



ASSOCIATION OF
CONSULTING ENGINEERS
SINGAPORE

ACES–SCDF Joint Seminar on CPFPRT

Date: **1st April 2026 (Wednesday)**
Time: **2.00 pm to 5.30 pm**
Mode of Delivery: In-person
Venue: **AUD302, NTU@one-north**
11 Slim Barracks Rise Singapore 138664
Fee: \$40 nett per person for ACES Member
\$60 nett per person for Non-Member
CPD: PDU/FSM to be confirmed

Registration Link
<https://forms.gle/6kKSAzJ3DC3QFTb9>



TOPIC & AGENDA

ACES is organising a joint seminar with Singapore Civil Defence Force (SCDF) on the **Code of Practice for Fire Precautions in Road Tunnels (CPFPRT)**

[https://www.scdf.gov.sg/docs/default-source/fire-safety-docs/cpfprt-edition-2025-\(new\).pdf](https://www.scdf.gov.sg/docs/default-source/fire-safety-docs/cpfprt-edition-2025-(new).pdf)

This seminar will focus on highlighting the key changes introduced in the new **CPFPRFT - 2025 Edition** published by SCDF on 1 September 2025. It is structured to promote active audience participation through interactive discussions, Q&A session, and the sharing of professional experiences. The seminar aims to create a dynamic learning environment where participants can exchange ideas, clarify queries, and gain practical insights directly applicable to their professional practice.

PROGRAMME

Time	Programme	Action By: Speaker / Organization
1:30pm – 2:00pm	Registration	
2:00pm – 2:05pm	Welcome and Opening Remark	Er. Choong Choon Guan / ACES Vice President
2:05pm – 2:30pm (25 mins)	Chapter 2: Means of Escape Chapter 4: Site Planning & Firefighting Provision	CPT Joyce Ng / SCDF
2:30pm – 2:55pm (25 mins)	Chapter 3: Structural Fire Precautions	Er. Chen Bo / LTA
2:55pm – 3:15pm (20 mins)	Chapter 5: Electrical Power Supplies	Er. Adeline Koh / WSP
3:15pm to 3:40pm	Tea Break	
3:40pm – 4:05pm (25 mins)	Chapter 7: Mechanical Ventilation & Smoke Control Systems	Er. Dr. Eric Cheong Mun Kit / LTA
r. 4:05pm – 4:35pm (30 mins)	Chapter 1: General; Table 1.4A: Minimum Road Tunnel Fire Safety Provisions Chapter 6: Firefighting Systems Chapter 8: Emergency Lighting & Voice Communication Systems	Er. Victor Ho / HiLT
4:35pm – 5:00pm (25 mins)	Chapter 9: Additional Requirements Appendix 1 & 2	Er. Dr. Zhang Xu Dong / AECOM
5:00pm – 5:30pm (30 mins)	Q&A Session	Moderator: Er. Yeo Ser Chong
5:30pm	End of Seminar	

SPEAKERS

Org	Synopsis / Speaker	
SCDF	Topic: Chapter 2: Means of Escape & Chapter 4: Site Planning & Firefighting Provision Synopsis: This presentation provides an overview of tunnel means of escape, site planning, and firefighting provisions. These regulations establish comprehensive requirements for designing tunnel infrastructure that supports both emergency response operations and occupant evacuation, including the spacing of emergency exits, firefighting access routes, escape route signage, and water supply systems. Together, these provisions ensure tunnels are designed with effective emergency response capabilities and reliable evacuation options for users. Speaker: CPT Joyce Ng (SCDF) Bios: CPT Ng obtained her M.Arch from NUS in 2015 and has been a consultant with the Fire Safety Department in the Singapore Civil Defence Force since 2021. In her role, she collaborates with qualified professionals to resolve fire safety design issues by processing waiver applications, auditing plans, and conducting site inspections to assess the fire safety readiness of buildings, specifically in healthcare, industrial, and institutional environments. Beyond her core responsibilities, she serves on the committee for the Code of Practice for Fire Precautions in Road Tunnels 2025 and is part of the SCDF project team that collaborated with SIT to launch tertiary fire safety engineering programmes.	
LTA	Topic: Chapter 3: Structural Fire Precautions Synopsis: This session covers Chapter 3: Structural fire precautions to achieve the necessary fire resistance requirement specified under this Code. It gives the targeted audiences a brief instruction of the contents of Chapter 3 which comprises of: fire resistance requirement of structural elements forming road tunnels, fire compartment walls/floors including openings, protected shaft with or without exit staircase, protection of openings, exit staircase, fire stopping materials for openings, testing of fire resistance including “deem to satisfy” provisions. Speaker: Er. David Chen Bo (LTA) Bios: Er. David Chen Bo graduated from Shanghai Jiao Tong University, P.R. China with a bachelor’s degree in civil and structural engineering in 1994. He obtained his Master of Science (Structural) degree in National University of Singapore in 2001. He has been a Singapore Professional Engineer (Civil) since 2008 and a member of Institution of Structural Engineer (IStructE) and Chartered Engineer (Structural) UK since 2008. Currently, David Chen is a Principal Manager in Civil & Structures Division of Infrastructure Design and Engineering Group, Land	

Org	Synopsis / Speaker	
	Transport Authority of Singapore. David Chen also participated in the working groups for the following local codes: ✓ Code of Practice Fire Precautions in Road Tunnels 2025. ✓ Code of Practice for Railway Protection – 2024 Edition. ✓ SS363: 2014 - Specification for steel gratings for roads, drains and walkways. His expertise spans from design and construction of major infrastructure projects, including Circle Line Stage 3 (CCL3) underground stations, North South Corridor (NSC) underground road tunnels / elevated road viaducts, Cross Island Line (CRL) Phase 1 East underground stations / tunnels to residential / commercial high-rise buildings (LTA HQ Office and MOT Office buildings) and large-scale industrial buildings (from Power Plant to Waste To Energy Plant). He is also well experienced on viaduct bearing replacement works ranging from Boon Lay Extension to North-South & East-West Lines.	
WSP	Topic: Chapter 5: Electrical Power Supplies Synopsis: This presentation outlines the electrical resilience standards required to safeguard tunnel fire-safety systems in Singapore. It emphasizes the segregation of essential loads, the use of fire-resistant low-smoke halogen-free cabling, protected routing, and robust emergency circuits. A dual power supply architecture is mandated, coordinated through an Automatic Transfer Switch that seamlessly shifts between grid and generator to ensure uninterrupted operation of ventilation, fire pumps, firefighting controls, lighting, and communications. By formalizing these measures, the SCDF CPFPR 2025 framework sets the definitive benchmark for electrical design in tunnel fire-safety engineering. Speaker: Er. Adeline Koh Bios: Er. Adeline Koh is a Professional Engineer (Electrical) and Senior Director at WSP Consultancy Pte Ltd. She has extensive experience in engineering governance, technical standards, and active involvement in major projects, including MRT lines, Transit Depots, KPE, MCE and commercial developments such as the MBSIR. Adeline holds a BSc (Hons) in EEE from the University of Aberdeen and an MSc from NUS. She serves on the CPFPR committee and is a Council Member of the Association of Consulting Engineers Singapore (ACES), contributing to the advancement of engineering standards and professional practice.	
LTA	Topic: Chapter 7: Mechanical Ventilation & Smoke Control Systems Synopsis: This session will cover the critical requirements for emergency ventilation systems in road tunnels exceeding 1000m in length. Key topics include smoke control strategies for both bi-directional and unidirectional traffic scenarios, design objectives for	

Org	Synopsis / Speaker	
	maintaining tenable environments during fire emergencies, and the technical specifications for ventilation fans, dampers, and sound attenuators. The presentation will also address the determination of critical and confinement velocities to prevent smoke backlayering, temperature and velocity criteria for occupant safety, and the integration of ventilation systems with other fire safety provisions. Practical considerations for system redundancy, fire resistance ratings, and operational procedures will be discussed to ensure effective smoke management and safe evacuation pathways during tunnel fire incidents. Speaker: Er. Dr. Cheong Mun Kit (LTA) Bios: Dr Eric Cheong graduated from the University of Sheffield, UK with a Bachelor of Engineering (Honours) in Mechanical Engineering in 1998. He later completed his PhD in Fire Engineering at the University of Canterbury, New Zealand, specializing in design fires in road tunnels. Currently, he is Deputy Chief Specialist (Tunnel Ventilation and Fire Engineering) at Land Transport Authority of Singapore (LTA), he holds qualifications as a Chartered Engineer (Fire) UK, Professional Engineer (Mechanical), Fire Safety Engineer, and Chartered Engineer (Railway) in Singapore. His expertise spans major infrastructure projects including KPE Road Tunnel, Downtown Line, NEL extension, Thomson Line, and NSC Road Tunnel. He leads the Singapore Fire Test Programme (SFTP) for road tunnels and serves on technical committees for NFPA 502 and Singapore's Codes of Practice for Fire Precautions in both Rapid Transit Systems and Road Tunnels.	
HiLT	Topic: Chapter 1, 6 and 8 of CPFPR-2025. Chapter 1: General; <i>Table 1.4A</i>: Minimum Road Tunnel Fire Safety Provisions Chapter 6: Firefighting Systems Chapter 8: Emergency Lighting & Voice Communication Systems Synopsis: Chapter 1, in particular Table 1.4A of CPFPR 2025, establishes the regulatory framework and minimum criteria for the different road tunnel categories for fire safety provision in Singapore. It sets the foundation for demonstrating life safety through reliability, redundancy, and, where required, engineering analysis assessment. Chapter 6 builds on this by detailing the requirements for fire detection, fire hydrants, fire pumps, and Fixed Fire Fighting Systems (FFFS), with emphasis on redundancy, secondary power supply, and system performance under single-fault conditions. Chapter 8 complements these measures by ensuring emergency lighting, illuminated exit signage, and voice communication systems remain operational during fire scenarios to support safe evacuation and coordinated response via the OCC. Together, these chapters form an integrated life safety strategy that combines regulatory structure, fire control, and evacuation support to meet SCDF's expectations for tunnel fire resilience.	

Org	Synopsis / Speaker	
	Speaker: Er. Victor Ho Bios: HiLT is a member organisation of ACES. Er. Ho Victor is the director of HiLT Pte Ltd. He has dual master's degrees in mechanical engineering and fire safety engineering. His experience in fire safety consultancy has spanned more than 30 years. He practices as a Professional Engineer/Registered inspector in Singapore. He is also a Registered Fire Safety Engineer. He is an adjunct lecturer at the Singapore Institute of Technology and Ngee Ann Polytechnic on topics in fire safety engineering. He was in the working group that authored CPFPR 2025. He is currently serving on the Singapore Master Fire Code Review Committee and is involved in the adoption of UL9540A into Singapore's code of practice. On the international front, his involvement with Underwriters Laboratories (UL) is as a technical committee member of UL 2849, UL3202, and a stakeholder in UL9540.	
AECOM	Topic: Chapter 9: Additional Requirements and Appendix 1 & 2 Synopsis: This session will cover the Tunnel Drainage System, OCC, Fire Safety Report and Fire Safety Instruction Manual. Key topics include the road tunnel drainage system to collect, store and/or discharge effluent from the tunnel. The presentation will share with the design considerations of the drainage system – The control strategies to separate and discharge water and hazardous or flammable liquids respectively. The presentation will also briefly touch on the alternate OCC as well as FSR and FSM. Speaker: Er. Dr. Zhang, Xu Dong Bios: Dr Zhang graduated from Shanghai JiaoTong University with a Bachelor and Master Degrees in Mechanical Engineering. He later completed his PhD in the same field from National University of Singapore. Currently he is an Executive Director for Building Engineering in AECOM Singapore Pte Ltd. He works as a Qualified Person and/or Design Lead for various tunnel projects or the projects with tunnels, which include North-South Corridor (NSC), Airside Road Connection (ARC) for Terminal 5, CIQ Building and Underground Station with Tunnels for RTS, Cable Tunnel from Jurong Island to Pioneer (CTJIP) and Jurong Rock Cavern Service Tunnel, etc.	