SCDF
The Life Saving Force
. . . for a safer Singapore

NFEC
National Fire and Emergency Preparedness Council

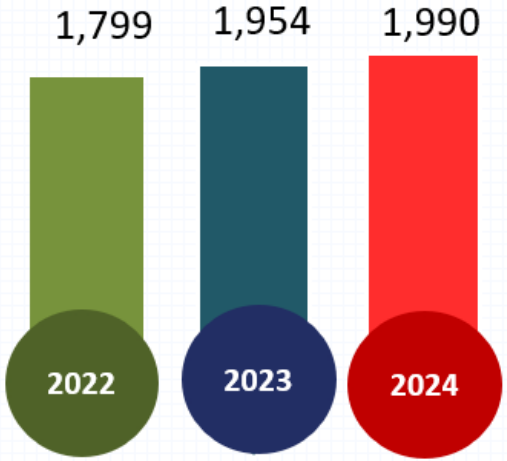
Fire Statistics & Case Studies

NFEC Fire Safety Seminar 2025

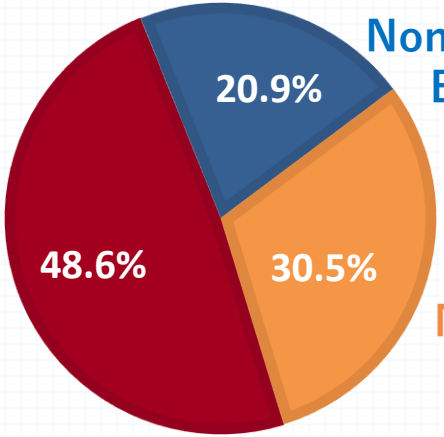
Scope

- Fire Statistics and Case Studies
- What do you do when Fire occurs?

Total Fire Calls



Breakdown of Fire Calls (2024)



Non-residential Buildings (415)

Residential Buildings (968)

Non-building Premises (607)

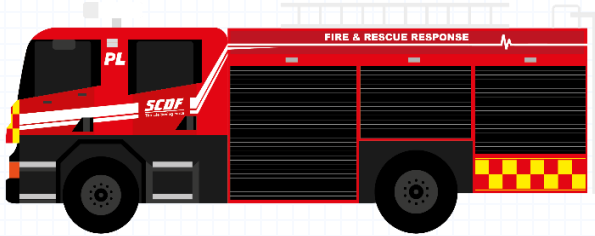
80 Fire Injuries

5 Fatalities

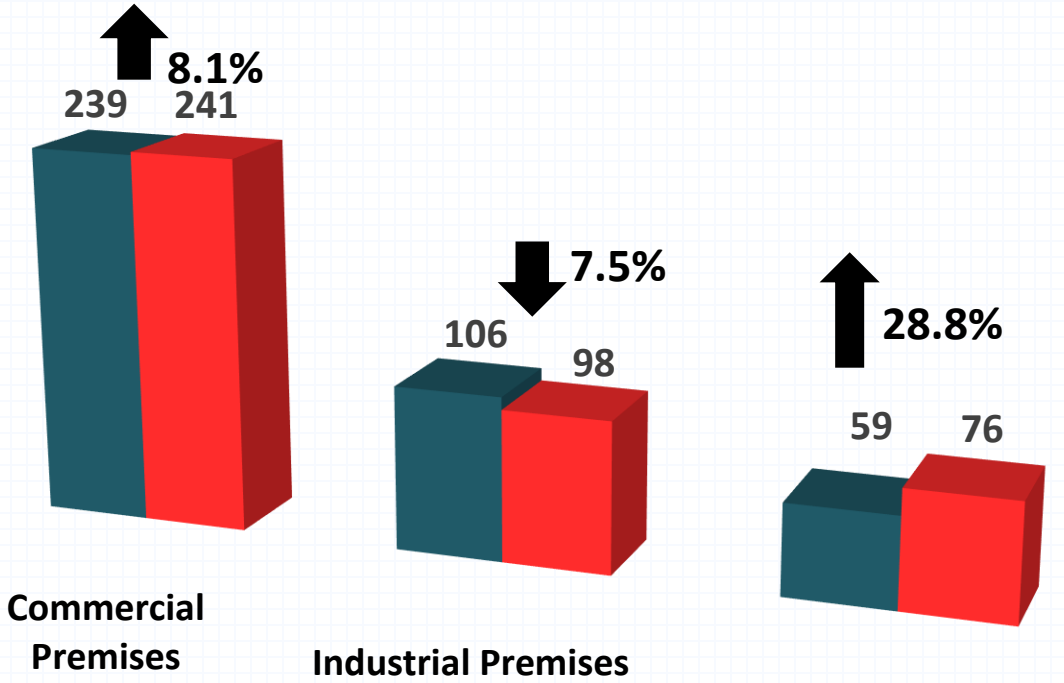
Cause of fires

299 Electrical Origin

335 Unattended Cooking

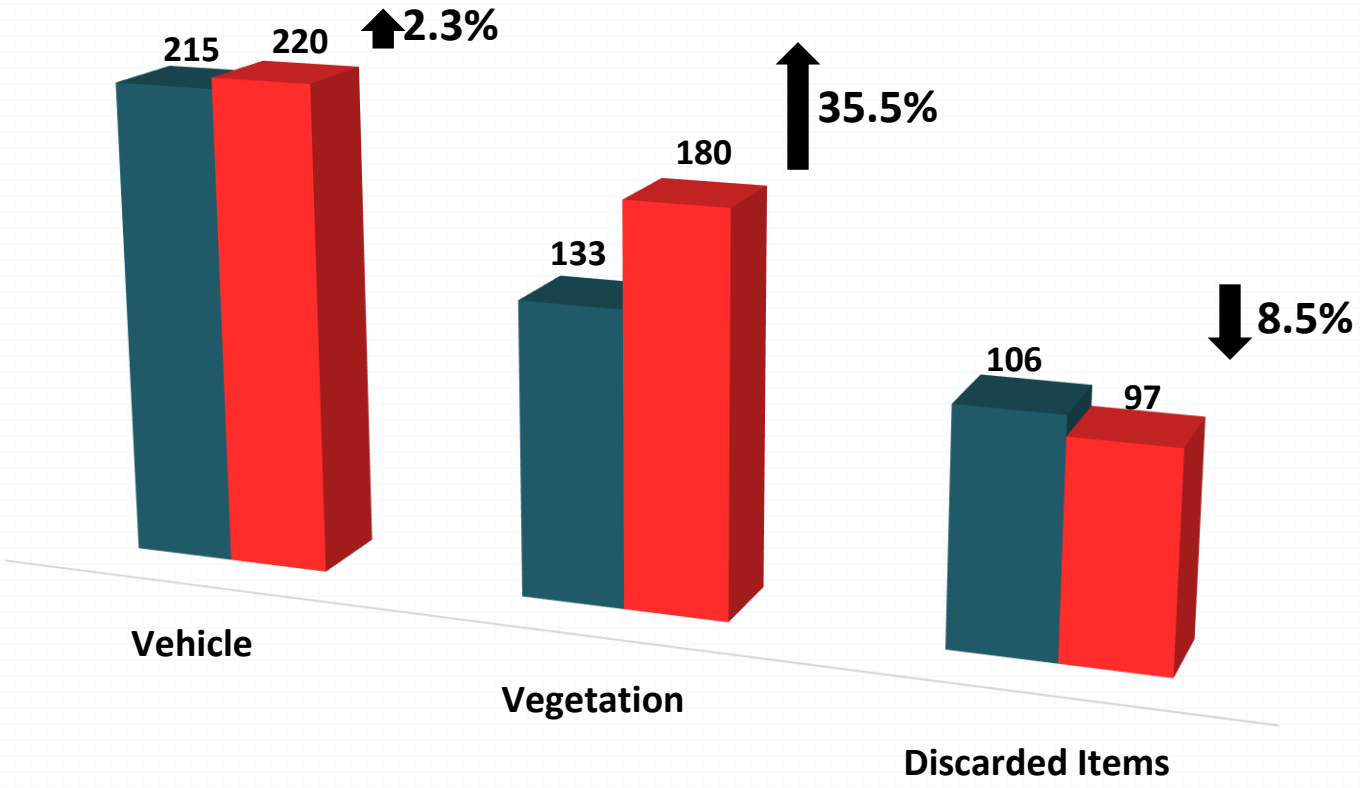


Breakdown of Fires at Non-Residential Buildings

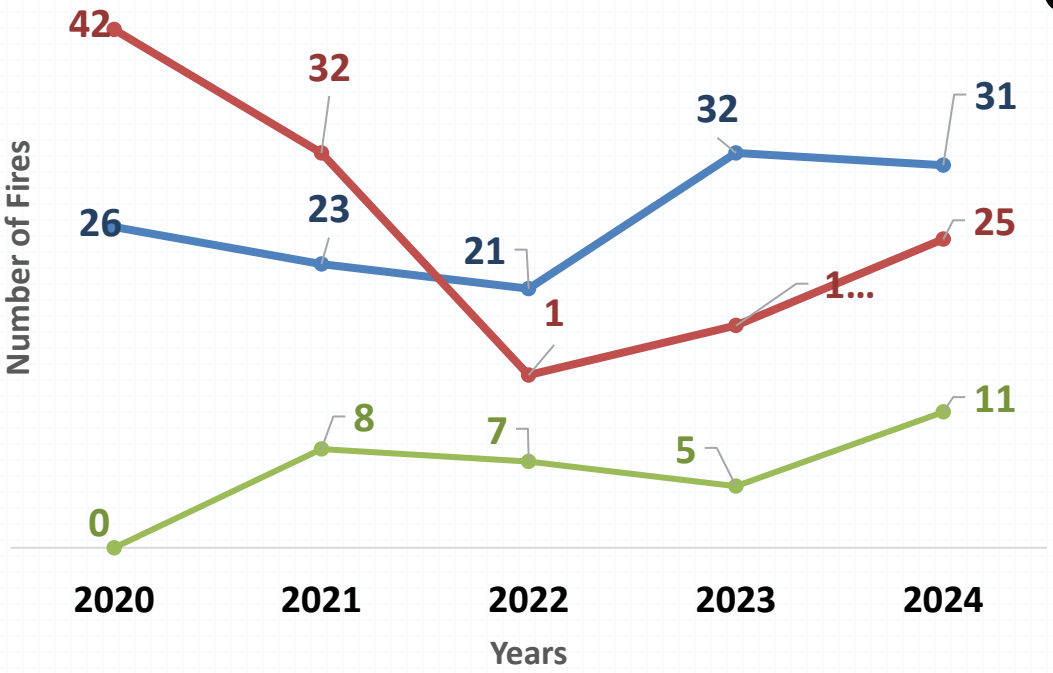


E.g. Schools, Playground, Community centres and hospital

Breakdown of Fires at Non-Building Premises



PAB, PMD and PMA Fires Over The Last 5 Years



Comparing 2024 to 2023

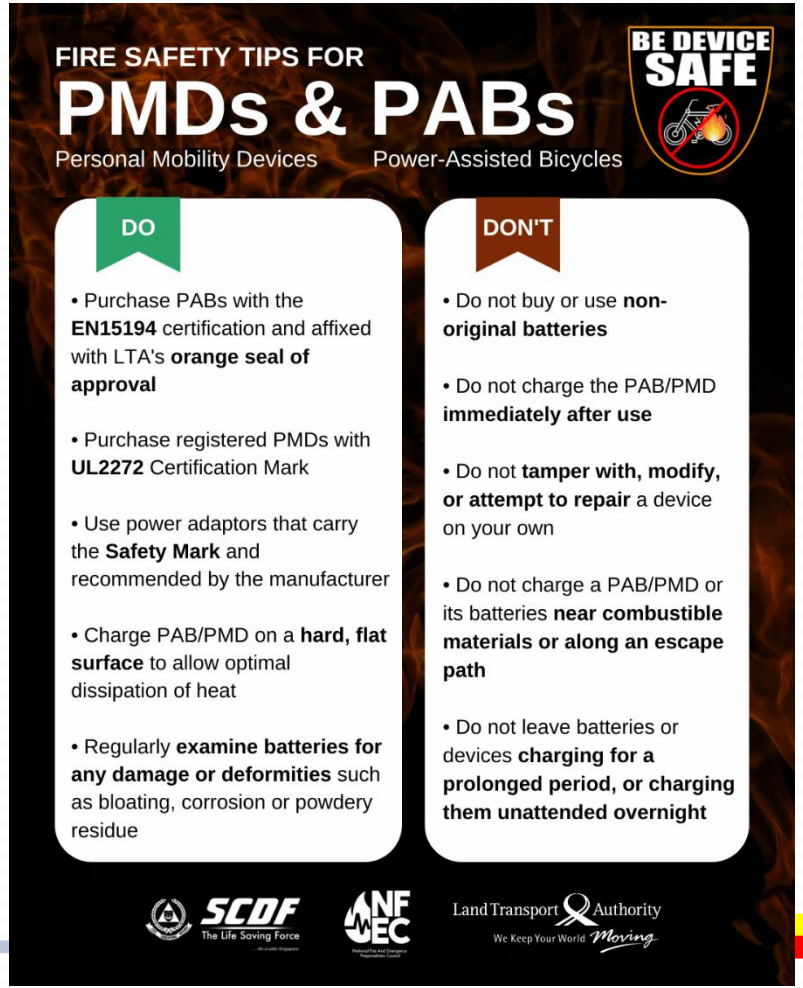
PABs decreased by 1 call (-3.1%)

PMDs increased by 7 calls (38.9%)

PMAs increased by 6 calls (120%)

Reminder…

- Occurs during **charging, as well as stationary and in motion.**
- About half of the involved devices had some forms of **modification**.
- Overheating can **cause thermal runaway** in batteries leading to ignition.
- **May ignite nearby combustibles**
- **Do not place it near escape routes**



Cooking related Fires

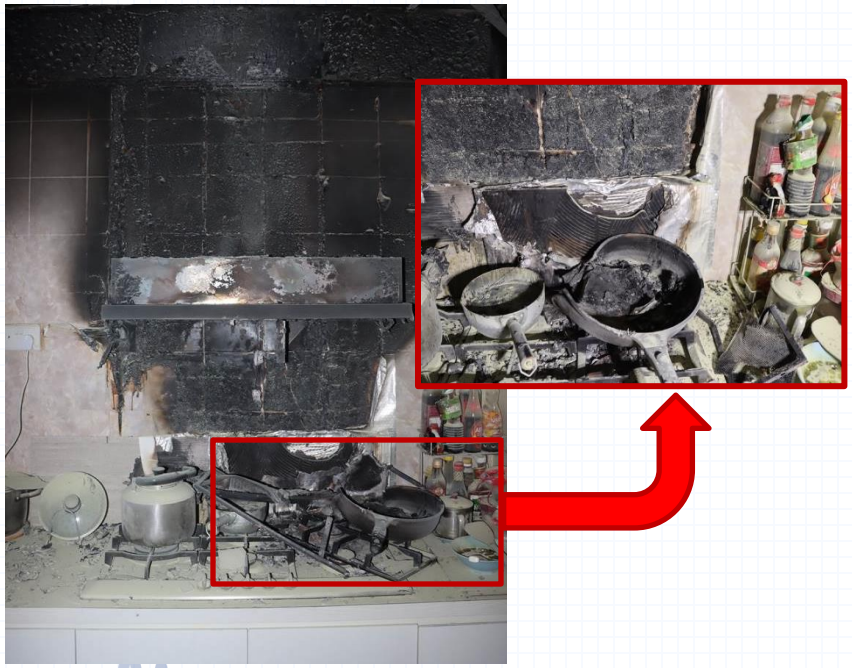
Cause of fires

299 Electrical Origin

335 Unattended Cooking

Case Study 1

Overheated contents within a pan in residential home



- Fire involving overheated contents in a pan within a residential kitchen.
- The stove was left unattended while the resident left the unit to attend to other activities of the day for approximately 10 minutes.
- The fire was extinguished with the help of the **neighbours** using dry powder extinguishers

Case Study 2

Overheated contents within a wok in commercial kitchen

- Fire originated from overheating of contents of a wok from a coffeeshop stall.
- The owner of the stall stepped away for a few moments and the fire grew larger and damaged its surroundings.
- The owner sustained minor burns on his hand as a result of the incident.
- The fire was extinguished by SCDF using water jets with the help of the public using fire extinguishers

Overheating of the contents

- ✓ **How to prevent?**
- ✓ Be attentive
- ✓ Keep nearby combustibles away
- ✓ Area cleanliness
- ✓ Fire suppression systems

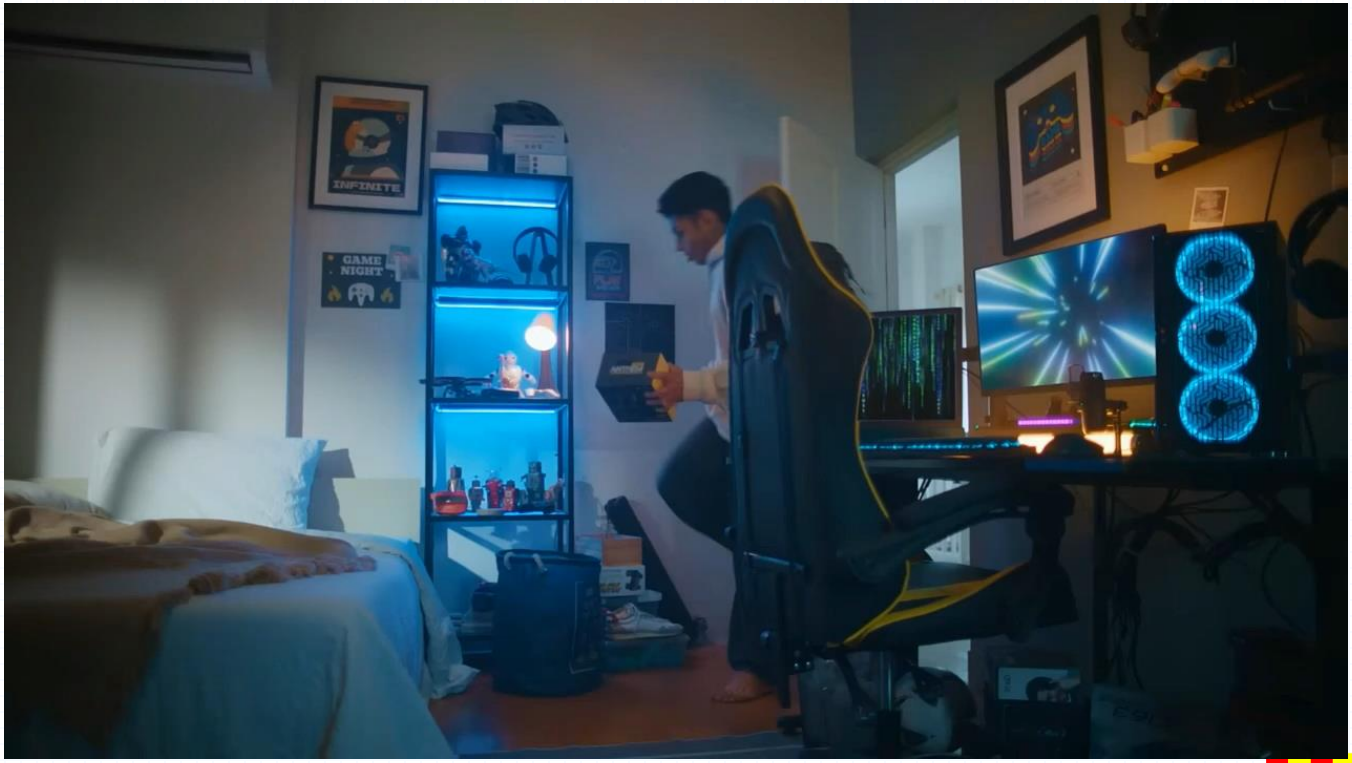
- **What to do?**
- ✓ Do not use water!
- ✓ Turn off gas/electrical supply
- ✓ Ease of access to Fire extinguishing medium

Electrical Fires

299
Electrical Origin

Cause of fires

335
Unattended Cooking



Case Study 4

Electrical fire involving devices at a working space in a bedroom

- Fire originated from an electrical device and / or its connected wirings)
- There were a variety of items at connected at the area including but limited to a printer among other work items.
- Fire was extinguished using a hose line jet from a SCDF fire emergency vehicle

Case Study 3

Electrical fire involving devices at a working space in a Clinic

- Fire originated from wall socket outlet(s) and its connected device(s)
- There were a variety of items at connected at the area including a power socket, laptop etc..
- Fire was extinguished using a hose line jet from a SCDF fire emergency vehicle

Common signs of faulty switches

Temperamental switch

Noisy switch

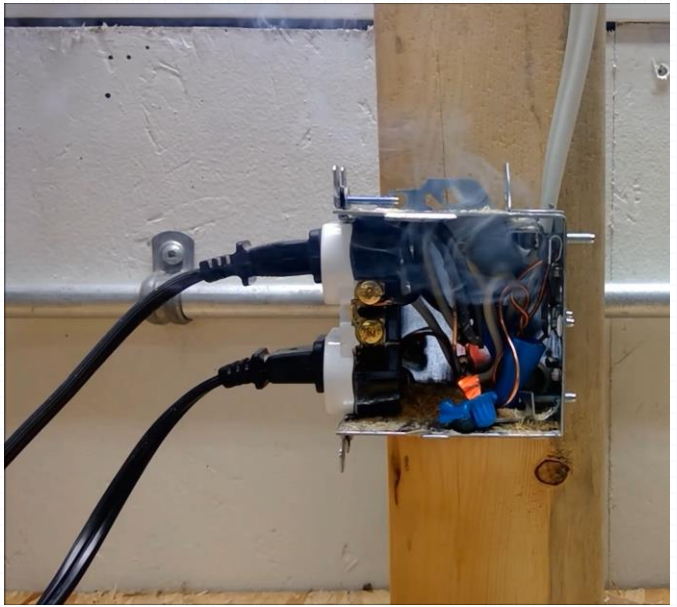
Sparking switch

Warm Switch

Electrical Fires – Possible Causes

Loose / Improper Connection

- Increase resistance in the circuit.
- High resistance causes overheating.
- Arcing may occur with frequent making / breaking of contacts.
- May ignite the conductors or nearby combustibles.

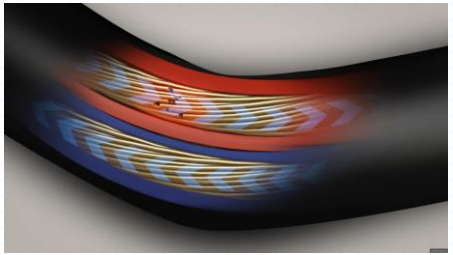


Have a Licensed Electrical Worker to Perform Regular Checks / Servicing

Electrical Fires – PossibleCauses

Arc Fires

- Occurs when: -
  - Tight corners/ Pinching
  - Loose plugs
  - Externally damaged
  - Worn out insulation
  - Crushed by furniture
  - Etc…

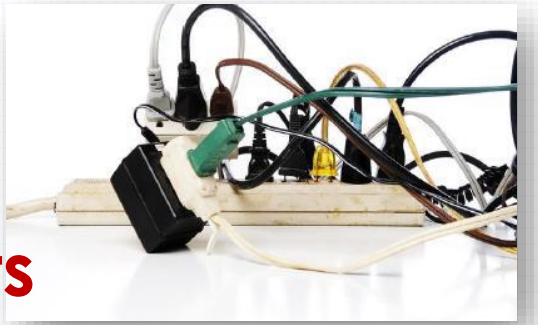


Check the condition of wires regularly. Frayed wires or cracked cords should be replaced or repaired immediately

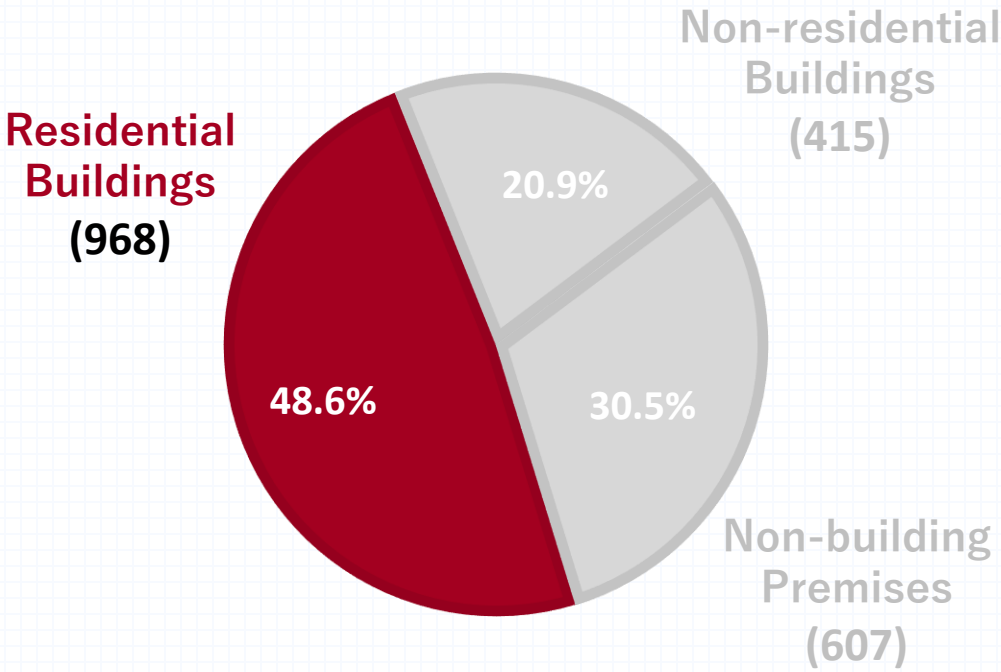
Electrical Fires - Possible Causes

Overloading

- Occurs when current exceeds rated capacity.
- Excessive current can cause heating, melting and insulation damage to the wires/cables, possibly starting a fire.
- May ignite the conductors or nearby combustibles.



Never overload electrical outlets with electrical appliances


Residential Buildings (968)
48.6%
Non-residential Buildings (415)
20.9%
Non-building Premises (607)
30.5%

Case Study 5

Fire involving contents of a living room of HDB residential unit

- The fire involved the contents of a living room.
- The fire was extinguished by SCDF crew using hose line jets and a monitor from from various SCDF emergency vehicles.
- As a result of the fire, the structure and contents of the living room were damaged.
- Other parts of the unit such bedrooms, master bedroom storeroom and kitchen, sustained varying degrees of heat, smoke and water damage.

Case Study 5

Fire involving contents of a living room of HDB residential unit

- The unit was occupied by a brother and sister and son of the sister.
- On the night that the sister noticed the fan in her room had stopped working and went out to the living room to investigate a possible power trip.
- She saw the fire at the corner of the living room and attempted to extinguish the fire unsuccessfully, using water from the kitchen.
- She proceeded downstairs to her neighbour for help.

Case Study 5

Fire involving contents of a living room of HDB residential unit

- The brother was at the void deck at the incipient stage of the fire, went back up the unit by lift.
- He saw the unit on fire and went into the unit, we could only assume to look for family
- By the time SCDF managed to enter the unit, he was found at the kitchen toilet, and was subsequently pronounced dead.
- It is deduced that the spread of the fire and the heavily smoke-logged condition in the unit might have obstructed and hindered the deceased's path to the exit and caused him to retreat to the toilet.

Clear and Unobstructed escape route is important regardless of premises

What do you do when Fire occurs?

Fire Incidents

Before Fire: Preparation

- Ensure proper checks of In-Place Protection systems such as sprinklers, fire alarms etc…

Ensuring the serviceability and readiness of all resources; ready at a moment's notice.

Before Fire: Preparation

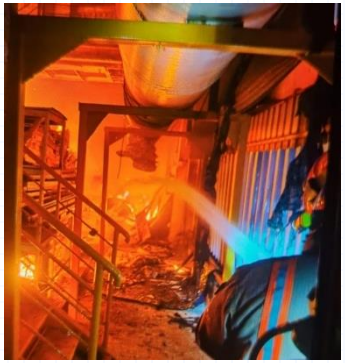
- Appropriate, adequate and well-maintained equipment e.g., Personal Protective Equipment (PPE), Mitigation, fire extinguishing medium

Ensuring the serviceability and readiness of all resources; ready at a moment's notice.

During Fire: Managing

- Prompt assessment of the fire location & Identification / isolation of hazardous materials (if any) in the vicinity of the fire location

- Apprising SCDF of the accurate situation condition and guide SCDF crew to the affected area

Prompt action saves lives and minimizes property damages; it also helps to narrow down the area of fire origin

During Fire: Managing

- Containment of the fire, provide boundary cooling (if necessary) to minimize the spread
- Continuing to support SCDF for the firefighting operations
- Sharing of the list of hazardous materials and/ or Safety Data Sheet (SDS)

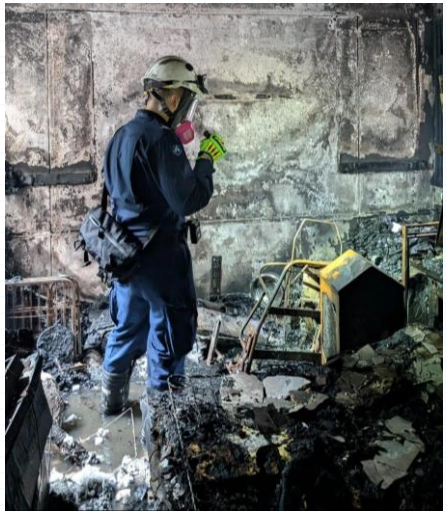
Post Fire: Support

- Sharing of the events leading up to the incident
  - i. Events leading and Actions taken during the fire
  - ii. Sharing of the relevant document, resources and SME

Supporting SCDF's investigation

1) To determine the Origin and Cause of the fire

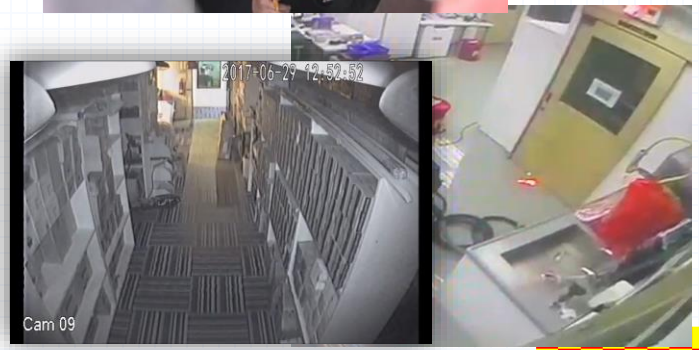
2) In turn help to potentially improve Fire Safety for the future



Post Fire: Support

- Sharing of the events leading up to the incident
  - i. Events leading and Actions taken during the fire

- ❑ Keep staff involved in the operations of affected equipment / appliances nearby for SCDF interview
- ❑ Provide CCTV footage or any early stages of videos or photos of the incident
- ❑ Share Collate material data sheets / inventory list of items affected by fire



Post Fire: Support

- Sharing of the events leading up to the incident

ii. Sharing of the relevant document, resources and SME

- ❑ Share any maintenance records
- ❑ Collate material data sheets / inventory list of items affected by fire
- ❑ Share electrical diagrams / floor plans
- ❑ Generate logs from battery monitoring systems (eg BMS / UPS)
- ❑ Assist with onsite machinery such as forklifts, tractors, excavators
- ❑ SMEs to assist to explain the inner workings of the equipment and system of the premises

Thank You