SFPE

Engineering A Fire Safe World ®

SFPE

Fire Safety Conference on

PERFORMANCE-BASED DESIGN

15-17 APRIL 2026 | SINGAPORE

PROGRAM SCHEDULE

The Westin Singapore | April 15-17, 2026

12 Marina View, Asia Square Tower 2, Singapore

Engage in three days of advanced learning on performance-based design in fire protection and safety engineering, featuring global experts, case studies, and practical insights to elevate your professional expertise.

Fire Safety Conference on
PERFORMANCE-BASED DESIGN
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CONFERENCE VENUE: THE WESTIN SINGAPORE, 12 MARINA VIEW, ASIA SQUARE TOWER 2, SINGAPORE

13 APRIL 2026 - PRE-CONFERENCE PROGRAMMING

09:00 - 17:00	**Professional Development Seminar:** Substantiating the Suitability of a Fire Model (Day 1), Instructor: Bryan Klein *(Seminar Registration Required)*

14 APRIL 2026 - PRE-CONFERENCE PROGRAMMING

09:00 - 12:00	**Professional Development Seminar:** Substantiating the Suitability of a Fire Model (Day 2), Instructor: Bryan Klein *(Seminar Registration Required)*
13:15 - 16:00	**Architectural Tour of Singapore City Center** *(Registration Required)*
16:30 - 18:00	**SFPE Chapter Leadership Forum** Chapter Leadership Forum is designed for current and prospective chapter leaders who want to improve their knowledge, skills and tactics related to managing all aspects of chapter operations. *(All Chapter leaders are invited)*
18:00 - 19:00	**Welcome Reception (All Invited)**

15 APRIL 2026 – DAY 1

09:00 - 09:15	**Opening Session** Welcome Remarks by Shamim Rashid-Sumar, PE, FSFPE, SFPE President and Chris Jelenewicz, PE, FSFPE, SFPE CEO
09:15 - 10:00	**Opening Keynote** *Daniel Seet, Deputy Commissioner (Future Technology & Public Safety) Singapore Civil Defence Force: Performance-based Regulatory Framework in Singapore - An Enabler to Innovation for a Robust Fire Safety Design Environment* *Singapore's performance-based (PB) regulatory framework balances compliance with innovation, enabling fire engineers to design creative solutions while maintaining safety. Fire Safety Engineers (FSEs), guided by the Singapore Fire Engineering Guidelines (SFEG), can propose alternatives that achieve equal or better outcomes than prescriptive requirements. This approach is valuable for complex projects like mixed-use developments, heritage sites, underground infrastructures, and for addressing emerging technologies like electric vehicles and energy storage systems. Research at the Civil Defence Academy's Fire Research Centre underpins the framework by studying fire behaviour, smoke movement, and possible impact on evacuation in Singapore's dense, tropical environment. Full-scale fire tests validate computational models, while findings inform Fire Code updates on issues such as setback distances and vertical fire spread.* *Key innovations include streamlined approvals, continuing education for FSEs, and strong industry collaboration. Together, these ensure that the framework remains adaptive to new technologies while safeguarding public safety. By combining flexibility with rigor, Singapore is well-positioned to tap on performance-based fire engineering to enhance both safety outcomes and design possibilities.*
10:00 - 10:30	**General Session** *Victor Ho, PE, Institution of Fire Engineers, Singapore / HiLT Pte Ltd: Singapore's Regulatory Framework for Performance-Based Design (PBD) – A Practitioner's Journey.* *Singapore's official adoption of Performance-Based Design (PBD) in 2004 under the Fire Safety Act marked a pivotal shift from a prescriptive code to a flexible, engineering-led framework. This transition, however, presented significant teething challenges for practitioners. The initial phase was characterized by the over-application of PBD to minor issues, leading to prolonged approval times and difficulties in managing client expectations regarding the cost and complexity of the process. A critical turning point came in 2013 with the formation of the PBD Guideline Committee, a collaborative effort between the Singapore Civil Defense Force (SCDF) and industry professionals. This initiative directly addressed early inefficiencies by standardizing assessment methods for common alternative solutions. The resulting guidelines provided essential clarity on accepted methodologies, performance criteria, and documentation standards. From a practitioner's perspective, this evolution transformed PBD from a novel but cumbersome tool into a refined and efficient system. The journey from an ad-hoc process to a standardized framework has enhanced professionalism, fostering a more predictable and transparent pathway for design innovation while maintaining rigorous fire safety standards in the built environment. This paper chronicles the journey from the early years of waivers to the present-day regulatory framework from a practitioner's perspective.*
10:30 – 11:00	**Morning Networking Break**

11:00 - 12:00	General Session *PANEL DISCUSSION: International Perspectives on PBD in Practice* *Panelists: Antonio Cicione, PrEng, PhD, Beng (South Africa), Luca Fiorentini, Prof., PE (Italy), Debbie Scott, BE Hons, ME Dist. (Fire), FEngNZ, CMEngNZ, CPEng, IntPE(NZ), FSFPE (New Zealand), David Stacy, PE, (USA), Karl Wallasch, Dipl.-Ing. CEng MIFireE PMSFPE (United Kingdom)* *Moderator: Brian J. Meacham, Ph.D., P.E. (CT&MA), CEng. (UK), EUR ING, FIFireE, FSFPE* *Performance Based Design (PBD) has become an essential tool for advancing fire safety engineering, yet its application varies dramatically across jurisdictions. This panel brings together international experts to explore how PBD is interpreted, implemented, and regulated around the world. Each panelist will open with a brief introduction to their regional context before engaging in a dynamic discussion on the practical realities of performance driven fire safety. The conversation will examine how differing regulatory frameworks shape the use of PBD, what "performance based" truly means in practice, and how engineers adapt their analytical approaches to align with local expectations. Panelists will share the challenges they encounter and the strategies they use to navigate them. The group will also reflect on what changes within regulatory systems could better support robust, transparent, and innovative PBD approaches.*	
12:00 – 12:15	**SPONSORED PRESENTATION** General Session Gerd Huelsen, Dipl.-Ing., Fire Application Engineering: Early Detection of Cell Venting in Battery Storage Systems – The Key to Fire Safety	
12:15 - 13:30	**Networking Lunch**	
	TRACK A PBD Codes, Frameworks and Guides	TRACK B Heritage Properties
13:30 - 14:00	*Brian Meacham, PhD, PE (CT & MA), CEng (UK), EUR ING, FSFPE, FIFireE, Meacham Associates/Lund University: Evolution of PB Codes and Design for Fire: A 30-year Retrospective*	*Lorna Johnson, AIFIreE, MEng (Hons), Arup: King's Theatre - Fire Safety of the Redeveloped Cultural Heritage Icon*
14:00 - 14:30	*Nathan Birmingham, PE, Code Red Consultants, & David Stacy, PE, Summit Fire Consulting: Performance-Based Design in Practice: Bridging Innovation with Project Realities*	*Karl Wallasch, Dipl.-Ing. CEng MIFireE PMSFPE, Trigon Fire Safety: Application of PBD for a Refurbishment of a Listed Hotel*
14:30 - 15:00	*Manuel Kitzlinger, Dr.-Ing, & Prof. Dr. Claudius Hammann, Technical University of Munich: A Theoretical Analysis and Systematic Differentiation of Engineering Verification Approaches in Fire Safety, based on the Principles of the German Standard*	*Hanna Ivansson, MSc, & Martina Enochsson, MSc, Brandskyddslaget AB: Evacuation Through Inward-Opening Doors – Impact of Individuals with Movement Impairment*

15:00 - 15:30	**Afternoon Networking Break & Poster Presentations**	
	TRACK A Project Examples/Applications of PBD Solutions	TRACK B SFPEs Work in Promoting PBD
15:30 - 16:00	*Joelle DeJoseph, PE, Senez Consulting, Inc.: Lithium-Ion Battery Manufacturing – Facility Design Using Performance-Based Design*	*Joshua Reichert, PE: SFPE Performance-Based Design Standard*
16:00 - 16:30	*Kit Ying & Anny Ip, MIFireE, MHKIE, RFE(Fire), Arup: Revolutionizing Stadium Safety: Cutting-Edge Fire Protection Strategies for Mega Multi-Functional Venues*	*Warren D. Bonisch, PE, FSFPE, WJE Fire and Life Safety: Update on the SFPE's Guide for the Assessment of Existing Buildings*
16:30 - 17:00	*Pedro Armijo, PE, CEng, Int.PE, IFE, Jensen Hughes: Super Complex Road Tunnels Network Supporting Logistics for a New City Development – A Fire Engineering Case Study*	*Craig E. Hofmeister, P.E., FSFPE, LEED AP: Guidelines for Substantiating a Fire Model for a Given Application*
17:30 – 18:30	**Networking Reception at 33rd floor – Cook & Brew (All Invited)**	

16 APRIL 2026 – DAY 2

08:00 – 09:00	Sponsored Presentations *Breakfast Product Showcase by Industry Sponsors*
09:00 – 09:05	Welcome to Day 2
09:05 – 09:35	**Top Abstract Presentation** General Session Victoria Lutz, Jonathan Hodges, Amanda Kimball: Validation of Passenger Vehicle Design Fire HRRs Using Full Scale Test Data *As the global automotive market shifts towards larger vehicles and embraces battery electric technology, traditional assumptions about vehicle fire behavior are being challenged. Historically, full-scale fire testing of passenger vehicles has indicated peak heat release rates (HRRs) ranging from 5 to 10 MW. However, recent studies suggest that these values may be non-conservative for modern, larger vehicles. These hypotheses were confirmed in recent testing of large passenger vehicles conducted by the NFPA Fire Protection Research Foundation. This presentation will discuss the complex interplay between vehicle size, fire initiating location, and suppression technologies in shaping design fire scenarios for both internal combustion engine vehicles (ICEVs) and battery electric vehicles (BEVs). The presentation will include a systematic review of the data in the literature as well as presentation of new data collected by the NFPA Fire Protection Research Foundation. The data are used to expand the validation basis of a model for passenger vehicle HRR and thermal exposure to targets. Recommendations will be provided on scenarios for use in design which consider the evolving hazard profile, range of potential scenarios which could occur, and the effectiveness of mitigation strategies.*
CASE STUDY PRESENTATIONS: Electric Vehicle Charging in High-Rise Car Parks	
9:35 – 9:45	**Case Study Introduction**
9:45 – 10:15	**Case Study Presentation – Team FSRI USA** Mark McKinnon, Jonathan Hodges, Matt DiDomizio, Nate Sauer
10:15 – 10:45	**Morning Networking Break**
10:45 – 11:15	**Case Study Presentation – Team SFPE Canada** Kieran Ager, Hong Tsui, Antonella Gennusa, Ishraat Masood, Kyle Duckworth, Evan Ford, Will Shorthouse, Stefan Germann
11:15 – 11:45	**Case Study Presentation – Team East Meets West: Batteries Not Included** Nate Birmingham, Hugo Choi, Jie Loh, Joseph Vaughn
11:45 – 12:15	**Case Study Presentation – Team SFPE Korea** Jin-Soo Kim, Jong-Hoon Kim, Jeong-Hyun Yoo, Woon-Hyung Kim, Kil-Joong Kim, Bo-Hyeok Seo, Yo-Han Seol
12:15 – 13:30	**Networking Lunch**

	TRACK A Project Examples/Applications of PBD Solutions	TRACK B Evacuation/Digitalization
13:30 – 14:00	*Peter Senez, P.Eng., PhD, FSFPE, Senez Consulting Ltd.: The Impact of Furniture Fire Controls on the ASET in a Ventilation-limited 2-storey House*	*Yoshikazu Minegishi, PhD, PMSFPE, PE, Building Research Institute, Japan: Achieving Inclusive Evacuation for People Without Disabilities and Wheelchair Users through Occupant Evacuation Operation Elevators: A VR experiment with Free Movement*
14:00 – 14:30	*Spencer Johnstone, MFireEngSt, BEng(Hons), Beca Ltd: Fire Engineering Evolution – Competence vs. Complexity: Lessons from the Auckland Sky Tower*	*Tong Lu, PhD Student, The Hong Kong Polytechnic University: A GNN-LSTM Framework for Multi-Level Emergency Evacuation Flow Prediction in Transportation Infrastructure*
14:30 – 15:00	*Pin-Ping Hsieh, M.S., PhD Student, & Captain, Fire Bureau, Kaohsiung City Government: Investigation and Measurement of the Smoke Generation Rate from Smoke Generation Devices in Full-scale Hot Smoke Tests of Buildings*	*Ervin Cui, PE, PhD, Wiss Janey Elstner Associates: Evaluation Study on Performance of Evacuation Elevators in Skyscrapers*
15:00 – 15:30	**Afternoon Networking Break & Poster Presentations**	
	TRACK A Fire Safety Topics	TRACK B Fire Safety Topics
15:30 - 16:00	*Radek Sikorski, MSc Eng., & Izabela Tekielak-Skałka, PhD, SMAY Ventilation Systems: Engineering the Stack Effect for High-Rise Pressurization Systems*	*Diana Prostire, MEng AIFireE, Fire Dynamics Group: Reliability-Based Fire Performance Assessment for Optimising Passive Protection in High-Rack Steel Warehouse Structures*
16:00 – 16:30	*Anoop Subramania Warrier, PhD, Univ. of Lancashire/Xeluxe Fire Safety Consultancy & Meet Panchal, MSc, ICEM: Externally Venting Flames from Curvilinear enclosures: Large scale Experimental and Numerical Investigation on the Effects of Ventilation*	*Kristin Weniger, PE, PMSFPE, Koffel Associates: Performance-based Design Approach for Open Air 19,000 Ticket Music Amphitheater*
16:30 – 17:00	*Luca Fiorentini, Prof., PE, TECSA S.r.l.: A Framework for Assessing Risks Associated with HAZMAT Storage and Handling Procedures at HTOL Spaceports in Italy*	*Julian Mendez, PhD, GradIEAust, Solis Fire Engineers: A Simplified Framework for Exposed CLT Slabs in High-Rise Buildings*

17 APRIL 2026 – DAY 3

9:00 – 9:05	Welcome to Day 3	
CASE STUDY PRESENTATIONS: Existing Historic Building Adaptive Reuse		
9:05 – 9:15	**Case Study Introduction**	
9:15 – 9:45	**Case Study Presentation – Team Back to Basics (UK)** Dr. Simón Santamaria, Prof. Jose Torero, Dr. James McNay, Gabriel Risco	
9:45 – 10:15	**Case Study Presentation – Team SFPE Poland** Wojciech Węgrzyński, Marcin Cisek, Michał Zugaj, Jakub Bielawski	
10:15 – 10:45	**Morning Networking Break**	
10:45 – 11:15	**Case Study Presentation – Team SFPE New Zealand** Grace Hitchcock, Hui Qing Ng, Debbie Scott, Sherry Wang, Zun Pwint Phyu	
11:15 – 11:45	**Case Study Presentation – Team SFPE Japan** Mitsuho Enomoto, Akihide Jo, DANG Manh Cuong, Yuto koike, Ken-ichi Takayama, Lingjun Guan, Mihoshi Kojima, Hikaru Ota, Yoshikazu Minegishi	
11:45 – 12:15	**Case Study Presentation – IFCteam, Italy** Luca Fiorentini, Piergiacomo Cancelliere, Sonia Maria Scarpellini, Elisabetta Schiavone, Salvatore Tafaro, Fabrizio Vazzana, Luca Marmo, Andrea Respighi, Rosario Sicari, Raffaele Sabatino, Fabio Dattilo, Emanuele Gissi	
12:15 - 13:30	**Networking Lunch**	
	TRACK A Battery Fires/Battery Storage	TRACK B Risk-based Approaches
13:30 - 14:00	*Wai Cheong (Andy) Tam, PhD, National Institute of Standards and Technology: Ignition Prevention from Overheating: Experimental Insights into Safe Intervention Windows for 18650 and 21700 Lithium-Ion Batteries*	*INVITED: Kyle Christiansen: A Risk-Informed Performance-Based Approach to Regulatory Changes for Fire Safety*
14:00 - 14:30	*Simon Krishnan, FIEAust, CPEng, Astrix Fire Safety Certification & MC Hui, MEng, CPEng, CEng, NER, FIEAust, RED Fire Engineers: Fire Safety Challenges and Design Considerations for Car Parking Structures Housing Battery Electric Vehicles*	*Eric Tonicello, BSc, ISI - Ingénierie et Sécurité Incendie sàrl: Bringing Existing Structures into Compliance: A Fire Safety Challenge*

14:30 - 15:00	*Md Ismail Siddiqi Emon, National Institute of Standards & Technology: Multimodal Detection Framework of Lithium-Ion Battery Thermal Runaway*	*Sigurjon Ingolfsson, MSc, Arup: Fire Remediation of a Historical Hospital*
15:00 - 15:30	**Afternoon Networking Break**	
	TRACK A PBD Codes, Frameworks and Guides	TRACK B Risk-based Approaches
15:30 – 16:00	*Andrea Franchini, PhD, Ghent University: How to Make Optimal Use of your Fire Tests for Performance-based Design*	*Shiv Jadeja, Nishin Haris: Performance Based Fire and Gas Detection Design - An EPC Contractor's Perspective*
16:00 - 16:30	*Adam Glew, MEng (Hons) MIEAust AIFireE, Arup: Carpark Fire Safety - Towards Holistic, Performance-Based Design to Enable a Sustainable, Resilient Future*	*Shimon Seng, MIEAust, RED Fire Engineers: So Far As Is Reasonably Practical (SFAIRP) Approach to the Access Upgrade Work for a School in Bushfire Prone Land*
16:30 - 17:00	*Martin Feeny, Holmes NZ Lp: Fire Protection Strategy for a Major Airport Expansion - Resilience, Operability and Future Readiness*	*M.C. Hui, PE, MSFPE, CPEng, FIEAust, CEng, FIFireE, MEng, RED Fire Engineers: A Risk-based Approach to Determine the Tolerable Length of Residential Common Corridors*