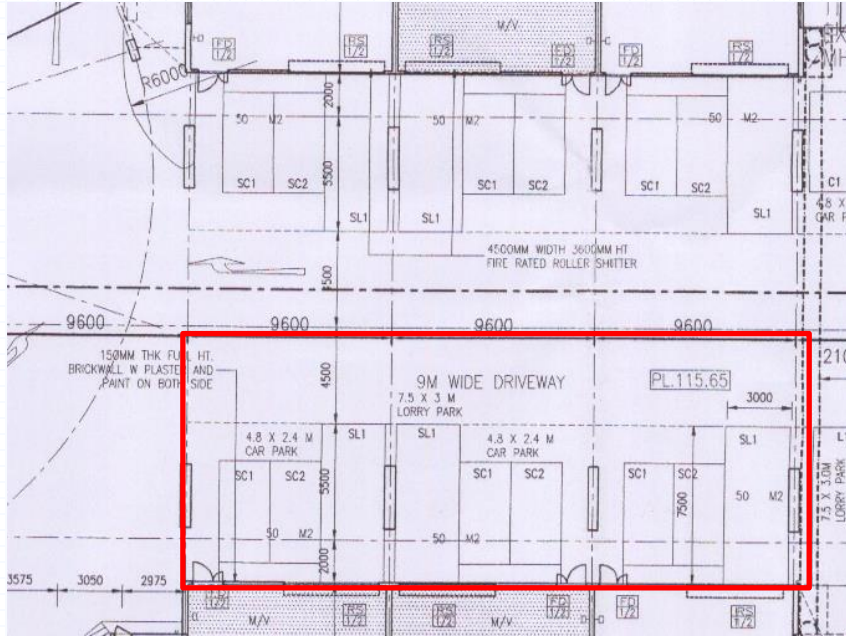


# Fire Safety Offence

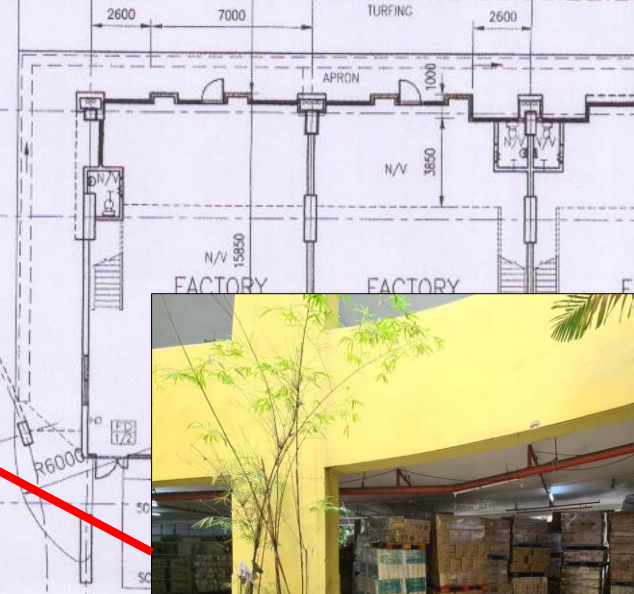
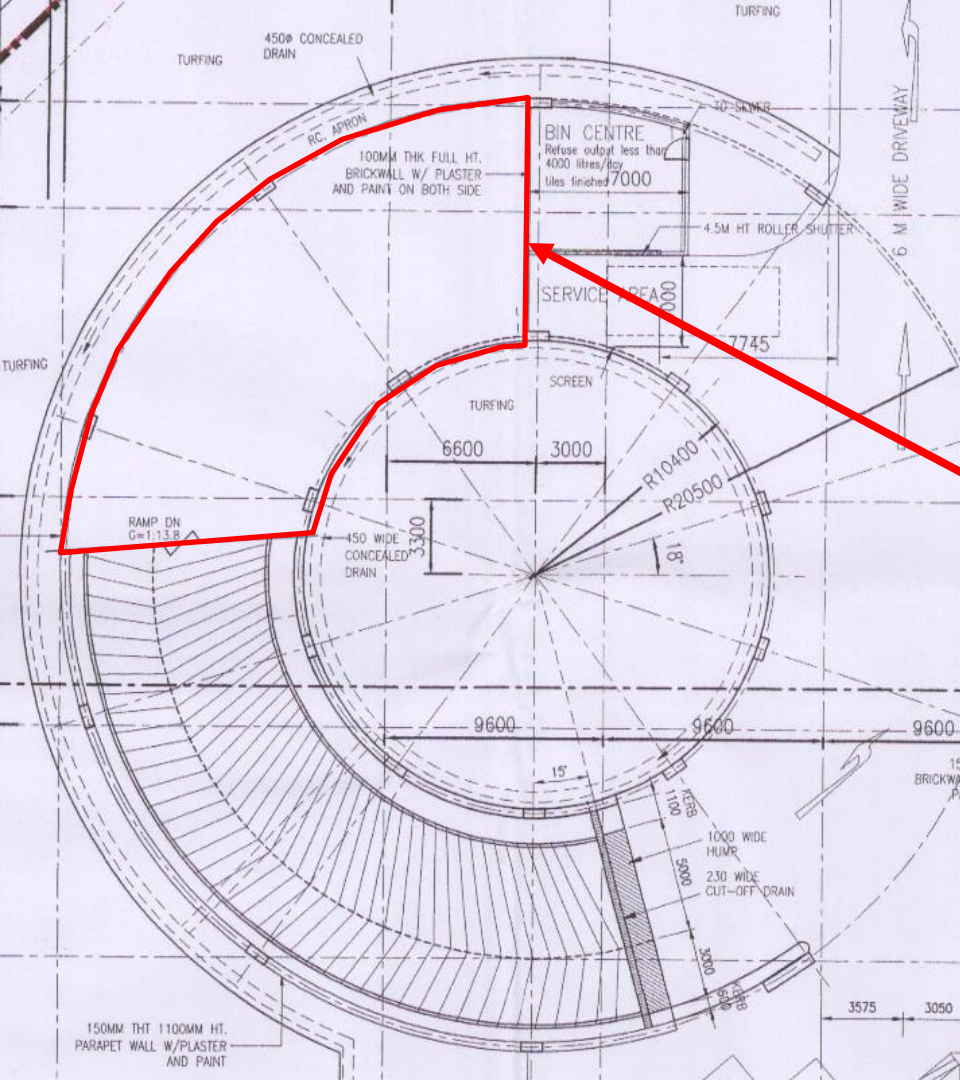
- Contravention to requirements in Fire Safety Act and its regulations such as:
  - ✓ Change of use of premises
  - ✓ Carrying out fire safety works without approval of plans
  - ✓ Storage of Petroleum and Flammable Material (P&FM) without a valid storage license

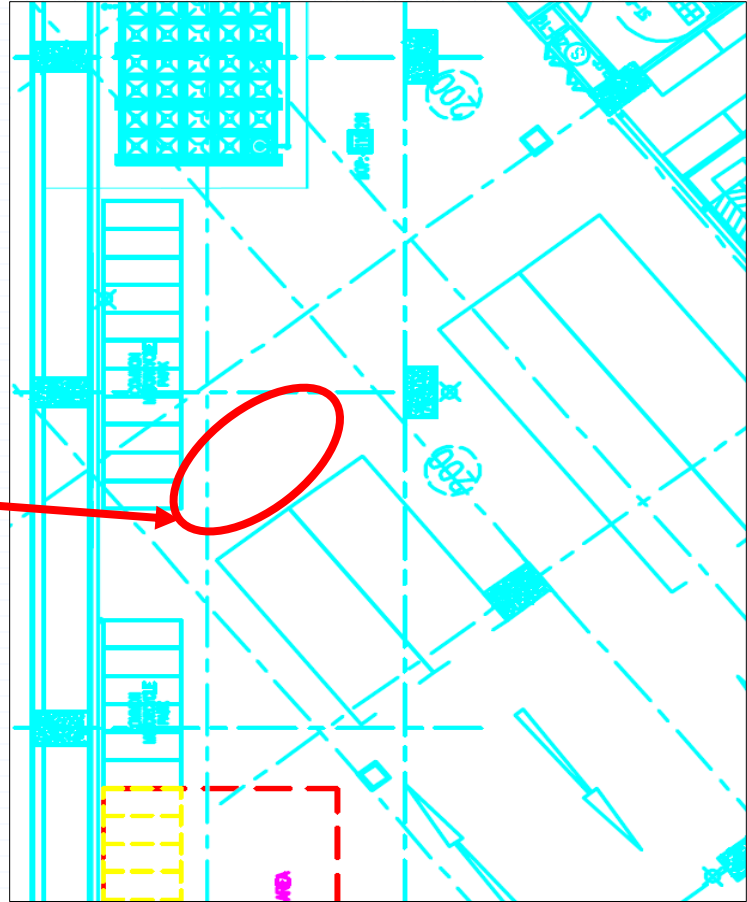
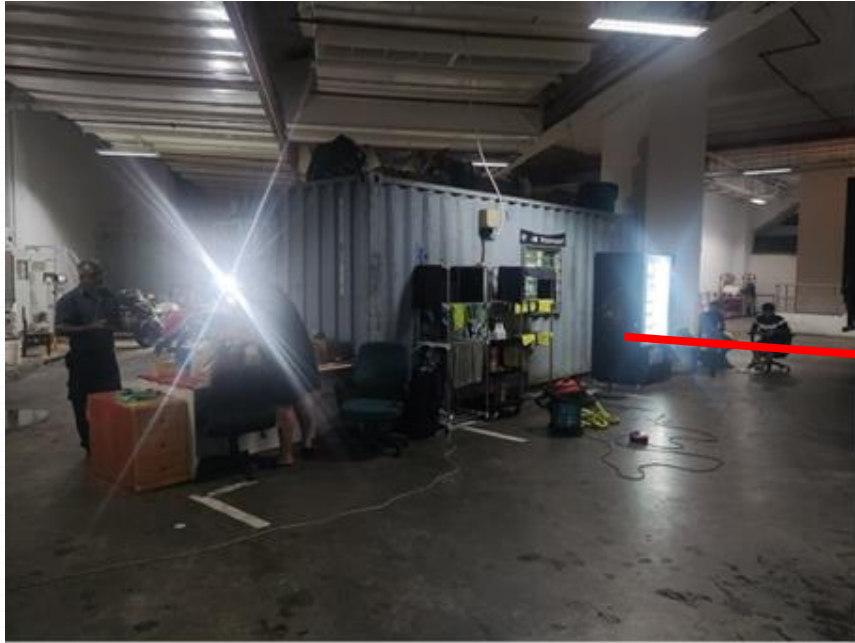


# Unauthorised Change of Use









# Unauthorised Change of Use to Rest Area



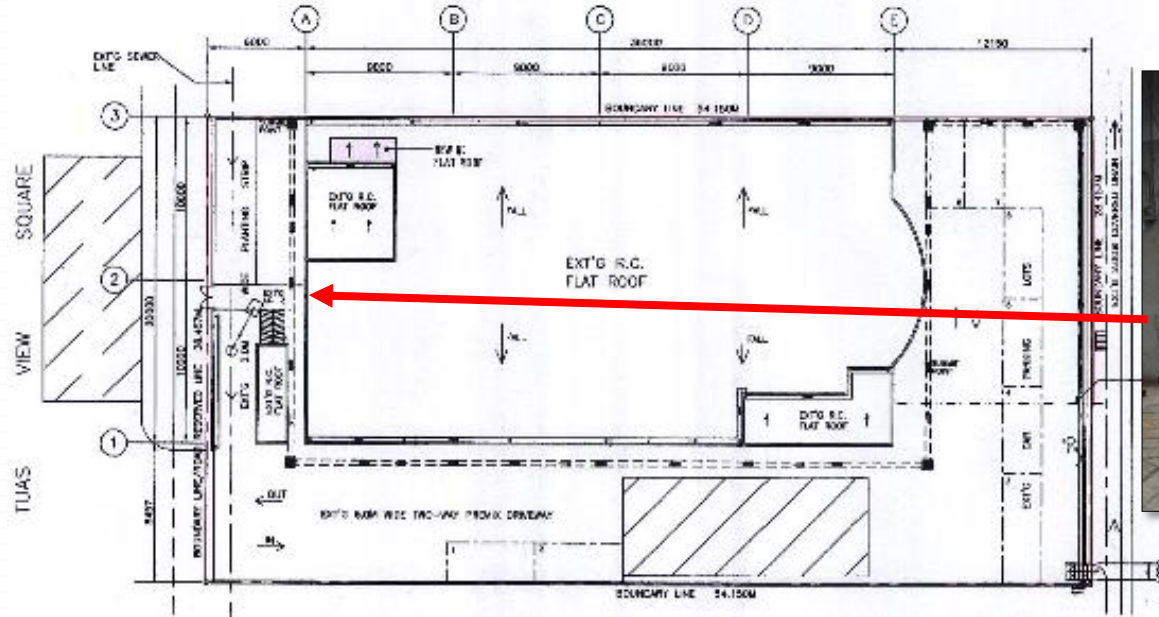


# Unauthorised Fire Safety Works

Fire Safety Works (partition and mezzanine floor) without approval of plan



# Unauthorised Fire Safety Works



# Unauthorised Fire Safety Works

Fire Safety Works (LPG manifold system) without approval of plan



# Unauthorised Fire Safety Works

Fire Safety Works (kitchen exhaust duct) without approval of plan



# Storage of P&FM Without a Valid Storage Licence

- All storage of P&FM (Petroleum and Flammable Material), regardless of quantity stored, have to comply with the fire safety requirements.
- All storage of P&FM must be indicated in building plans submitted to SCDF for approval.
- Storage licence is required if the quantity stored is above the exemption quantity.

## P&FM Mixtures

Mixed storage or keeping of any petroleum and flammable material, or more than one flammable material, in separate containers or compartments within any premises shall be exempted from the requirement of a licence if:

i. Where all the substances are solids, their aggregate weight does not exceed 20 kg;

- Eg. If you store several kinds of petroleum/flammable materials of which all are solids, for instance, aluminum powder, calcium carbide and calcium silicate, you are required to have a storage licence if the overall quantity of all such solids together exceeds 20 kg.

ii. Where all the substances are liquids, their aggregate volume does not exceed 40 L:

- Eg. If you store several kinds of petroleum/flammable materials of which all are liquids, for instance, butanol, chlorobutane and acetone, you are required to have a storage licence if the overall quantity of all such liquids together exceeds 40 L.

iii. Where all the substances are gaseous, their aggregate weight does not exceed 10 kg; or

- Eg. If you store several kinds of petroleum/flammable materials of which all are gases, you are required to have a storage licence if the overall quantity of all such gases together exceeds 10 kg.

iv. Where the substances are in mixed states, their aggregate weight does not exceed 20 kg.

- Eg. If you store several kinds of petroleum/flammable materials of which consist of solids, liquids and gases, for instance, calcium carbide, acetone and acetylene, you are required to have a storage licence if the overall quantity of all such solids, liquids and gases together exceeds 20 kg.



# Storage of P&FM Without a Valid Storage Licence

## Flammable Materials

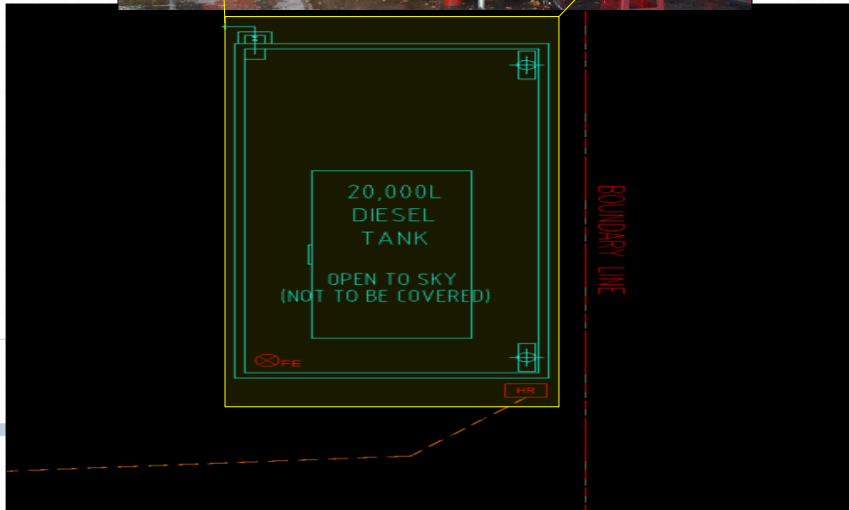
The exemption quantities for the 366 classes of Flammable Materials are in the following folder.

Click on the link to download [the Exemption quantities for flammable materials](#).  
(58.50 KB)

Second Schedule (New)			
S/N	Flammable Materials	General manufacturing, etc., purpose	Medical or laboratory purpose
1	Acetal	20 L	20 L
2	Acetaldehyde diethylacetal	20 L	20 L
3	Acetoin (3-Hydroxybutanone)	20 L	20 L
4	Acetone	20 L	20 L
5	Acetyl chloride	20 L	20 L
6	Acetyl methyl carbinol (Butanolone)	20 L	20 L
7	Acetylene (gas)	10 kg	10 kg



# Storage of P&FM Without a Valid Storage Licence



Any Other Classes of Petroleum					
Purpose	Exemption Quantity				
	Class	I Class	II Class	III Class	
	Petroleum	Petroleum	Petroleum	Petroleum	
For private use in a private dwelling house or for use in any business other than in a factory	Not more than 20 L	Not more than 200 L	Not more than 1,500 L		
For use in a factory	Not more than 400 L	Not more than 1,000 L	Not more than 1,500 L		

# Storage of P&FM Without a Valid Storage Licence

## P&FM Storage Licence Application

1. Engage a Qualified Person (QP) to prepare and submit plan to SCDF.
2. Submit plan(s) that incorporate with the fire safety works in accordance with the Fire Code and other accepted codes.
3. A registered inspector (RI) will apply Fire Safety Certificate (FSC) after he has certified that fire safety works are completed and in accordance with the approved building plans.
4. The applicant can apply for P&FM storage licence on-line via GoBusiness Portal.

**SCDF**  
The Life Saving Force  
SINGAPORE CIVIL DEFENCE FORCE

REPUBLIC OF SINGAPORE  
SINGAPORE CIVIL DEFENCE FORCE

FIRE SAFETY ACT  
(CHAPTER 109A)

SECTION 29 (3) (a)

FIRE SAFETY CERTIFICATE

Attn:

DESCRIPTION OF PROJECT:  
PROPOSED GAS CYLINDER STORAGE AND MANIFOLD SYSTEM TO THE EXISTING EATING HOUSE AT

APPROVED PLAN NUMBER(S):

This is to certify that the fire safety works in the above project have been satisfactorily completed in accordance with the requirements of the Fire Safety Act.

Nur Hazwan Bin Amin  
for Commissioner  
Singapore Civil Defence Force

Date:

SCDF - A member of the Home Team  
HQ SINGAPORE CIVIL DEFENCE FORCE, 61 UBI AVENUE 4, SINGAPORE 408627  
TEL: 6841 3778 FAX: 6841 1490 EMAIL: [na\\_bureau\\_scdcf@gov.sg](mailto:na_bureau_scdcf@gov.sg)

File Ref No. :  
Submission No. :

Lic No.:

REPUBLIC OF SINGAPORE  
SINGAPORE CIVIL DEFENCE FORCE

THE FIRE SAFETY ACT 1993  
(PART 6)  
CONTROL OF PETROLEUM AND FLAMMABLE MATERIALS

PETROLEUM & FLAMMABLE MATERIALS STORAGE LICENCE

Licensee (Name and Address)

License to store petroleum & flammable materials and respective quantity :  
1. Petroleum - 1200 Litres

Premises authorised for storage of petroleum and flammable materials :

Period of Licence  
28-AUG-2023 TO 31-JUL-2025

License fee  
484.0

This licence is granted subject to Act and the Regulations relating to the said purpose now and from time to time hereafter in force.

NG HUANCHAO  
for COMMISSIONER  
SINGAPORE CIVIL DEFENCE FORCE  
(This is a computer generated letter. No signature is required)

28-Aug-2023  
Date of Issue

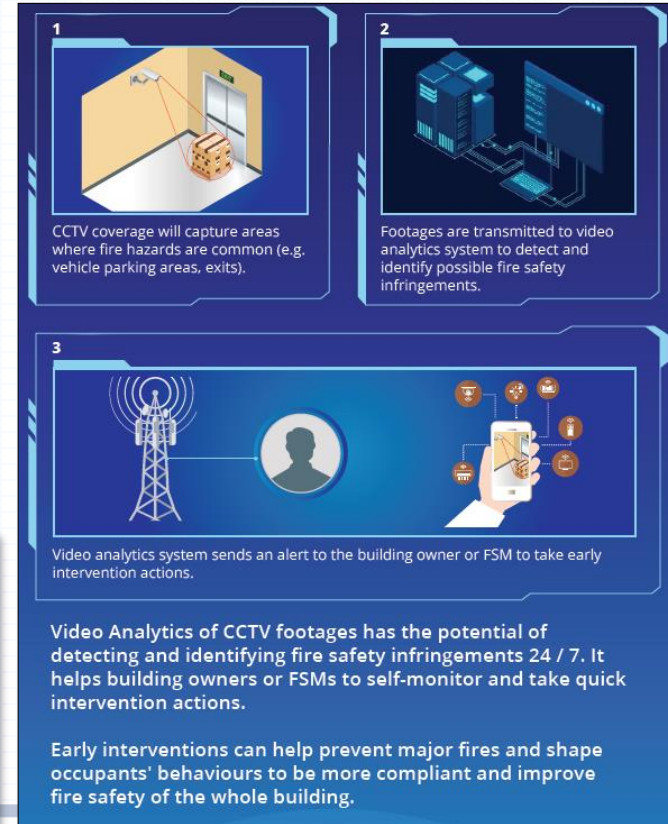
\*Please note that the licence will be revoked if serious non-compliance of technical requirements are found during subsequent inspections.

# Managing Fire Safety using Technology



# Managing Fire Safety using Technology

- Advances in technology has expanded the functions of CCTV cameras, commonly used for surveillance and security purposes.
- Trials were conducted using CCTVs equipped with video analytics capabilities to detect fire safety infringements. Alerts can be sent to relevant parties (e.g. FSMs, building owners) to take immediate interventions.



# Managing Fire Safety using Technology

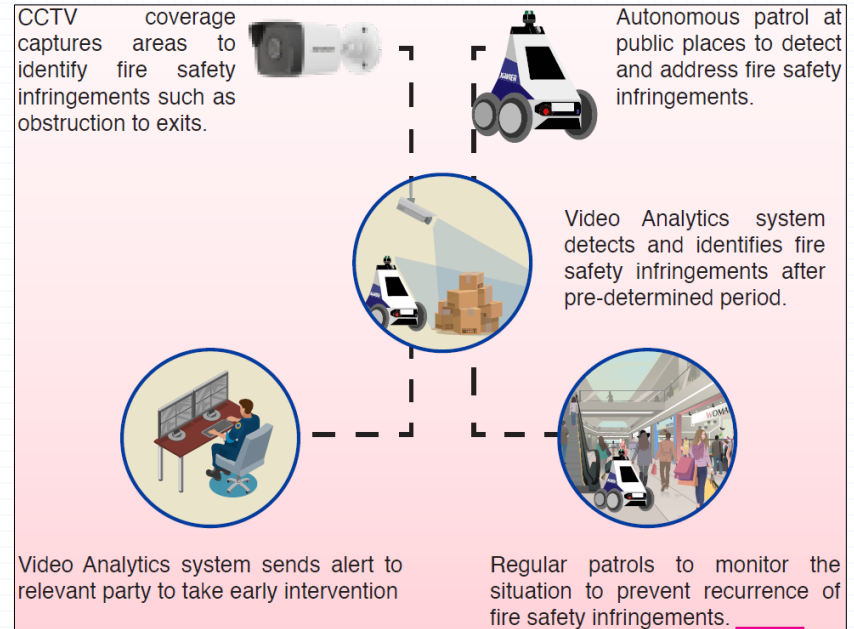
- Trials were also conducted using the Multi-agencies Autonomous Patrol (MAP) Robot to detect fire safety infringements at public places.
- Infringements such as obstructions to exits, hydrants, fire engine access roads could be detected and alert the relevant party to take immediate intervention actions.
- Audio and visual messages will also be sounded and displayed to prompt the responsible party to rectify the infringement.





# Managing Fire Safety using Technology

- These initiatives provide means for early intervention, which helps to shape the behaviour of building occupants and the public, to be more aware of the implications of their actions and prevent recurrence.
- By harnessing the power of VA systems, occupants can ensure a fire-safe environment for our community through proactive and advanced fire hazard detection and mitigation.



# Conclusion

- Assisting the building owner in managing fire safety is a critical responsibility of Fire Safety Manager (FSM).
- FSM must ensure that fire safety measures are in proper working order and, when any malfunctions are identified. FSM should inform the nearest territorial Fire Station.
- For non-compliances highlighted during our fire safety inspection, FSM should also update the case officer on the rectification progress.
- Lastly, to explore the use of technology such as Video Analytics to enhance your duties and better manage building fire safety.





# Thank You

