



GOVERNMENT LABORATORY
Forensic Science Division

Fire Investigation
No. 5 Alarm Fire at Wang Fuk Court

Reporting Officer: LEE Wing-man

- 1 Cause of Fire
- 2 Examination of Temporary Protective Materials found at the Scene
(comparison of burning behavior of different materials upon exposure of a small flame source)

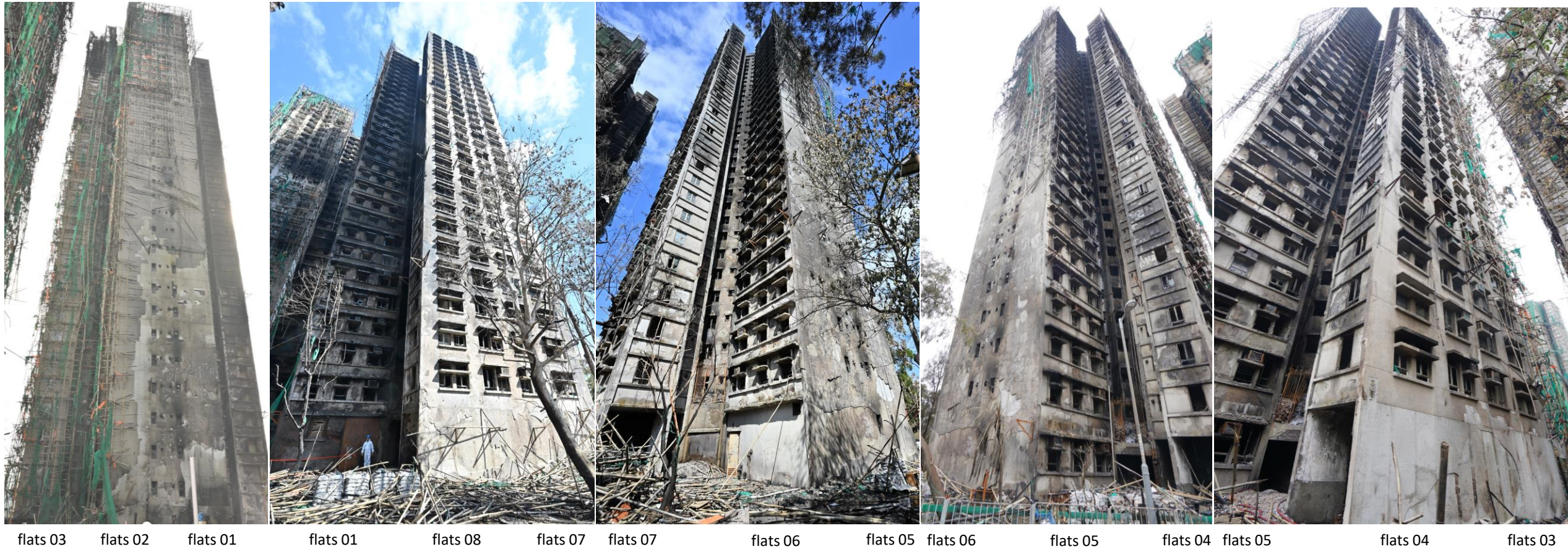
Reports:

2445

Report	Issue date	Report Title (Laboratory Reference)	Contents	Pages
1	29 November 2025	Preliminary Report for Scene Investigation at Wang Fuk Court, 3821 Tai Po Road - Yuen Chau Tsai, Tai Po (15C2825)	Examination of foam board at Scene	3
2	1 December 2025	Preliminary Report (superseded by report number 6)	Preliminary examination of safety nets	3
3	29 December 2025	Fire Investigation at Wang Fuk Court, 3821 Tai Po Road - Yuen Chau Tsai, Tai Po: Report on Cause of Fire (25C2835)	Cause of Fire	37
4	21 January 2026	(25C2814)	Examination of clothing items	
5	5 March 2026	(25C2814, 25C2825-25C2829, 25C2861 to 25C2862)	Examination of plastic boards	7
6	15 March 2026	Report on Examination of Safety Net (Condition A) (25C2814, 25C2825 to 25C2827)	Preliminary examination of safety nets	3
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Cause of Fire

General View of Wang Cheong House



General View of Wang Cheong House

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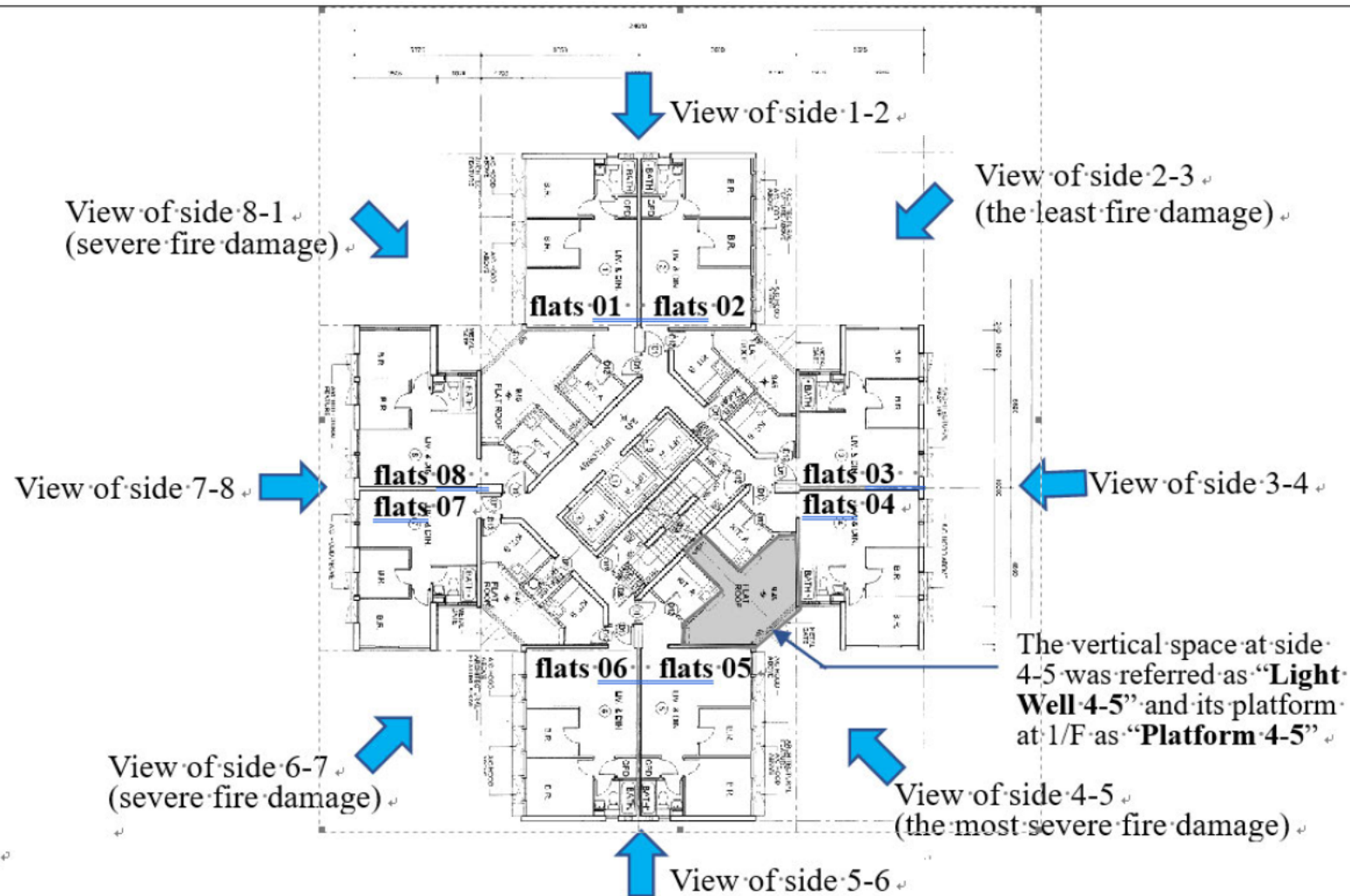


Figure 1: The Floor Plan of Wang Cheong House (1/F) for easy reference

Ground Floor of Wang Cheong House

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Photo 12: Outside the ground floor of side 4-5 of Wang Cheong House (collapsed scaffolds, such as burnt bamboo remains, remnants of safety nets and foam boards [\(↑\)](#), with bags of plastering materials (with close-up at **Photo 12a** below) and carton paper boxes of mosaic tiles (with close-up at **Photo 12b** below) .

Outside view of flats 05, Wang Cheong House

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View Light Well 4-5, Wang Cheong House

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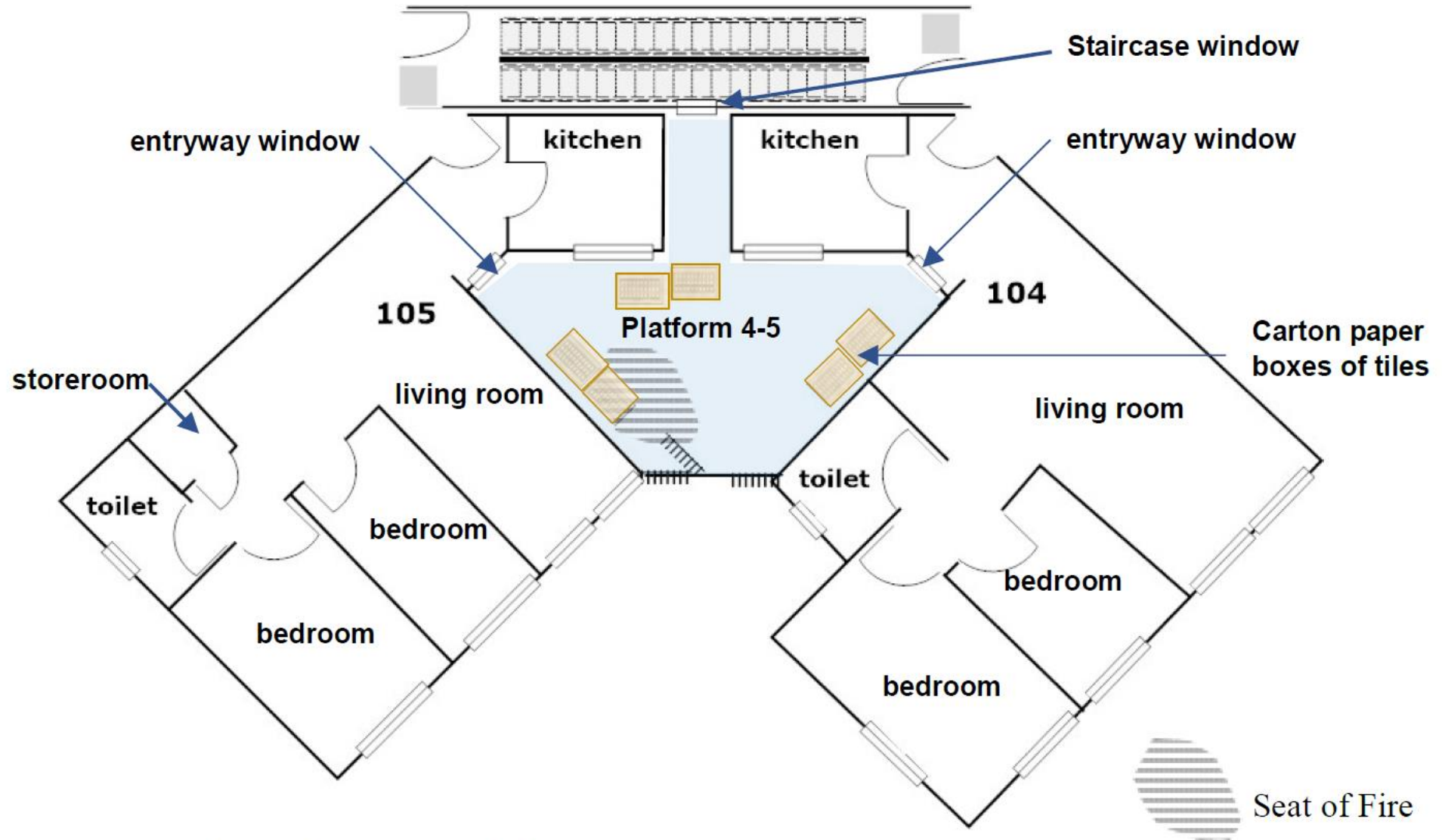


Figure 2: Sketch of Flat 104, 105 and Platform 4-5

View Light Well 4-5, Wang Cheong House

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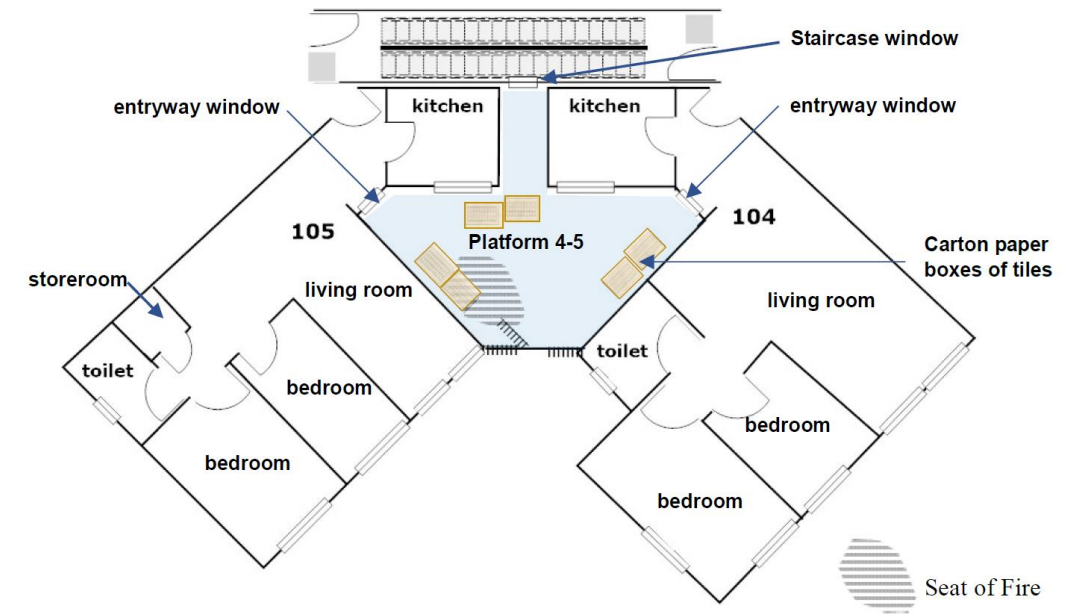
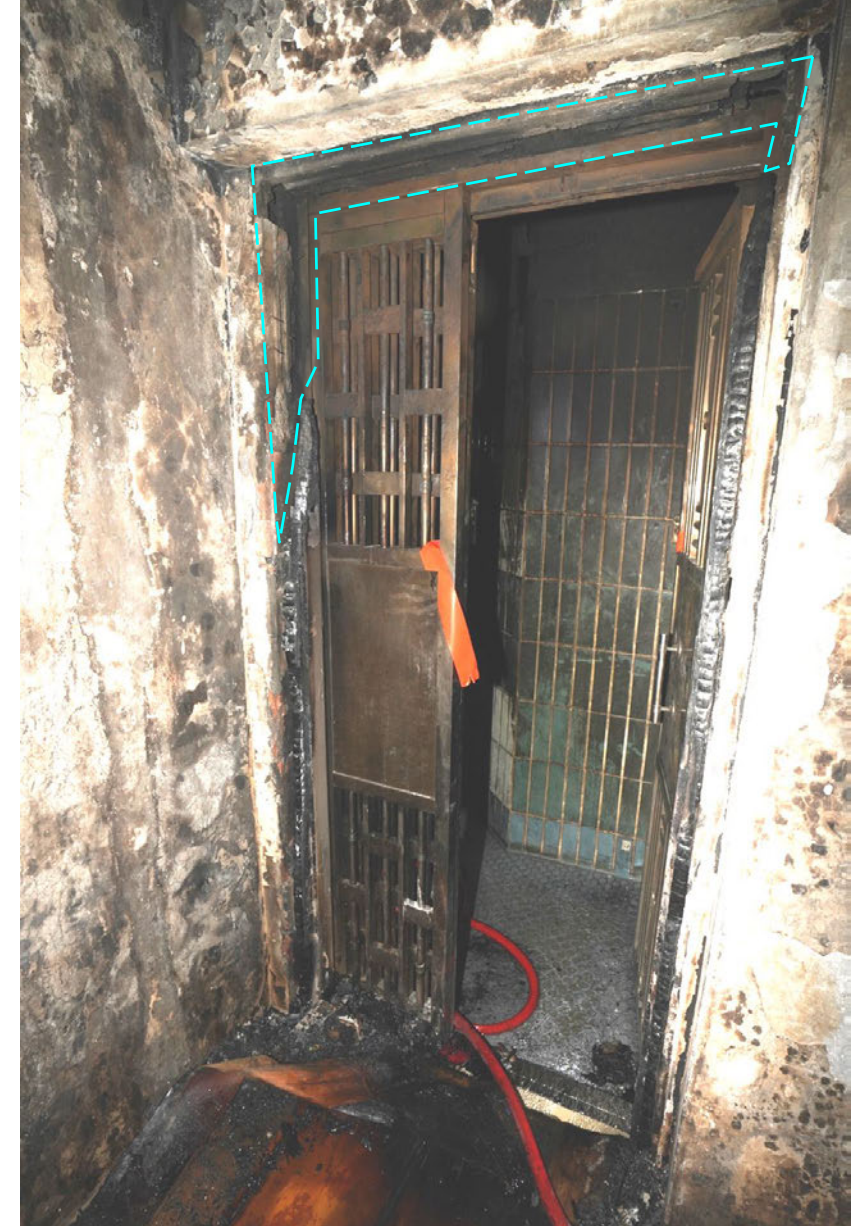


Figure 2: Sketch of Flat 104, 105 and Platform 4-5

Flat 104, Wang Cheong House

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View towards kitchen and main entrance of Flat 104

Flat 104, Wang Cheong House

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Close-up of kitchen window (intense spalling of concrete window overhang outside with irregular outline, whereas the inner wall above the window sustained comparatively less fire damage with tiles remained on the wall at the top right corner above the window.)

Flat 105, Wang Cheong House

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View of kitchen window (the extent of fire damage in form of spalling was most serious at the concrete window overhang outside. The severity of the fire damage to the inner kitchen wall decreased with an increase in distance away from the window)

View of main entrance (the head jamb being consumed by fire, while the door jambs mostly charred with only the edge facing the flat irregular, showing the sign of being consumed by the fire from the flat)

Flat 105, Wang Cheong House

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View of entryway window (more severe spalling on the concrete window overhang than the inner wall)

Flat 105, Wang Cheong House

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View of living room window (more severe spalling on the concrete window overhang outside rendering it an irregular surface)

1/F corridor, Wang Cheong House

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A: View of entrance Flat 105-106



B: View of entrance Flat 103-104



View of corridor from Flat 107-108 towards Flat 105-106, with close-up view at **Photo A** (more severe heat damage at the end of Flat 105-106)



View of corridor from Flat 101-102 towards Flat 103-104, with close-up view of the end of Flat 103-104 at **Photo 2B**

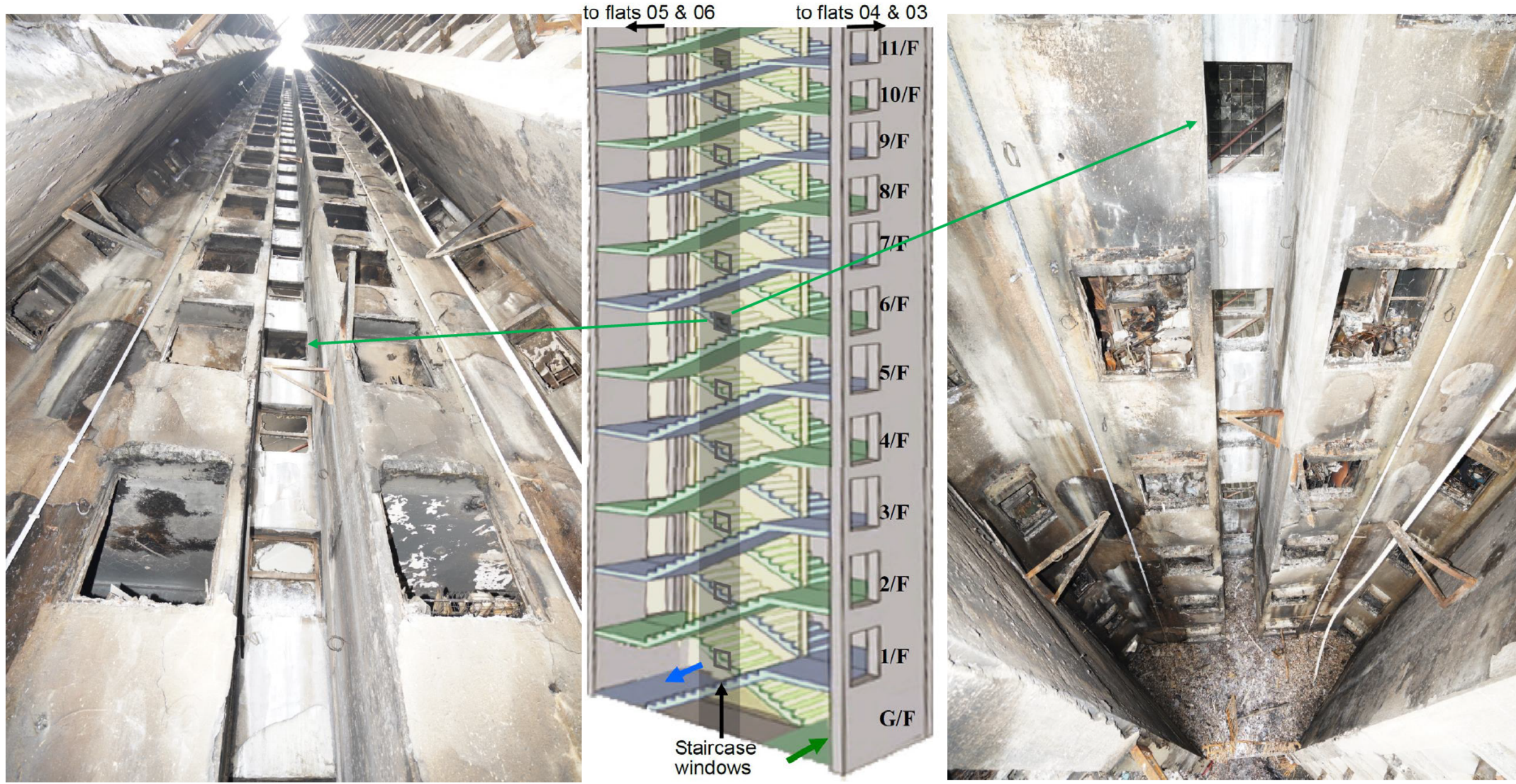
1/F Fire doors, Wang Cheong House

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 A photograph of a front staircase with concrete steps and red metal handrails. At the top of the stairs is a closed wooden door. The walls are light-colored and show some signs of wear.	 A photograph of a rear staircase with concrete steps and red metal handrails. The walls are light-colored and show some signs of wear. At the top of the stairs is a closed wooden door.
Wang Cheong House, Front staircase to 1/F, near Flat 104 The heat damage and soot deposit record indicated that the door was closed during the fire	Wang Cheong House, Rear staircase to 1/F, near Flat 105 Contrast of heat damage on both side of the fire door indicated that the door was closed during the fire

Staircases of Wang Cheong House

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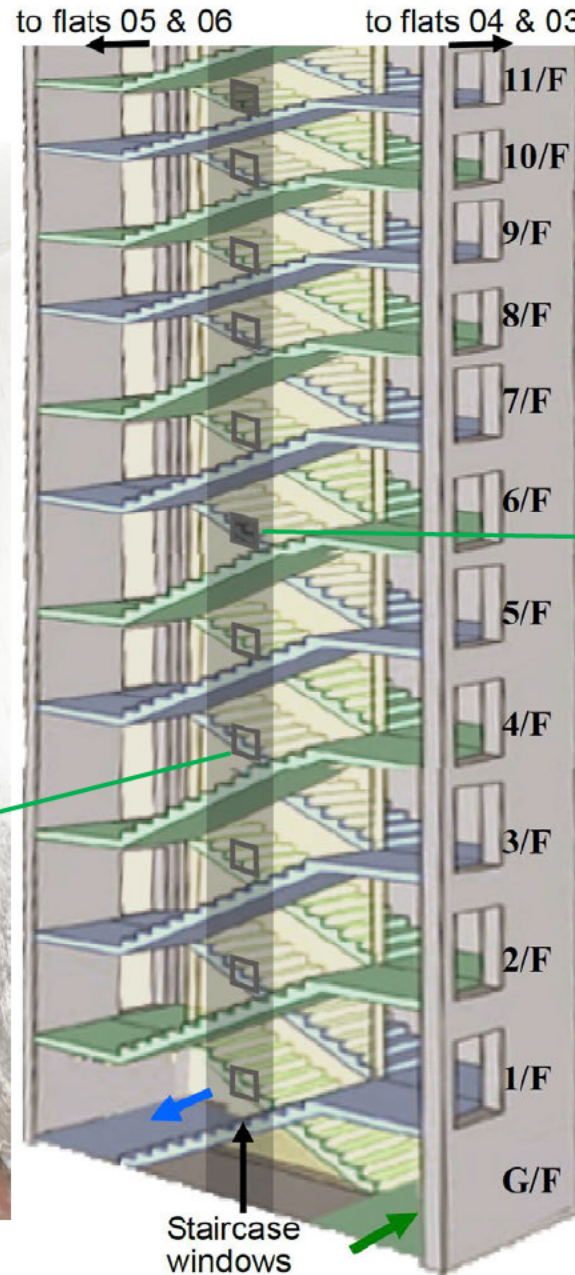


Staircases of Wang Cheong House

2461



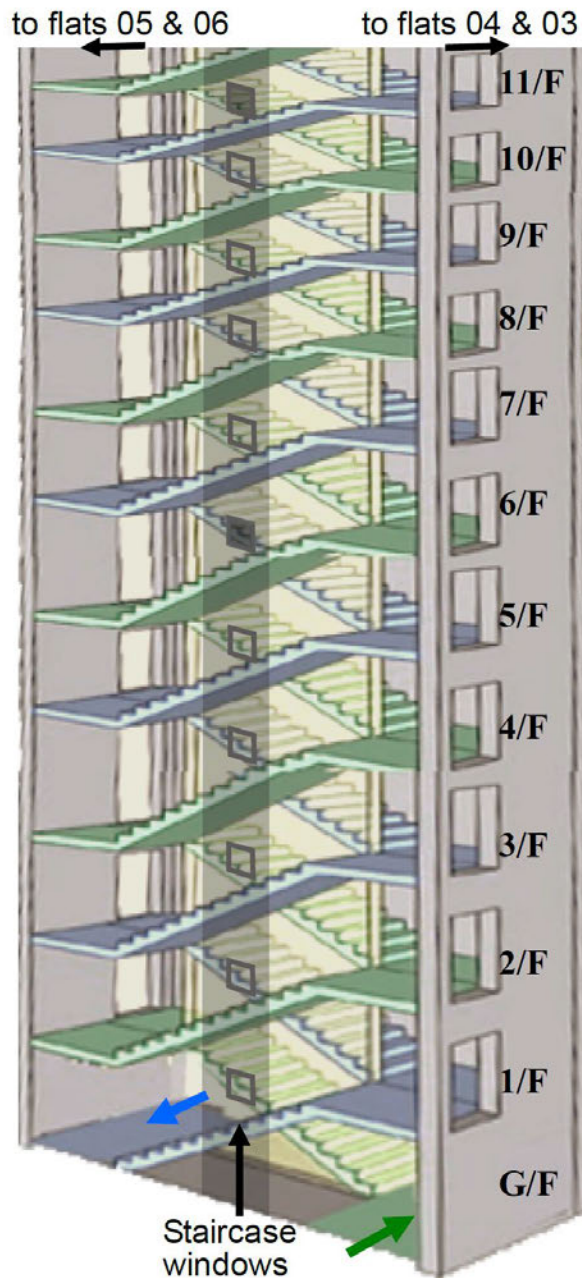
View of rear staircase from 3/F to 4/F



View of rear staircase from 5/F to 6/F

Staircases of Wang Cheong House

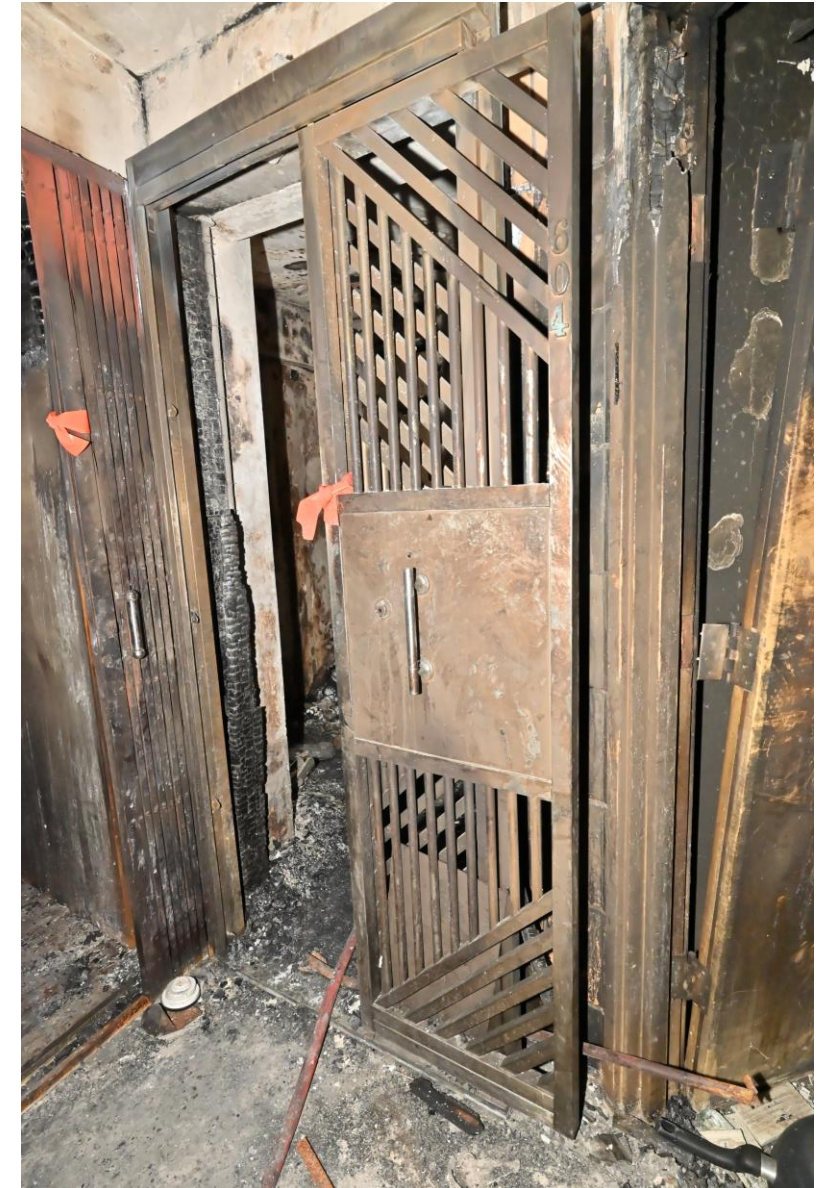
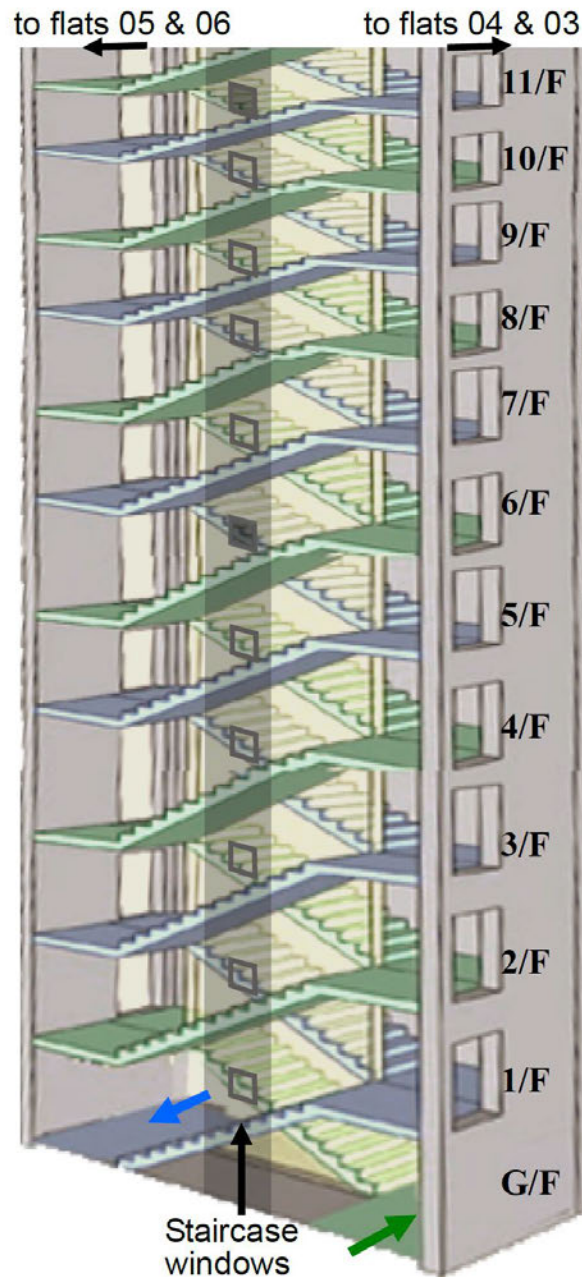
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View of rear staircase from 5/F to 6/F, the window towards Light Well 4-5 had been removed leaving an intact wooden slat at the base of the opening. Severe heat damage above the opening

Staircases of Wang Cheong House

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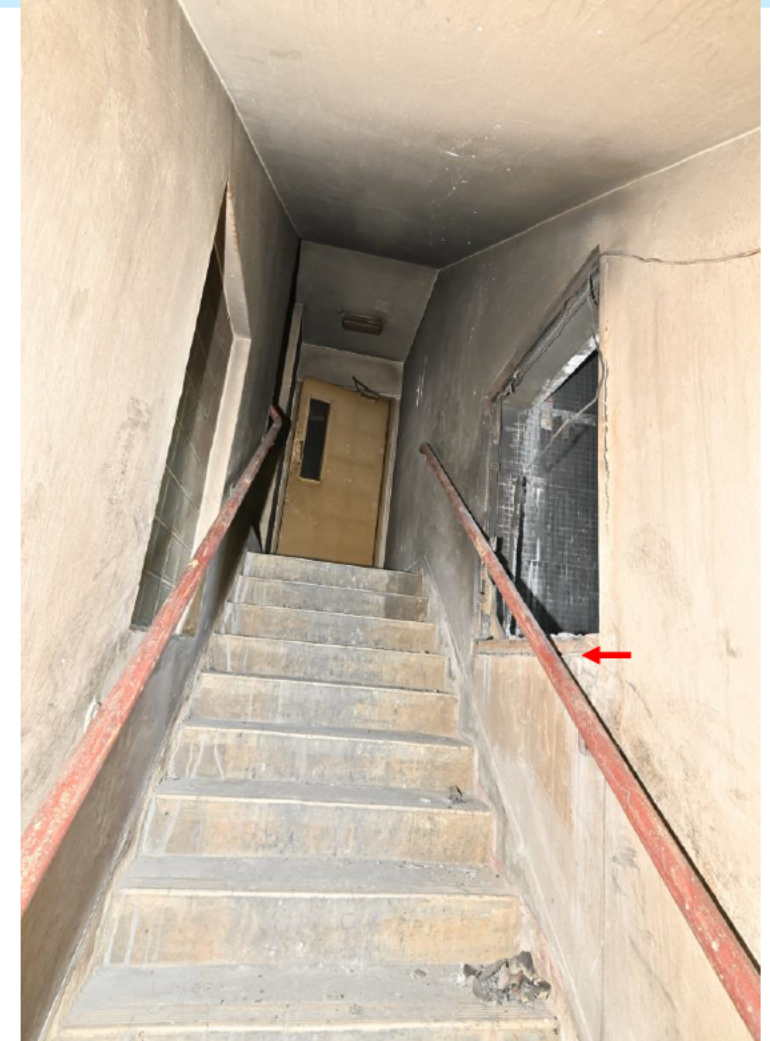
Fire door at 6/F from rear staircase to room 604, the soot deposit pattern suggested that the fire door was closed during the fire

Staircases of Wang Cheong House

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View of front staircase from 4/F to 5/F



View of front staircase from 10/F to 11/F

Photo 14d: View of front staircase from 10/F to 11/F, the window towards Light Well 4-5 had been removed leaving an intact wooden slat at the base of the window opening together with a burnt remnant of vertical wooden slat (marked by red arrow).

Seat of Fire, Light Well 4-5, Wang Cheong House

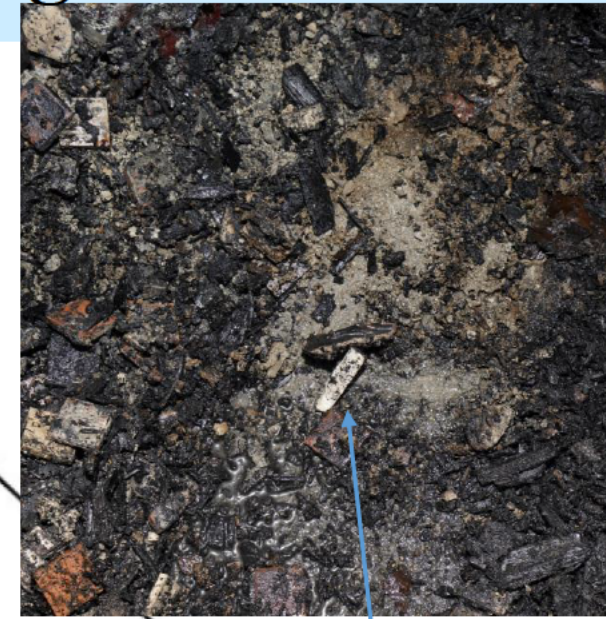
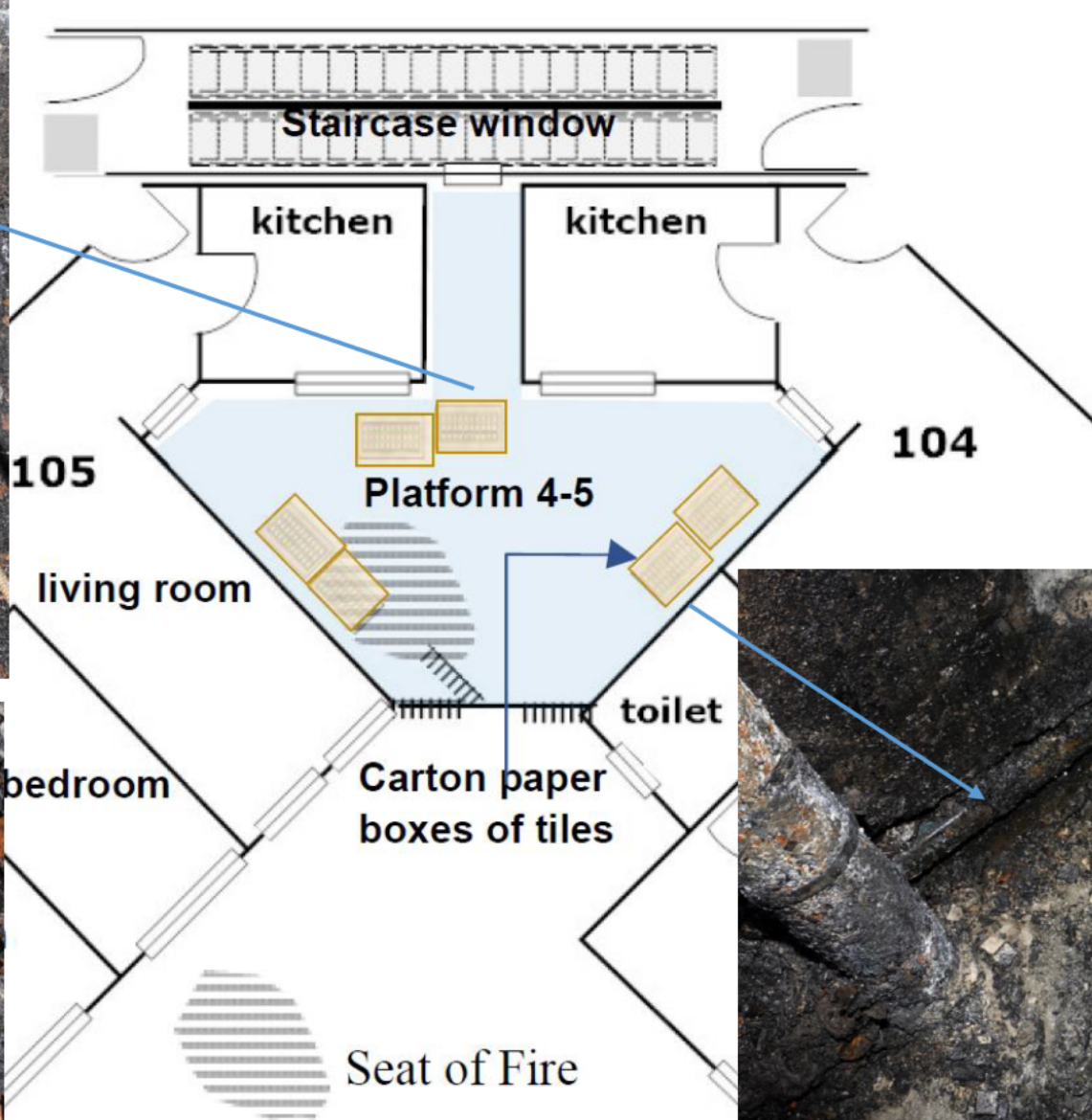
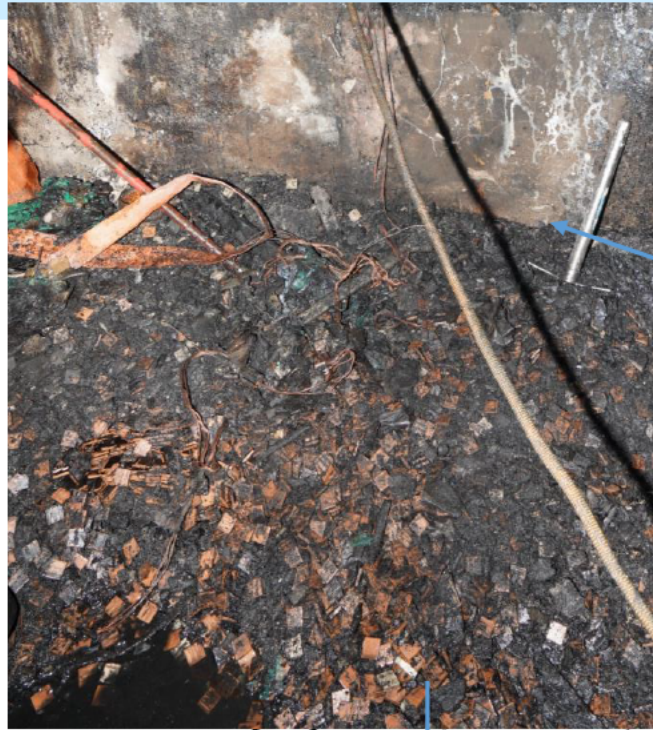
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Photo 26: View of seat of fire toward the metal gate (substantial amount of burnt remnants of carton paper boxes, found in the area next to the metal fence near Flat 105). Foam board fragments and a corrugated plastic board (**A**) and a woven plastic bag of backing papers (**B**) were recovered in the middle area as marked in the blue rectangle

Seat of Fire, Light Well 4-5, Wang Cheong House

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Seat of Fire, Light Well 4-5, Wang Cheong House

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burnt remnant of cigarette end

Laboratory Examination Results:

Nothing of significance was found with respect to recovery of ignitable liquid residues from all debris samples seized from the seat of fire



View of seat of fire from the metal gate

Item 25C2835/10 (WC5) was found comprised mainly burnt remnants of carton papers of the mosaic tiles boxes with a few pieces of backing papers. A piece of plastic board remnant fused with carton papers, burnt remnant of suspected orange toe-board and a burnt remnant of cigarette end were also found mingled with these carton papers.

Video 1, Bicycle parking at Wang Cheong House²⁴⁶⁸



View V1a: View at timestamp 14:43:00



View V1b: View at timestamp 14:45:5

View V1a to V1b: small light-tone objects, resembling lighted materials, were continuously dripping from the top of the view onto the floor as highlighted in the red box in the period

Video 2, Light Well 4-5 at Wang Cheong House 2469

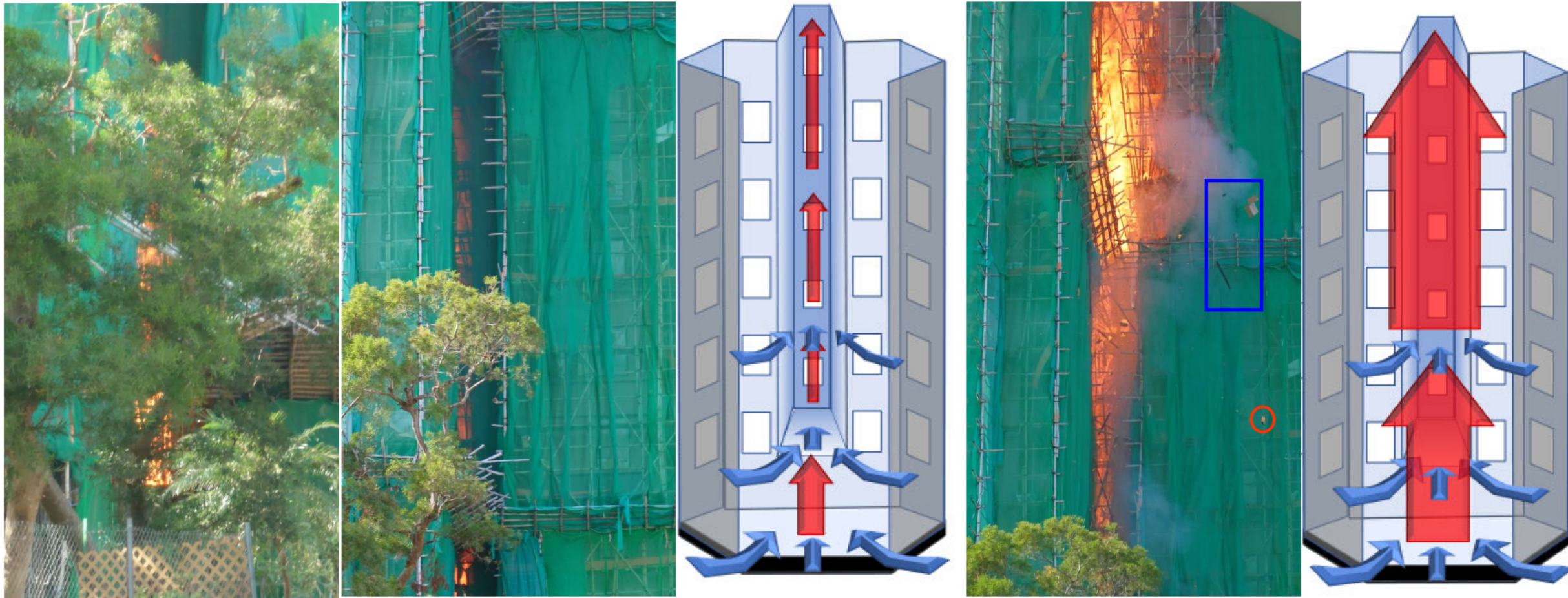


View V2a: View at about locations of Map V2 to Map V4, *i.e.*, Side 4-5 of Wang Cheong House

View V2: More damage observed on the safety net at the side close to Flat 105, suggesting the fire was more severe there as highlighted in red box; and burning droplets were dripping down to the ground level on the side near Flat 104 as highlighted in blue box



Video 4, Light Well 4-5 at Wang Cheong House ²⁴⁷⁰



View V4a-V4c: The fire propagated upward abruptly inside the narrow vertical gap between the kitchens of flats 04 and flats 05. At the later stage of the video, the fire burnt fiercely in the light well, and objects appeared to be bamboo member dropped from height and a paper box dropped comparatively slower (as marked in blue square), whereas suspected burning object (as marked in red circle) was lifted by the upward draught of the fire from the area near light well and then descending gradually.

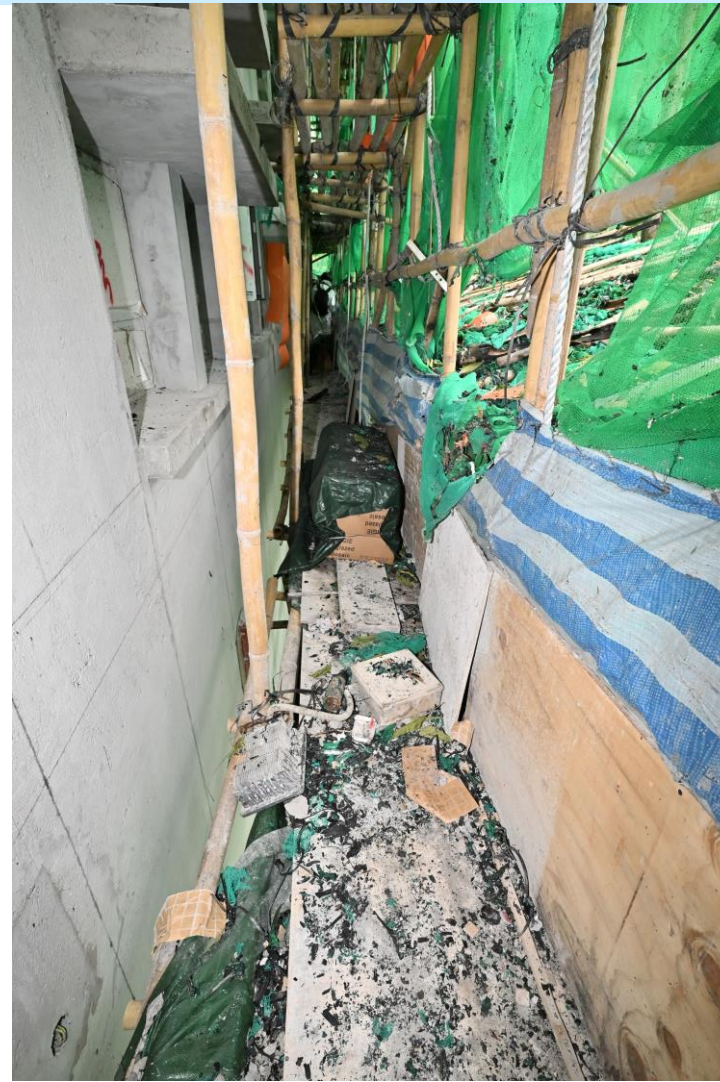
Video 4, Light Well 4-5 at Wang Cheong House ²⁴⁷¹



Examination of Temporary Protective Materials found at Scene

Safety Nets and Plastic Sheeting

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Safety Nets and Plastic Sheeting

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(1) Green Safety Net



(2) Blue white plastic sheeting



(3) Green plastic sheeting

Examination of Safety Nets and Plastic Sheeting ²⁴⁷⁵

Purpose:

- to determine the chemical nature;
- to evaluate and compare the burning behavior when expose to a small flame source

Method:

reference to GB/T 5455-2014 (*a method under National Standard of PRC named “Textiles – Burning behavior – Determination of damaged length, afterglow time and afterflame time of vertically oriented specimens) as stated in requirement GB5725-2009*^{Note}

Note: GB5725-2009 : National Standard of PRC named “ Safety nets 安全網”

- Defined types of safety nets
- Specified requirements, such as 尺寸,耐沖擊力, 耐侯性, 阻燃性能 等多項
- 阻燃性能要求(5.2.29): 按6.2.12规定方法(GB/T 5455)进行测试,纵、橫方向的续燃及阴燃时间不应大于4s
- 檢驗規則 (7)中列明出廠檢驗要求,包括取樣
- 所有檢樣均須通過測試,該批該項才為合格

批量範圍	檢樣數量	合格判定數	不合格判定數
<500或以下	3	0	1
501 – 5 000	5		
≥5 000	8		

Limitations:

- *samples had been used/weathered/affected by the fire*
 - *certification required representative samples from a batch for test*
- *difficulties in verifying original compliance status of the production batch*

Safety Nets and Plastic Sheeting

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		Condition A	Condition B
Application Scope		Determination of burning behavior when flame is applied to the bottom edge of textile vertically oriented	Same as Condition A
Applicable Materials		Textiles and products	Same as Condition A
Test Environment		10-30° C, 30-80% RH	Same as Condition A
Specimen size		300 mm × 89 mm	Same as Condition A
Number of specimens required		10 (5 Lengthwise and 5 widthwise)	5 (3 Lengthwise and 2 widthwise)
Conditioning		Equilibrate under 20°C and 65% Relative Humidity	In oven at 105°C for 30 min In desiccator ≥ 30min
Burner setting:	Angle	Bottom center, burner tilt 25°	Same as Condition A
	Fuel source	Industrial propane/butane or mixture	≥ 97% methane
	Flame Height	40 ± 2 mm	Same as Condition A
	Distance	17 mm between burner tip and specimen bottom edge	Same as Condition A
Flame application time		12 seconds	3 seconds
Result determination		(1) Average value for the afterflame/afterglow time of the 5 Lengthwise specimens; and (2) Average value for the afterflame/afterglow time of the 5 Widthwise specimens	Average value for the afterflame/afterglow time of all 5 specimens
Criteria for safety net		According to GB 5725-2009: average afterflame/afterglow time for both orientations < 4s	

Safety Nets and Plastic Sheeting

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Summary of chemical nature

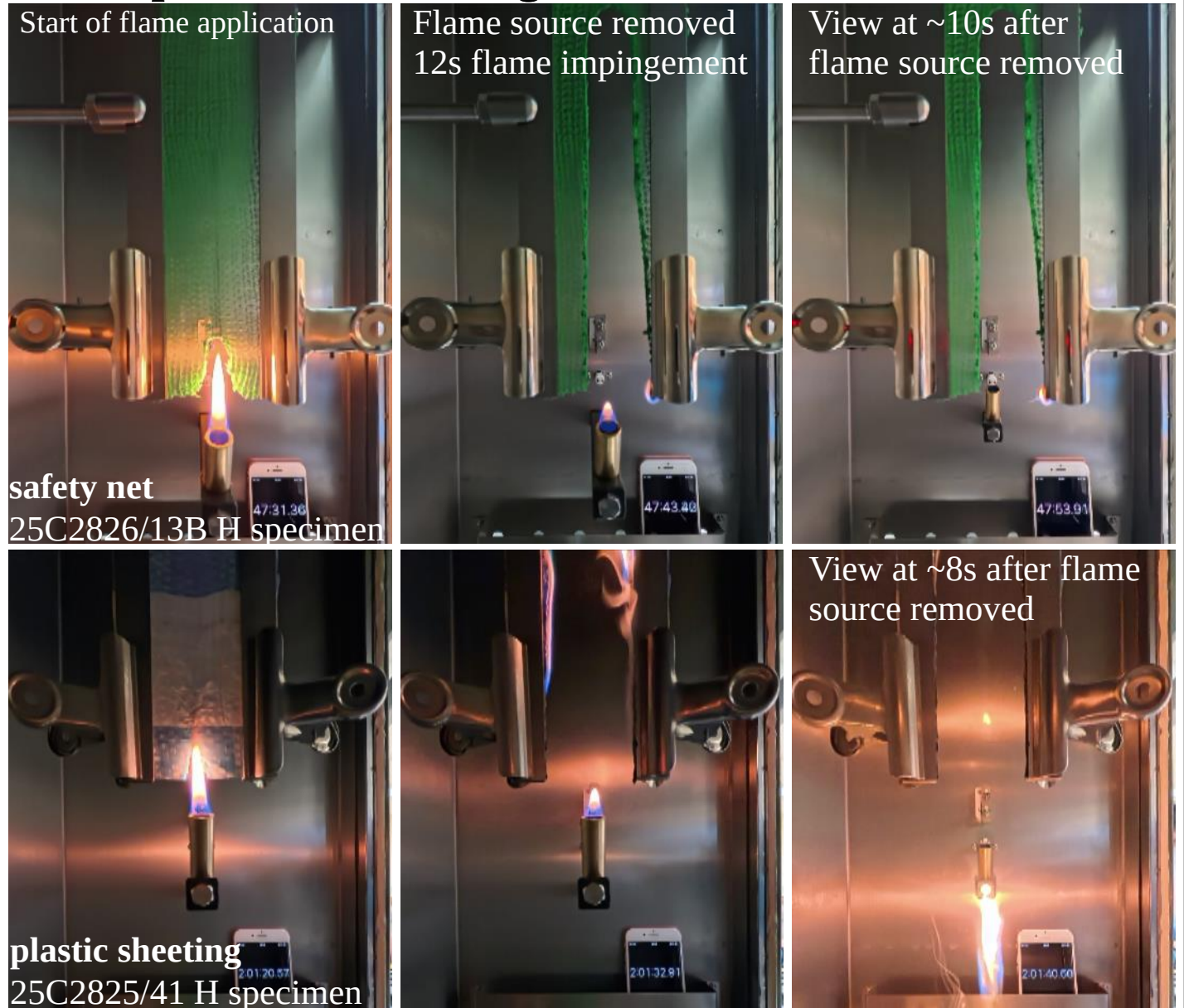
Type of board	Main Constituent
Plastic strip	PP
Green safety net	PE
White safety net	Polyester
Green PS	PE
Blue white PS	PE, PP

Conclusion

PS seized from the scene is more susceptible to sustained burning upon impingement of a flame as compared with the safety nets

All are combustibles

Example views of testing with reference to Condition A



**Example Videos of testing with reference to
Condition A**

Seat of Fire, Light Well 4-5, Wang Cheong House

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Photo 26: View of seat of fire toward the metal gate (substantial amount of burnt remnants of carton paper boxes, found in the area next to the metal fence near Flat 105). Foam board fragments and a corrugated plastic board (A) and a woven plastic bag of backing papers (B) were recovered in the middle area as marked in the blue rectangle

Foam board, CPB, ACP

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Wang Chi House, Room 03 bedroom



Wang Chi House, Room 06 living room

Foam board, CPB, ACP

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Type of board	Major Constituent	Ignition time	Observation
Foam Board (回)	Polystyrene	2.1s	Sustained burning with flaming droplet, no sign of self-extinguishing
Toe board (2mm)	PP	2.7-3.1s	Sustained burning with flaming droplet, no sign of self-extinguishing
2-mm CPB	PP	3.3s	Sustained burning with flaming droplet, no sign of self-extinguishing
5-mm CPB	PP	3.3-4.3s	Sustained burning with flaming droplet, no sign of self-extinguishing
9-mm CPB	PP	30s	Sustained burning for ~23-29s
Foam Board (◇)	Polystyrene	5s, 15s, 30s	Sustained burning for ~6-7s
3-mm ACP	PP+CaCO ₃	10s	Sustained burning for 18s
4-mm ACP	PP+CaCO ₃	30s	Sustained burning for ~8-48s

Note: Compare susceptibility of ignition by a direct small-flame impingement with reference to BS EN ISO 11925-2:2020 (*Reaction to fire tests – Ignitability of products subjected to direct impingement of flame Part 2: Single-flame source test*).

Flame height: 20mm, source: n-butane, distance from bottom edge/angle: 16mm/45°, sample size: 250 mm × 90 mm

THE END