

FIRE AUSTRALIA

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FIRE PROTECTION TAKING A MORE VISIBLE ROLE

SCOTT WILLIAMS

Chief Executive
Officer, Fire Protection
Association Australia



The past year has been one of change, but strong accomplishments. While the headlines are now rightly focused on the recent tragic bushfires, much of the past year was dominated by the expanding issues around poor building compliance and quality in Australia, which added energy to the reforms set rolling with the Shergold-Weir report.

In accordance with FPA Australia's commitment to advocate for continuous improvement of policy, legislation, codes and standards, the Association has dedicated significant resources to providing input

and responses to the many simultaneous reforms happening around the country in the building and construction space.

While much of this effort is out of sight for our members, it is critical work. Ensuring regulations that govern fire protection are fit for purpose, practical and effective is fundamental both to the future of the fire protection industry, but also to the safety of the community.

The level of involvement FPA Australia now has in these reforms reflects its increasingly influential role. This expanded role, however, raises a new challenge. With invitations for participation coming from regulators at all levels, we need to make strategic decisions about where best to invest our limited resources.

Prioritising where those resources go over the next four years is the purpose of our Strategic Directions 2019–22. Accordingly, over the past year the Association began building the groundwork for a number of major new initiatives.

Perhaps most important among these has been the significant investment to develop and launch the new Fire Safety Assessment class of FPAS accreditation, which has been officially recognised by the NSW Government and will be gazetted in early 2020. In addition, the construction of the NSW Training Centre of the Fire Protection Training Academy heralds a new era for the Australian fire protection industry, giving us training facilities on a par with the best in the world, when doors open later this year.

As the fire protection industry is called upon to take a more visible and influential role, we must ensure we stay focused on our primary purpose—a safer community where loss of life, injury and damage to property and the environment from fire are eliminated through effective fire protection.

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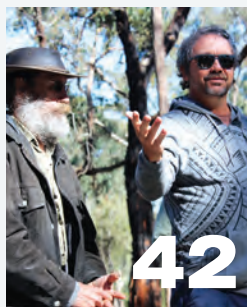
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OUR COVER

Qazi Samia Razzaque wins the Young Achiever of the Year Award at the Fire Protection Industry Awards 2019.

PHOTO: TOM BICKNELL, FPA AUSTRALIA

ABOUT FIRE AUSTRALIA

Fire Australia is a joint publication of Fire Protection Association Australia, AFAC and the Bushfire and Natural Hazards CRC. We aim to bring the latest news, developments and technical information to the fire protection industry, emergency services and natural hazards research organisations. *Fire Australia* is produced quarterly and distributed throughout Australia and New Zealand. Editorial submissions are welcome and can be sent to: tom.bicknell@fpaa.com.au. For more details on submitting a contribution, please contact the editors.

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AUSTRALIA'S VOICE AT GLOBAL WILDFIRE CONFERENCE

The Seventh International Wildland Fire Conference (IWFC) was hosted in Campo Grande, Brazil from 27 October to 1 November 2019, and addressed the theme 'facing fire in a changing world: reducing vulnerability of people and landscapes by integrated fire management'.

IWFC welcomed 1,100 delegates from 37 countries. While about 80% of those in attendance were from South and Central America, there was solid representation from all regions of the world, with real-time translations provided for all sessions.

Conference discussions strongly reinforced that many of the key issues in wildland fire management are shared across the globe, including integrated approaches to planning and mitigation, diversity and inclusion, Indigenous fire knowledge, smoke management and effective use of data.

The local community was invited to take part in the conference by registering and attending sessions. Likewise, children and schools were included in the program through fire awareness video and poster competitions.

Australia was represented on the conference's International Liaison Committee by Dr Noreen Krusel, AFAC Director Knowledge and Research Utilisation, and Richard Alder, National Aerial Firefighting Centre (NAFC) General Manager. Both presented as speakers at the conference and submitted posters.



PHOTO: AFAC

Mr Alder also presided as chair of the International Fire Aviation Working Group.

Dr Krusel presented a talk on the theme 'fixing the system, not fixing the women' as an invited speaker on the Women in Fire panel. Dr Krusel also took the opportunity to share significant national initiatives for Australia, including the Australian Fire Danger Rating System and the Centre of Excellence for Prescribed Burning.

Mr Alder presented on the use of information technology to optimise the application of aircraft in managing wildfires and the sophisticated approach to aerial firefighting that NAFC is leading. Mr Alder also presented the statement from the International Fire Aviation Working Group during the final plenary session of the conference.

Dr Krusel and Mr Alder were involved in crafting the IWFC conference statement: *Building Sustainable and Fire-Resilient Societies and Landscapes*. After an intensive drafting session, the statement was endorsed by conference participants, with a standing ovation at the final plenary session. The statement is inclusive, integrated and recognises that the traditional fire management paradigm cannot deal with the growing global incidence of wildfire and subsequent impacts.

The IWFC is held every four years and will return in 2023, hosted in Portugal. ■

The International Liaison Committee at the Seventh International Wildland Fire Conference in Brazil.

View the conference statement here:
www.afac.com.au/docs/default-source/communications/iwfc-7-statement.

UNDERSTANDING MODELS FOR SPONTANEOUS VOLUNTEERING

The dominant image of spontaneous volunteering in Australian emergency management—of many disorganised outsiders converging on an affected community—is overly narrow and unhelpful for emergency planning.

The research in *Hazard Note 64*, from the Bushfire and Natural Hazards CRC, provides evidence and a tool to better understand these volunteers and how they come together. It uses case studies of humanitarian aid organisation Samaritan's Purse after the 2015 Pinery bushfire in South Australia, and Lismore Helping Hands after the 2017 NSW floods, to demonstrate the narrowness of the dominant image.

The research developed a typology

of spontaneous societal responses to disasters, which planners can use to help them understand the links to the affected communities and motivations for action. This can help them prepare for diverse forms of spontaneous volunteering that may be more realistic for their hazard conditions, communities and jurisdictions. This typology is included in Australia's first national handbook on planning for spontaneous volunteers, *Communities responding to disasters: planning for spontaneous volunteers*, published in 2018 by the Australian Institute for Disaster Resilience. ■

Read *Hazard Note 64* here:
www.bnhrcr.com.au/hazardnotes/64.



PHOTO: LISMORE HELPING HANDS

Spontaneous volunteers with Lismore Helping Hands assisted in the clean up after the 2017 floods in northern NSW.

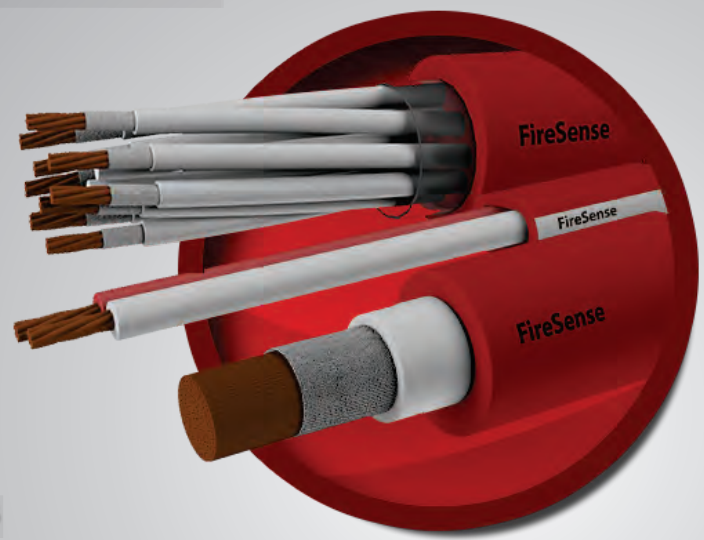
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NEW SOUTH AUSTRALIAN MINISTERIAL BUILDING STANDARDS

New Ministerial Building Standards have been implemented in outback areas of South Australia and will roll out across the state by mid-2020, with some flow-on impacts for the fire protection industry.

As Fire Protection Association Australia (FPA Australia) advised members earlier this year, the new Ministerial Building Standards replace the earlier specifications. The change brings these documents in line with the terminology and updated requirements of South Australia's *Planning, Development and Infrastructure Act 2016*, and also introduces some general improvements.

Four of the new Ministerial Building Standards and the new Act have now been implemented in outback areas under a rollout plan, which the South Australian Department of Planning Transport and Infrastructure (DPTI) plans to complete by July 2020. These four Standards are:

- ◆ **Ministerial Building Standard**
SA 001 – *Upgrading health and safety in existing buildings*
- ◆ **Ministerial Building Standard**
SA 002 – *Maintaining the performance of essential safety provision*
- ◆ **Ministerial Building Standard**
SA 003 – *Fire safety in caravan parks and residential parks*

◆ Ministerial Building Standard

SA 006 and SA 007 – *Modifications to the application of the Building Code*.

Under Phase One of the rollout plan, these Standards and the Act are now operational in outback areas referred to as 'Land Not Within a Council Area'.

Phase Two will introduce the new legislation in rural council areas in early 2020, and Phase Three will introduce it to urban and regional council areas in mid-2020.

There is also a draft Ministerial Building Standard SA 008 in relation to 'Additional requirements in designated bushfire prone areas', which has just finished a public consultation period.

FPA Australia provided feedback to DPTI on the draft version of SA 002 *Maintaining the performance of essential safety provision*, some of which has been adopted in the final version.

The Association is also currently in discussion with DPTI about improving its engagement with industry regarding the new regulations. ■

More detail about the DPTI's rollout plans

is available on its website: www.dpti.sa.gov.au.

MONOGRAPHS SHARE SCIENCE

The latest natural hazards science from the Bushfire and Natural Hazards CRC Research Forum has been published in two special editions of the *Australian Journal of Emergency Management* Monograph series.

The Research Forum was hosted in August 2019 as part of AFAC19 powered by INTERSCHUTZ in Melbourne. The research shares outcomes that help provide decision-makers with the evidence, information and tools to make critical decisions.

Monographs 4 and 5 include peer-reviewed research and non-peer reviewed extended abstracts covering topics including fire behaviour, predictive services and modelling, capability and risk.

The CRC's Research Forum explored how research outcomes can be further integrated into policy and practice to contribute to disaster risk reduction and to make our communities more resilient to disasters.

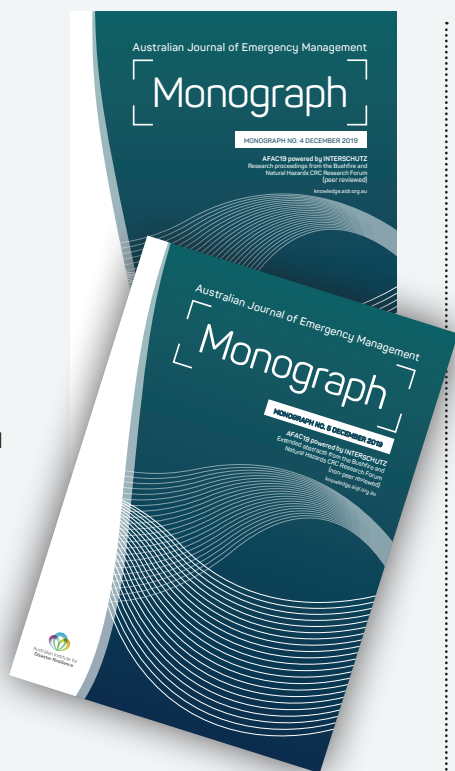
The CRC's Research Director Dr John Bates encourages all people who deal with natural hazards to read through both publications.

"It is more important than ever to incorporate the latest science into

decision-making, in order to build a disaster resilient Australia," Dr Bates said.

"The Australian Journal of Emergency Management Monographs are a contribution to the broader discussion around our intensifying risk and what this means for emergency management in the future." ■

Both Monographs are available for download at www.knowledge.aidr.org.au.



FIVE NEW AND REVISED AFAC DOCTRINES PUBLISHED

Following approval from AFAC National Council, five new and revised doctrines have been made available on the AFAC website.

The guidance documents span the topics of community safety and resilience, as well as best-practice approaches to tools and technologies encountered by the fire and emergency services, including remotely piloted aircraft and PV array systems.

Doctrine is AFAC's most significant intellectual property asset. It is developed through the AFAC Collaboration Model and aligns to the values of AFAC's Strategic Directions.

The latest additions to the suite of doctrines are:

- ◆ **Resilience through Community Risk Reduction**
- ◆ **AFAC Position on PV Array Systems**
- ◆ **Management of Remotely Piloted Aircraft (RPA) at or Near Fire and Emergencies and Prescribed Burning Operations**
- ◆ **Flood and Severe Weather Community Safety Position**
- ◆ **Emergency Services Support Role to Deliberate High Threat Incidents.**

Doctrine is evidence-based, constantly reviewed and vested as the official view by the AFAC National Council and sector leaders. ■

Visit the AFAC website to explore doctrine: www.afac.com.au/insight/doctrine.

INTERNATIONAL MEETING SETS STANDARDS FOR FIREFIGHTER PPE

The International Standards Committee for Firefighters' Personal Protective Equipment (PPE) met in Melbourne to discuss future standardisation to improve safety.

The intention of PPE is to safeguard firefighters against all known possible hazards encountered through their duties. To ensure the standardisation of PPE performance, international standard ISO/TC 94/SC14 *Firefighters' Personal Protective Equipment* was established in 2000.

From 12 to 14 November, ISO/TC94/SC14 working groups were hosted by AFAC in Melbourne to continue discussions about firefighter safety and PPE, and progress the development of ISO standards for firefighters.

Work has commenced with the endorsement of an ISO new work item to develop a standard for the cleaning, maintenance and repair of firefighters' PPE. Over two meetings—in Arnhem, Netherlands in June 2019 and Melbourne in November 2019—SC14 Working Group 1 considered 480 comments concerning PPE cleaning, maintenance and repair, highlighting the interest in this complex standard. A period of 48 months has been allocated to develop this standard and by all indications it will require the entire period to resolve.



Japanese delegates attending the working group meeting in Melbourne.

PHOTO: AFAC

SC14 Working Group 5 has developed and published six standards for use during rescue activities, such as road crash and urban search and rescue, and at the Arnhem meeting the group agreed to develop a new standard for water rescue. At the Melbourne meeting, they appointed Arthur Tindall as project leader to develop this standard. Mr Tindall is both chair of the AFAC PPE Technical Committee and secretary of SC14 Working Group 3 for wildland PPE, and his appointment is a great outcome for Australia.

The intention of the new international standard for water rescue is to specify test methods and minimum performance requirements for PPE used by firefighters engaged in rescue activities undertaken on the surface of a body of water or on unstable surfaces. PPE covered by this section of the standard will comprise clothing,

gloves, headwear, footwear, face and eye protection and hearing protection, which provide protection from physical, thermal and environmental hazards.

An ISO standard for personal protective ensembles for use against chemical, biological, radiological and nuclear (CBRN) agents has recently been approved as a new work item for the SC14/SC13 CBRN joint working group. Following the meeting in Arnhem the first draft was released. The draft attracted 161 comments, which were addressed at the November meeting in Melbourne. Agreement has now been reached for the draft to proceed to a formal committee draft, which will close in time to be discussed at the June 2020 meeting in Hanover, Germany.

The next meeting of ISO/TC94/SC14 will be held in Hanover, Germany during the week of 22 to 26 June 2020. ■

FPA AUSTRALIA LAUNCHES NEW DESIGN REGISTER FOR NSW REFORMS

Fire Protection Association Australia (FPA Australia) has launched a new register of fire protection practitioners to connect building industry professionals with FPA Australia corporate members, who currently prepare plans and specifications for the installation or modification of fire safety systems in NSW.

The new Fire Systems Design—NSW Interim Register is a response to the NSW building reforms, which primarily cover fire safety and came into effect on 1 October 2017. The reforms require some types of fire protection work in NSW to be conducted by a 'competent

fire safety practitioner' (CFSP), in particular the preparation of plans and specifications for the installation or modification of fire sprinkler systems, fire hydrant systems, fire hose reel systems or fire detection and alarm systems.

Until the Fire Protection Accreditation Scheme (FPAS) is recognised by the NSW Government during 2020, building certifiers are required to satisfy themselves that practitioners conducting this work are competent. You can read more about the reforms at FPA Australia's NSW reforms FAQ.

The Interim Register lists practitioners that currently conduct this work, and have met FPA Australia's minimum

requirements for experience, insurance, professional conduct and commitment to future accreditation under FPAS.

This new Interim Register complements the existing Fire Systems Design—Accredited Practitioner Register, which lists individuals who hold the FPAS Fire Systems Design (FSD) class of accreditation.

FPA Australia recommends that building certifiers in NSW use accredited individuals listed on the National Register as a first option, but have made the new Fire Systems Design—NSW Interim Register available whilst individuals undertake their journey to becoming accredited under FPAS. ■

AUSTRALIAN FIRE DANGER RATING SYSTEM: PREPARING FOR CHANGE

The Australian Fire Danger Rating System (AFDRS) recently reached several milestones that will see states and territories prepare for change.

The program has just completed an extensive series of consultation workshops in all Australian jurisdictions. Design elements emerging from social research were presented to jurisdictional representatives across many sectors including land, fire, health, education and industry, to ensure it meets their requirements and to document change management needs.

Across each state and territory 181 people from 90 different agencies and industry bodies participated. The findings of the consultation process—documented in the *National Consultation Workshop Outcomes* report recently accepted by the AFDRS Board—endorsed the social research-informed design, noting additional work required to refine design elements and



PHOTO: AFRC

Australian Fire Danger Rating System workshops were held across every state and territory.

manage the change process.

The AFDRS Board approved the *Change Management Plan* to support jurisdictions and organisations involved in the complex task of adapting to the new AFDRS. Over the next three years, jurisdictions will need to refine the design of the AFDRS and manage changes to legislation, policy, procedures, information systems, web pages, training, engagement, communications and signage.

Various state and Commonwealth agencies are responsible for implementing the new AFDRS through their jurisdictional member and

their representatives on the Change Management Coordination Group. An AFDRS Change Management Team will support the change process.

The NSW Rural Fire Service (RFS) has initiated the development of the operational build for the AFDRS, which will provide a Fire Behaviour Index for use by agencies and industry professionals and will also underpin the ratings. It will be developed by a contractor and the Bureau of Meteorology. NSW RFS is also prototyping related indices including the Ignition Likelihood Index, Suppression Index, and Fire Impact Index. ■

LOCAL GOVERNMENTS LEARN FROM RESEARCH

Local government emergency managers in Western Australia have been upskilled in their decision-making, thanks to Bushfire and Natural Hazards CRC research.

In partnership with the Western

Australia Local Government Association (WALGA), CRC researchers Associate Professor Ben Brooks and Dr Steve Curnin from the University of Tasmania facilitated two workshops in Perth during October 2019, with more than 30 participants from local governments across WA taking part.

The Stretch Thinking for Crisis and Emergency Management workshops explored decision-making theory, with participants exploring the influence of psychological safety and cognitive bias and discussing examples of best practice.

The workshops form part of the CRC project Improving Decision-making in Complex Multi-team Environments, which was awarded a Department of Fire and Emergency Services grant through the All West Australians Reducing Emergencies program to run the workshops in partnership with WALGA. ■



PHOTO: BUSHFIRE AND NATURAL HAZARDS CRC

Local government representatives in a Stretch Thinking for Crisis and Emergency Management workshop with CRC researchers Dr Steve Curnin (left) and A/Prof Ben Brooks.

ABCB ANNOUNCES OUT-OF-CYCLE NCC AMENDMENT

The Australian Building Codes Board (ABCB) has announced it will undertake an out-of-cycle amendment for the National Construction Code (NCC) 2019, enhancing fire safety measures and adding clarifications.

NCC 2019 Amendment 1 will contribute to some of the recommendations made by the Shergold-Weir *Building Confidence* report into the problems with quality and compliance in Australia's construction sector.

The amendment will include:

- ◆ enhanced fire safety measures for early childhood centres in high-rise buildings
- ◆ a defined term for 'building complexity' to be used to identify buildings for which it is appropriate to have increased supervision of design and construction through subsequent initiatives being developed in response to recommendations of the *Building Confidence* report
- ◆ provisions that set out the process to be followed, including the creation of a Performance Based Design Brief, to improve the quality and clarity of performance solutions for both approval and auditing purposes. This is also in response to recommendations of the *Building Confidence* report
- ◆ clarification of existing concessions for low-rise Class 2 and 3 buildings
- ◆ reference to a new technical specification for the permanent labelling of aluminium composite panels
- ◆ minor corrections.

Fire Protection Association Australia (FPA Australia) is supportive of these proposed amendments, which have been put forward by the ABCB following the organisation's engagement with industry.

The ABCB has released a public comment draft of NCC 2019 Amendment 1 for public consultation, and FPA Australia has submitted feedback on behalf of the industry. ■

CRC SCIENCE MAKING NATIONAL IMPACT

While firefighters have battled ferocious blazes around the country during the 2019–20 fire season, the impact of Bushfire and Natural Hazards CRC research has been on show in the operations centres and media commentary.

Dr Marta Yebra was on hand to assist the NSW Rural Fire Service (RFS) in November 2019, working with fire managers to analyse data on vegetation conditions and the affect on bushfire spread.

Alongside Dr Yebra at NSW RFS was another CRC researcher, Professor Jason Sharples, assessing the extra risks firefighters may face with spotfires and fire coalescence.

Dr Mika Peace was in Queensland during the state's high-risk days in November, spending three days working closely with fire behaviour analysts in Queensland Fire and Emergency Service's Predictive Services division as the Bureau of Meteorology's embedded meteorologist. In January 2020, Dr Peace undertook a similar role with the NSW RFS.

CRC CEO Dr Richard Thornton and Research Director Dr John Bates provided expert comment on a variety of topics throughout the season. They included why the bushfire season has been so challenging, the role of climate change in lengthening bushfire seasons, changing demographics, the role of

PHOTO: ANTHONY CLARK, NSW RFS



The NSW Rural Fire Service headquarters is a hive of activity during bushfires.

prescribed burning, and how people understand their bushfire risk and react to warnings. Dr Thornton and Dr Bates were featured across television, radio,

print and online coverage of the fires through outlets such as the ABC, *The Age*, *The Australian*, the *Herald Sun*, *The Guardian* and 3AW. ■

VOLUNTEER SCHOLARSHIP HELPS PLAN A SAFER FUTURE

PHOTO: NSW SES

NSW State Emergency Service volunteer Thomas Sewell is completing a Graduate Diploma in Planning and Management of Natural Hazards.



Thomas Sewell is a planning volunteer within the Queanbeyan unit of the NSW State Emergency Service. A recipient of the Emergency Management Volunteer Scholarship Program, he is completing the Graduate Diploma in Planning and Management of Natural Hazards at the University of New England.

Mr Sewell emphasised the benefit of this study and knowledge to his recent deployment to the fires across northern NSW. "I had a better understanding of how fires spread and behave, which was incredibly important to my role in planning ... where I was responsible for mapping the spread of a number of large fires," he said.

In addition to the importance of study, Mr Sewell highlighted the value of scholarship support and financial assistance in being able to undertake the study. In completing units for the graduate diploma, Mr Sewell said he has become "a much more knowledgeable volunteer, with a better understanding of the processes that influence disaster risk".

Mr Sewell said this knowledge will benefit both the NSW State Emergency Service and his community of Queanbeyan. ■

NEW VICTORIAN ROUTINE SERVICE FORMS INCORPORATE INDUSTRY FEEDBACK

The Victorian Government has introduced an updated Annual Essential Safety Measures Report and Maintenance Schedule form for routine service of fire protection systems. The new forms were officially gazetted on Thursday 12 September 2019, and the Victorian Building Authority has now made them available on its website. Updates to the forms were made in response to feedback from Fire Protection Association Australia, with the assistance of its members. The changes are mainly improvements to the forms' usability, to better align them with regulatory objectives and the operational requirements of the industry. The updated forms replace those introduced in Victoria in 2018 with the Building Regulations 2018. ■

ASSOCIATION BOARD APPOINTMENTS FOR 2019-20

Fire Protection Association Australia (FPA Australia) is pleased to announce the results of elections for positions on the Board of Directors for 2019, which concluded on Thursday 17 October 2019. Four Board positions were available, with a record number of nominations triggering an election.

The four elected nominees for the FPA Australia Board are Bill Lea, David Isaac, Elissa Fazio and Russell Porteous. They join sitting Directors Chris Orr and Rhondel Johannessen.

The new Board of Directors had its first meeting on 8 November 2019 in Melbourne, following the Association's AGM, with the following appointments:

- ◆ **President:** Bill Lea
- ◆ **Vice President:** Rhondel Johannessen
- ◆ **Business and Governance Committee:** Rhondel Johannessen (Chair), Elissa Fazio, Chris Orr, Bill Lea and Scott Williams (ex-officio)
- ◆ **Standards Australia Councillor:** Hank Van Ravenstein. ■



FPA Australia held its AGM on 8 November 2019.

PHOTO: FPA AUSTRALIA

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NEW SUITE OF BENEFITS FOR FPA AUSTRALIA MEMBERS

FPA Australia has introduced a new and improved suite of benefits to help members with their business operations.

BY **TOM BICKNELL**

FPA Australia

Fire Protection Association Australia (FPA Australia) is pleased to announce a series of new and improved exclusive benefits available to Association members. The new benefits are aimed at helping FPA Australia's members with their daily business needs, and add to existing membership benefits that help them with fire protection resources, training

and accreditation, promotion and much more.

"One of FPA Australia's strategic directions is to support the needs of our members not just as fire protection practitioners, but also as businesses," said Catherine Reid, FPA Australia's Manager of Member and Industry Services.

"An effective fire protection industry that can help protect the community requires healthy and sustainable fire protection businesses, and that's the outcome these new benefits will help our members achieve." ■



Fire Protection
Association Australia
Insurance Program

FPA Australia Insurance Program

FPA Australia has launched its new FPA Australia Insurance Program in partnership with Windsor Management Insurance Brokers. The new Insurance Program is specifically designed to meet the increasingly complex insurance exposures of the fire protection industry.

Offering market-leading coverage the program offers solutions specifically tailored for each industry segment, with accurate risk assessments meaning FPA Australia members don't pay premiums for risks they're not exposed to, but do get appropriate coverage for their unique circumstances.

Windsor Management Insurance Brokers has been providing insurance broking services for the retail, small and medium-sized enterprises, commercial and corporate sectors for over 25 years. They specialise in industry-specific insurance programs for the fire protection, building and construction industries.

The FPA Australia Insurance Program utilises the bulk-buying power of FPA Australia's combined membership to secure competitive pricing from a range of underwriting partners. Make sure your business has the coverage you need, with FPA Australia and WMIB.

Learn more at www.fpaa.com.au/insurance.



PHOTOS: FPA AUSTRALIA

netStripes

NetStripes web design and digital strategy

The Association has partnered with digital specialist NetStripes to offer members an exclusive 5% discount on a range of online marketing support services including digital strategy advisory, web design, online brand development, marketing support and training.

NetStripes offers all members of FPA Australia a free one-hour Digital Strategy Advisory session valued at more than \$500. FPA Australia members also have access to NetStripes' library of free ebooks and information resources on digital marketing.

NetStripes is focused on working with small and medium businesses to take their digital presence to another level. Speak to their team today to access your exclusive FPA Australia member discount.

Learn how to win more business online at www.netstripes.com/fpaa.

FPA Australia Jobs Board

FPA Australia is proud to launch the new FPA Australia Jobs Board, a job listing and career website specifically designed to help fire protection businesses efficiently find high-quality job candidates and to help fire protection professionals develop their careers.

Association members get exclusive discounts on job listings.

Available jobs will be promoted to industry members by FPA Australia, helping employers find quality fire protection candidates faster than they can through job sites open to the general public. Job seekers can upload their resumes to the Board for free, meaning employers may even find the right person for their role there.

Find your next employee or role now at jobs.fpaa.com.au.



Vehicle finance with Stratton Finance

FPA Australia members are now eligible for even more exclusive benefits through the Association's vehicle and finance partner Stratton Finance, part of the Carsales network.

Stratton Finance is one of Australia's leading asset finance brokers and partners with full-service car-buying service carconnect.

Stratton can help you find, finance, fit-out and sell vehicles and other assets. As an FPA Australia Corporate or Organisation member, you'll receive:

- ◆ a \$350 discount on loan application fees through Stratton Finance
- ◆ 10% off vehicle fit-outs with caddy storage
- ◆ competitive interest rates negotiated for FPA Australia members
- ◆ exclusive member deals on new vehicles through carconnect
- ◆ free vehicle listings on Carsales.com when financing through Stratton Finance.

To get exclusive deals on your vehicle needs, visit stratton.com.au/fpaa.



GLOBAL APPROACH TO MEET SAFETY CHALLENGES IN THE FUTURE BUILT ENVIRONMENT

An Underwriters Laboratories symposium in Tokyo, Japan, sought an international response to the emerging safety challenges of future cities across the globe.

BY **ALANA BEITZ**

AFAC

AFAC Director Community Safety Amanda Leck in Japan with symposium co-panellists.

The move toward sustainable and energy-efficient development is shifting the way that the built environment is being designed and constructed across the world. This includes new trends such as tall mass timber buildings, green buildings, battery energy storage systems and building façade systems.

Recognising the need to understand and meet the safety challenges of the future built environment, Underwriters Laboratories (UL) hosted a symposium on this topic in association with UL Firefighter Safety Research Institute and the Fireproofing Association of Urban Disaster Prevention.

Developers, fire safety practitioners, testing and standards experts and representatives from the sustainability, construction and energy industries from across continents met in Tokyo, Japan on 10 and 11 October to seek an international approach to address the emerging safety challenges.

AFAC Director Community Safety Amanda Leck provided an Australian perspective to the program, presenting on a panel alongside Mr Mario Goncalves (UL), Mr Dionisio Franca (Green Building Japan) and Mr Koichi Hirata (Fireproofing Association of Urban Disaster Prevention).

The panel addressed the need for the built environment to be able to cope, adapt and transform in relation to the risks associated with climate change, highlighting the challenges presented by extreme weather such as heat, water egress, wind and fire. Ms Leck introduced the audience to risk



PHOTO: UL

reduction efforts underway in Australia, including the *National Risk Reduction Framework* to deliver on the goals outlined in the *Sendai Framework*, and the compulsory residential sprinkler requirements incorporated into the National Construction Code in 2019.

The goal of the symposium was to discuss and identify knowledge gaps and safety concerns while seeking potential collaborations to address them. Key topics from the symposium included:

- ◆ **Tall mass timber buildings**—More buildings are being constructed to greater heights using engineered timber products and there are multiple efforts worldwide to increase the use of cross-laminated timber in construction. Testing, performance and structural reviews are underway to address both design flexibility and occupant and firefighter safety.
- ◆ **Green building and sustainability issues**—Some developers seek to protect their investments from the harmful effects of atmospheric

conditions with an enclosure or envelope approach. Various test methods can evaluate the performance of the exterior protection system, as well as the quality of the interior environment for occupants.

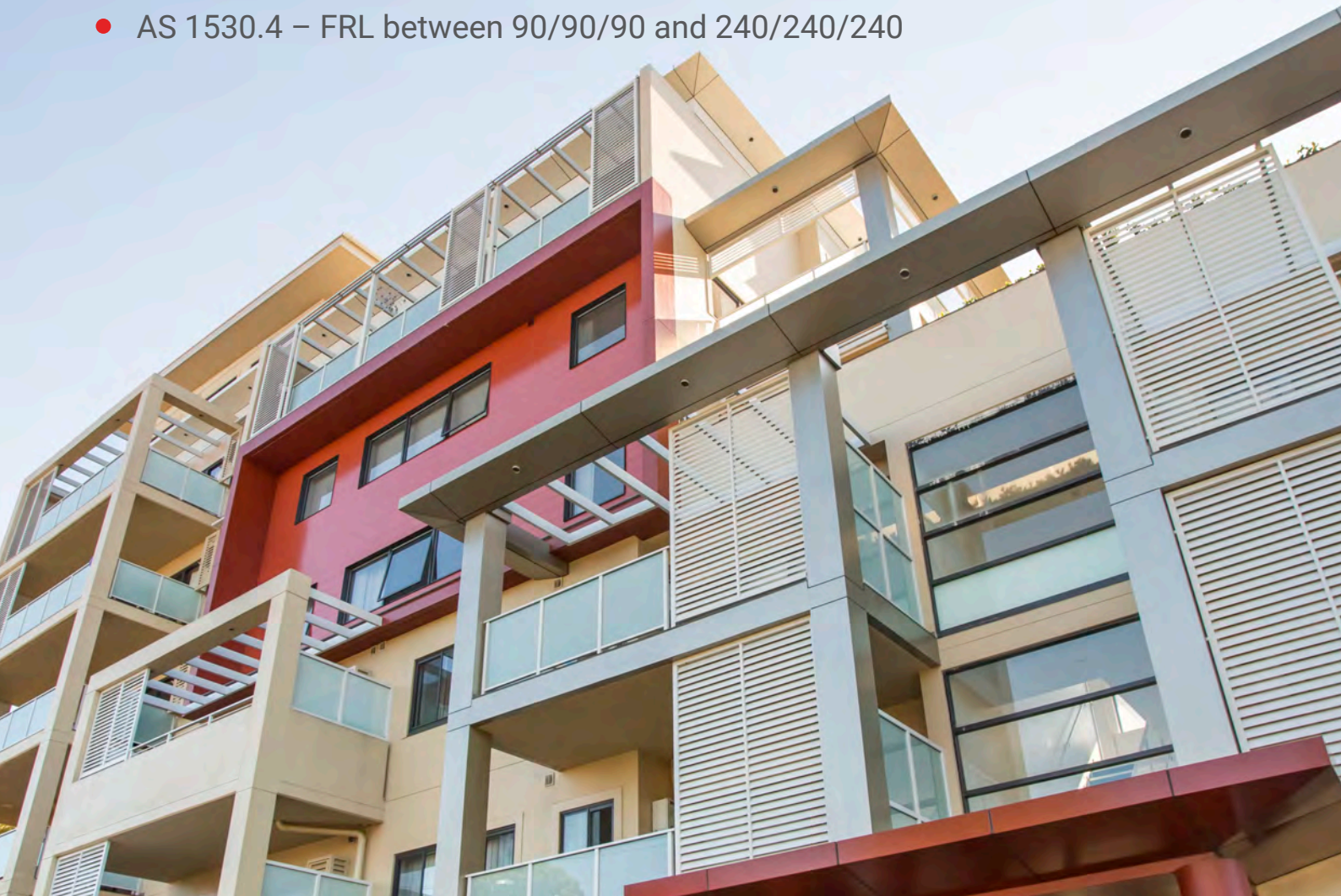
- ◆ **Battery energy storage systems**—The growing desire to use high-density battery energy storage systems in occupied buildings has raised a number of safety questions, especially regarding fire. Discussions sought to identify knowledge gaps and concerns and covered the development of UL 9540A and potential changes to safety standards.
- ◆ **Building façade systems**—Artificial exterior systems designed for artistic or energy-conserving objectives serve purposes other than structural load bearing. As some of these designs have proved a fire risk, the development of a singular standard for manufacturers being sought to deliver global consistency of design and performance. ■

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THE NEXT LEVEL

A Metropolitan Fire and Emergency Services Board fire investigator examining a house after a fire.



PHOTO: MFB

A STEP TOWARDS ZERO: UNDERSTANDING PREVENTABLE RESIDENTIAL FIRE FATALITIES

More than one residential fire-related death occurs every week in Australia—and these deaths are preventable. New research shines a light on the people most at risk.

BY **LUCINDA COATES, ANDREW GISSING**
AND **DR KATHARINE HAYNES**

Risk Frontiers/Macquarie University and Bushfire and Natural Hazards CRC

GEOFF KAANDORP AND **JULIE HARRIS**

Metropolitan Fire and Emergency Services Board

**JONATHAN VAN LEEUWEN, ASHLEY
AVCI, JACOB EVANS, STEVEN GEORGE**
AND **ROBIN VAN DEN HONERT**

Risk Frontiers/Macquarie University

On average, more than one preventable fire-related death occurs in a residential context every week in Australia. That equates to approximately the same number of deaths every three years as occurred during the Black Saturday bushfires (173). At least 900 people have died from July 2003 to June 2017—deaths that, overwhelmingly, could have been avoided.

Preventable fires are fires where individuals, fire services or other

stakeholders may have been able to identify the risks related to a person and/or a physical environment and take actions or develop intervention strategies which, if applied, may have reduced the risk of a fire taking place. Deaths from residential fires have significant social, economic and emotional impacts on individuals, families and communities, and on the firefighters and other emergency service volunteers and employees who attend these incidents.



PHOTO: MFB

Firefighters
battling a
blaze.

The Bushfire and Natural Hazards CRC study, undertaken by Risk Frontiers, the Metropolitan Fire and Emergency Services Board (MFB) and Macquarie University for AFAC, draws on 14 years of data to provide an update on the evidence around the extent of preventable residential fire fatalities in Australia and identify those people most at risk of dying in residential fires.

Undertaken through the CRC's Tactical Research Fund, the *Strategic analysis of preventable residential fire fatalities* project analysed records from the National Coronial Information System (NCIS) database, supported by the analysis of publicly available coronial reports. Single variable, contingency table and machine-learning analysis was used to determine those most at risk of dying in a preventable residential fire.

The study revealed that those most at risk include:

- ◆ older people—people aged over 65 represented 36% of total fatalities
- ◆ young children aged zero to four—8% of all fatalities
- ◆ people with a disability—62%

- ◆ Aboriginal and Torres Strait Islander people—over-represented by a factor of 2.5
- ◆ people who smoke—65% were smokers
- ◆ people with medications (34%) or alcohol (33%) present in their blood
- ◆ males—represented 64% of all fatalities, particularly those aged over 45
- ◆ people who lived alone—45%
- ◆ people who lived in the most socially and financially disadvantaged locations.

The results from this study highlight that reducing residential fire fatality risk is complex. The presence of a single risk factor on its own is unlikely to significantly increase a person's risk of dying in a residential fire. Rather, it is the combination of a range of risk factors surrounding the person—their behaviours, their residential environment, any disability or disadvantage that they are experiencing and other external factors—that is likely to impact their overall level of risk of having a fire that results in their death.

The research shows no declining trend

The research builds on a 2005 AFAC study, which found that the most at-risk groups for residential fire fatalities in Australia included males, those aged 65 or over, children under four and adults who had consumed alcohol. One of the project aims was to update the AFAC study and to confirm, at a national level, findings from Aufiero et al. (2011), which found that, in metropolitan Melbourne, older people and people with a disability were at higher risk and that many residential fire victims were recipients of community-funded care programs.

Australian records from 1 July 2003 to 30 June 2017 were accessed in the NCIS by a variety of searches. After refinement of the applicable dataset, relevant structured and non-structured data from the NCIS (comprising the summary page, police, autopsy and toxicology reports and coroner's findings) were coded for 41 fields and entered into a specially constructed database. Once complete, the data was statistically analysed.



PHOTO: MFB

This research will allow lifesaving information to be better targeted to those most at risk from house fires.

Between 2003 and 2017 there was no clear declining trend in fire fatalities.

The data shows those most at risk

Older people

By age cohort, those aged over 65 are the group most at risk of dying in a residential fire, a risk that increases with age. The data indicates that the other factors that increase risk in older people include smoking, having a disability, the presence of alcohol and/or medications in their blood, living alone and requiring support to live at home. Where these factors are present in combination, an older person's risk increased significantly.

Young children

Children aged under four had the largest number of deaths of any five-year age group. The cause of fire was more often lighters or matches, which may indicate that a significant number of fires were lit by children during fire play. The link to social and financial disadvantage was particularly significant in this cohort, with almost half of deaths in the zero to four age bracket occurring in locations in the top 10% of greatest socio-economic disadvantage, and 87% of fatalities occurring in the top 40% of locations of greatest disadvantage.

People with a disability

Within the data, 47% of decedents were identified as having at least one disability present (physical disabilities: 46%, mental health disorders: 28%, and neurological disorders: 10%). The data suggests that people with a disability often died between the hours of 8 am and 12 pm. This contrasts with the overall data, where fatal fires more often occurred overnight during sleeping hours. This may indicate that for people with a disability, their disability rather than being asleep may have contributed to their inability to safely escape the fire. Similarly, people with a disability more often had a working smoke alarm.

Aboriginal and Torres Strait Islander people

More than 8% of decedents were identified as Aboriginal, Torres Strait Islander, or both. Approximately 3% of the Australian population identifies as Aboriginal or Torres Strait Islander, meaning that this cohort is over-represented in the data by a factor of 2.5. Aboriginal and Torres Strait Islander people comprised 12% of fatalities under 65 years of age and 3% of people over 65 years, likely reflecting the younger age structure of the Aboriginal and Torres Strait Islander population.

The residence

Freestanding houses/villas were the housing type where the majority (67%) of fatal fires occurred. However, these freestanding houses comprise 78% of the housing stock in Australia, so other housing types may be over-represented in the fatality data. Similarly, owner-occupiers were the most commonly identified property tenure (53%), but owner-occupiers account for approximately 67% of all property tenures in Australia. This indicates that other tenure types, such as private and public rentals, may be over-represented in fire fatalities.

The location

Most fatal residential fires occurred in major cities, but there was over-representation of deaths in regional and remote areas. The analysis of the fatality data in relation to areas of relative socio-economic advantage and disadvantage shows that most fatalities occurred where there is relatively greater socio-economic disadvantage. Fatal preventable residential fires start most commonly in the living room or bedroom. They are not necessarily large or severe fires, with approximately half of fatal fires burning one room or less of the structure.

Seasonality

Most fatal residential fires occur during the winter months. They occur most commonly between the hours of 8 pm to 8 am and, particularly, from midnight to 4 am.

Smoke alarms

In a large majority of cases (66%), it is unknown if a smoke alarm was present, despite smoke alarms being a requirement by law in all residential properties. The extent that the presence of a smoke alarm was noted by coroners is low considering their importance and that the absence of a smoke alarm may have had an impact on the fatality outcome (e.g. by providing an earlier warning to the fire victim).

Smoking

People who smoke are over-represented to a large extent in residential fire fatalities. Of cases where the smoking status of the decedent was known, 65% of people were smokers. During the study period, smoking rates in Australia decreased significantly and reduced-fire-risk cigarettes were mandated in Australia in 2010. In the 2004–05 financial year, 23% of Australians

were smokers. By 2014–15 this had decreased to 16%. The fatality data does not reflect any decline in the number of smokers who died over the course of the study period. It is unclear why this is the case.

Smoking materials are a major cause of ignition of fatal residential fires. For those cases where the fire cause was known, over a quarter were caused by smoking materials, with just over a third of those relating to smoking in bed. There was a strong link between smoking materials as the cause of fire and the residence being in a relatively disadvantaged area, with 49% of fires caused by smoking materials occurring in the top 25% of the most disadvantaged locations.

Working toward zero

MFB's Acting Chief Executive Officer/Chief Officer David Bruce said the research provides valuable insights that agencies can use to inform practice.

"The majority of fatal house fires are preventable, which is concerning. As firefighters, our job is not just to extinguish fires but also to stop them from occurring in the first place.

"Studies like this one provide vital intelligence to assist fire and rescue services better understand why these incidents are happening and who is most at risk. This enables us to develop evidence-based policies and practices to hopefully reduce the number of fatal fires. Even one person dying in a house fire is one too many," Mr Bruce said.

This research will inform future fire safety campaigns nationally, with fire and emergency services across Australia using the data to develop a national residential fire strategy, to reduce preventable residential fire fatalities toward zero.

The groups identified as most at risk are also the groups that are the most difficult to reach in general fire safety campaigns. Lifesaving information can now be better targeted to the areas it is needed most. ■

Find out more about this research at www.bnhcrc.com.au/research/preventableresidentialfirefatalities.



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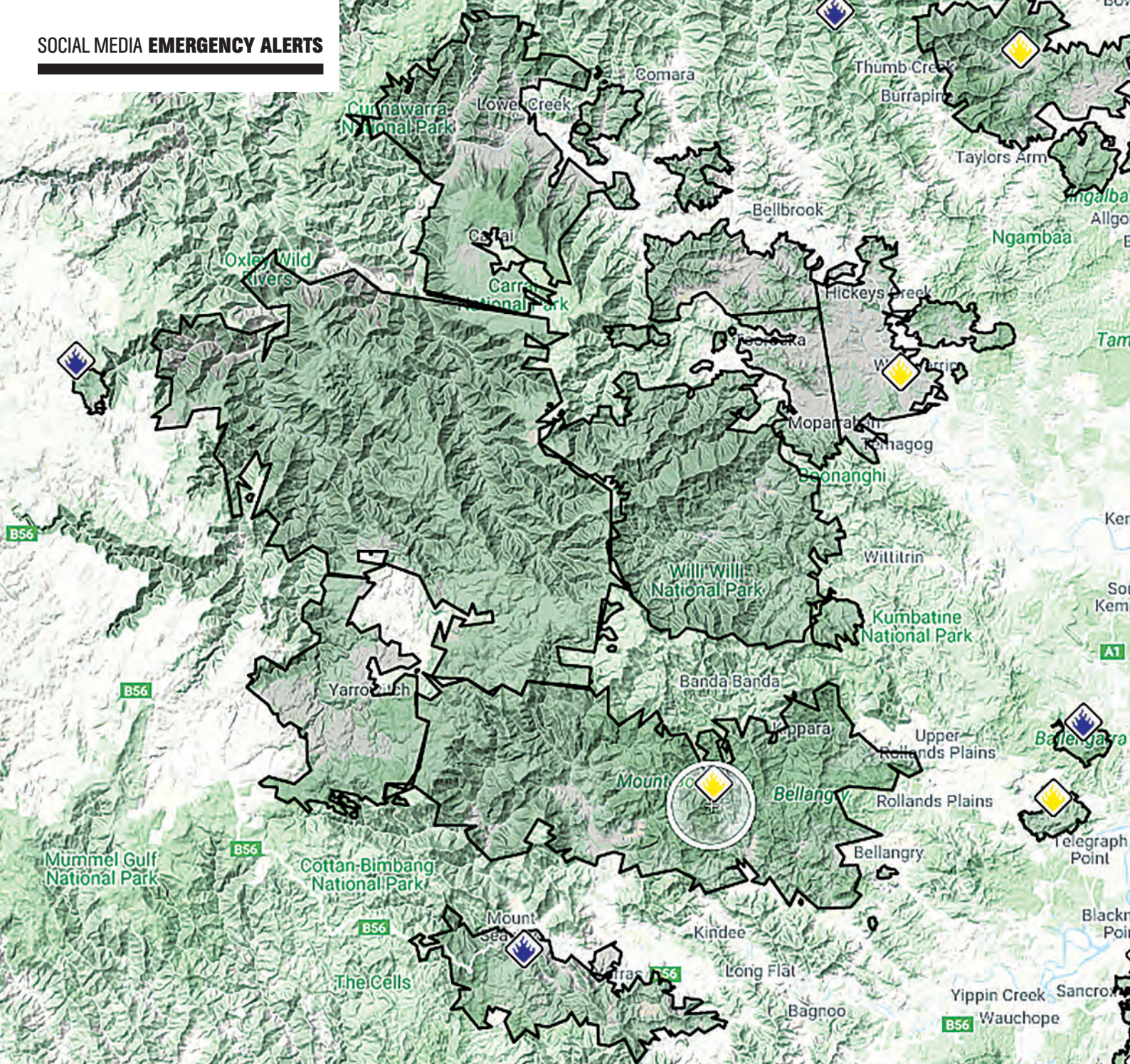
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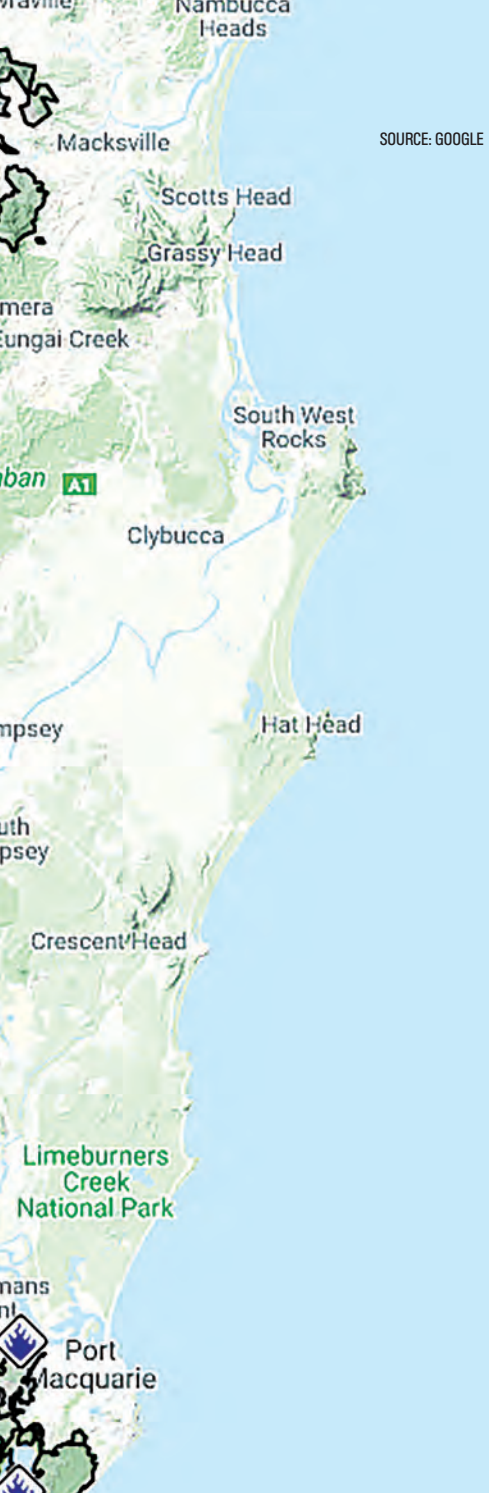
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ONLINE WARNINGS WHEN THE THREAT IS HIGH

As Australia experiences earlier and more catastrophic starts to the bushfire season, communities are turning to online tools and social media to receive information and warnings about the immediate risks.



especially when electricity and other traditional forms of accessing warnings information are disrupted.

The 2011 Queensland floods saw emergency services, politicians, media and community organisations begin to use platforms like Facebook and Twitter to share real-time information and alert the public about the immediate risks.

But Google and Facebook recently used a more formalised approach during the 2019–20 bushfires, which saw catastrophic bushfire conditions across multiple states.

Both tech giants are using their platforms and working with government agencies and other emergency services partners to deliver real-time assistance and warnings to disaster prone communities.

Kia Wahl is the Head of Crisis Response Partnerships at Google who says people often search online for current warnings information during an emergency.

"As the fires worsened in November 2019 we saw more people searching for updates," Ms Wahl said.

Google currently provides SOS Alerts when people search for a specific area or disaster, and interactive alerts through Google Maps, where users can pinpoint their location and proximity to the nearest bushfire. iPhone and Android users can also receive alerts through text notifications and the Google smartphone application.

"We want to give people and communities the most relevant information available at the time that they need it most," Ms Wahl said.

Australian fire agencies working with Google

As conditions worsened in November 2019, NSW Rural Fire Service (RFS) engaged Google to provide real-time warning information.

The NSW RFS alert feeds are integrated into Google's Public Alerts, which allows the information to be shared accurately and ensures "comprehensive coverage across Australia", Ms Wahl said.

"We were quickly able to surface the Public Alerts in Google Search, and used SOS Alerts to provide users with more information," she said.

In response to the bushfires across NSW and Queensland in late 2019, Google launched the Safety Tips feature across SOS Alert cards on their Search function. This development helped to communicate key safety advice on a large scale and allowed communities to understand the severity of the fires and take appropriate action.

Google also worked with the South Australia Country Fire Service (CFS) to deliver warnings for residents in South Australia. Ms Wahl said Google is working with many other agencies for a national approach.

"We are continuing engagement with fire and emergency services across all states to ensure we have national alerts coverage," she said.

Other fire and emergency services can partner with Google to share their alerts.

Agencies should ensure their alerts follow the Common Alerting Protocol or CAP standard—an international standard

The interactive map means at-risk communities can see their bushfire threat and the action being undertaken on the ground nearby.

BY **COSTA HARITOS**

AFAC

In the last decade, the World Health Organisation says 2.6 billion people were affected by natural disasters, with those figures expected to rise in the future. Quick reactions, effective decision-making and sector collaboration are important when a disaster strikes.

The severity and frequency of natural disasters is changing, and so is the way people are accessing public information and warnings when the threat is high. Communities are more readily turning to their mobile devices and social media for assistance during an emergency,

PHOTO: AFAC



Google Public Alerts provide an SOS notification system that provides residents with a timely indication of the current emergency situation and advice on what safety precautions to take.

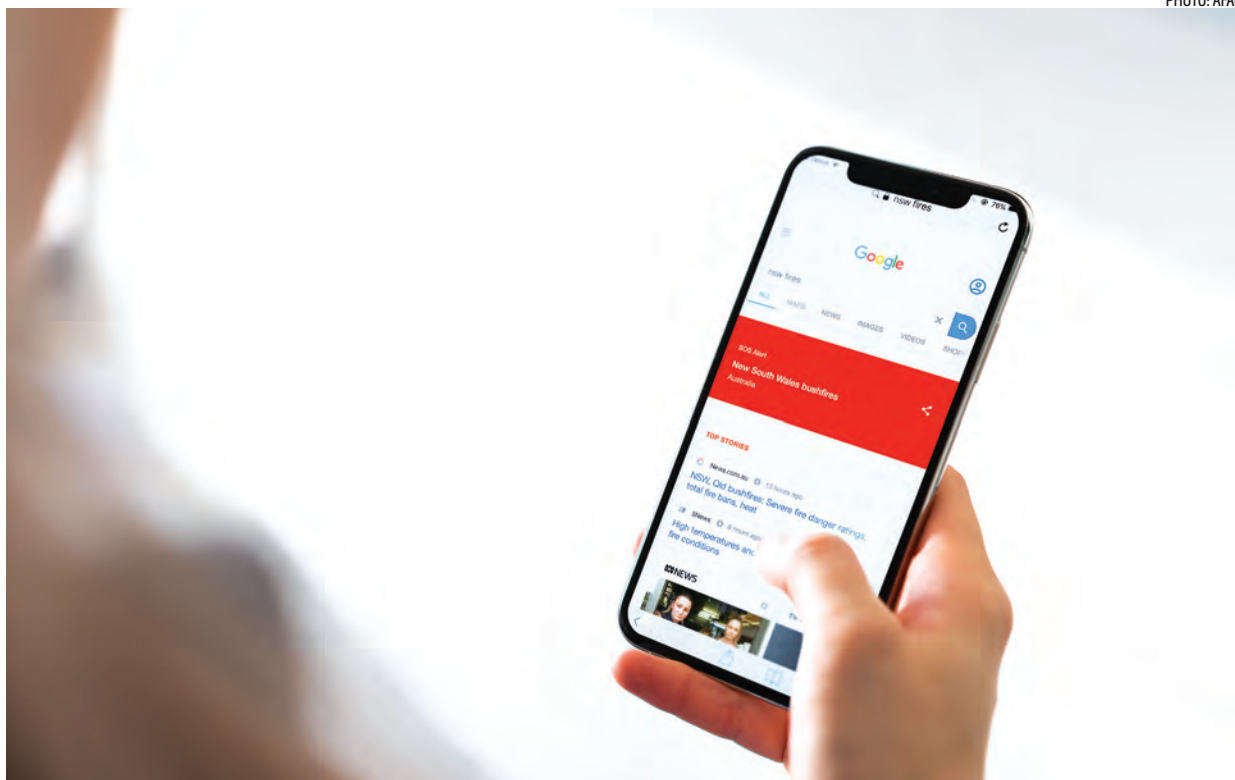


PHOTO: AFAC

At Google, crisis response also extends beyond natural hazards. Fundraising after a disaster, educational media kits, connectivity services for refugees and translations for doctors and aid workers are all part of Google's strategy for disaster awareness and resilience.

for publishing and sharing alerts. This means Google can use a consistent approach to sharing information in an accurate and secure manner.

The Public Alerts using the CAP format are automatically pulled from NSW RFS and SA CFS, with any natural or human-made hazard available for mass circulation.

A worldwide collaboration of agencies is also providing information to Google Public Alerts including Canada, Germany, India and the Philippines.

Where to next?

The team at Google monitors real-time threats and natural hazards across the globe, 24 hours a day and seven days a week.

Facebook is also using its platform to share and prepare communities before, during and after a natural hazard. The social media platform shares tips for response and relief organisations, first responders, government agencies and individuals and communities.

Mia Garlick from Facebook Australia met with communications teams and experts from the emergency services

at the Emergency Media and Public Affairs Conference in June 2019 to discuss how the company could support emergency managers, disaster response tools and crisis mapping data.

Ms Garlick shared Facebook's insights with the AFAC Warnings Group, where she spoke about the critical role of social media in emergencies and enhancing community resilience.

Community and disaster-focused Facebook groups are already a platform for posting eyewitness information, questions, requests for help and advice, establishing support networks within the disaster-affected area and facilitating community engagement and involvement in aid efforts.

The 'marked as safe' feature also allows friends to alert each other of their status if they are impacted by a disaster.

At Google, crisis response also extends beyond natural hazards. Fundraising after a disaster, educational media kits, connectivity services for refugees and translations for doctors and aid workers are all part of Google's

strategy for disaster awareness and resilience.

Ms Wahl at Google Australia said these initiatives take existing information and apply it.

"Emergency services already provide a lot of great information in this space, so by using data from the state-based emergency services we want to make sure that when people come to Google Search and Maps they can access this timely and useful bushfire information," she said.

The collaborative approach to warnings undertaken this bushfire season will be discussed in more detail at the AFAC Warnings Group 2020 meetings.

Ms Wahl said Australia-wide coverage could be possible through cross-sector collaboration.

"Our teams are always looking for ways to better support this important area so that we can provide the most helpful experience to those impacted," Ms Wahl said. ■

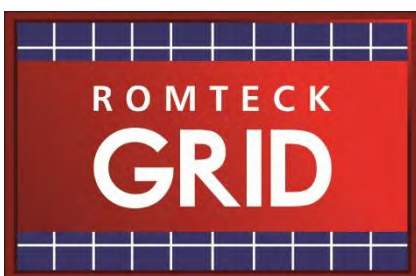
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FIRE PROTECTION INDUSTRY AWARDS RECOGNISE EXCELLENCE

A record number of submissions meant the Fire Protection Industry Awards were hotly contested in 2019.

BY **TOM BICKNELL**

FPA Australia

Twelve of the fire protection industry's best and brightest were recognised in November at the Fire Protection Industry Awards 2019 Gala Dinner, held at the Crown Avary overlooking the Yarra River in Melbourne.

It was the fourth year of the Awards, and it received a record number of submissions across nine independently judged award categories, with two further categories awarded by the FPA Australia Board.

"The large number of submissions is a fantastic reflection on the industry's growing drive to champion excellence in the work it does," said Scott Williams, CEO of Award hosts Fire Protection Association Australia (FPA Australia).

"FPA Australia congratulates our deserving award winners, but also our finalists, who stood out in a competitive field. They set a benchmark for all of us in the industry to aim for."

Alongside the nine judged award categories, FPA Australia's Board of Directors also presented awards to three people identified as having made major personal contributions to the fire protection industry. For the first time, the Board presented an award to one of the Association's own staff, Chris Wyborn, for achievements and contributions beyond the call of duty.

PHOTOS:
TOM BICKNELL,
FPA AUSTRALIA

Independently judged awards



Barry Lee Technical Excellence Award:
Stephen Caple



Harry Marryatt Fire Protection Company of the Year Award (1–49 Employees): **Greene Fire**

Independently judged awards



Young Achiever of the Year Award:
Qazi Samia Razzaque



Harry Marryatt Fire Protection Company of the Year Award (50+ Employees): Crown Melbourne



Fire Protection Project of the Year (over \$1 million):
Warren Smith & Partners



Ron Coffey Award for Excellence in Bushfire Protection:
Rod Rose



Fire Protection Project of the Year (under \$1 million):
Azzo Project Services



Innovative Product and Technology Award:
FLAIM Systems

Independently judged awards



Emerging Fire Protection Industry Leader: Firas Shawash

“The large number of submissions is a fantastic reflection on the industry’s growing drive to champion excellence in the work it does,”

Scott Williams, CEO of Award hosts FPA Australia

Board-appointed awards



Meritorious Service Award: Mark Whybro AFSM



Meritorious Service Award: Chris Wyborn



A V Viscogliosi Award: Glenn Talbot

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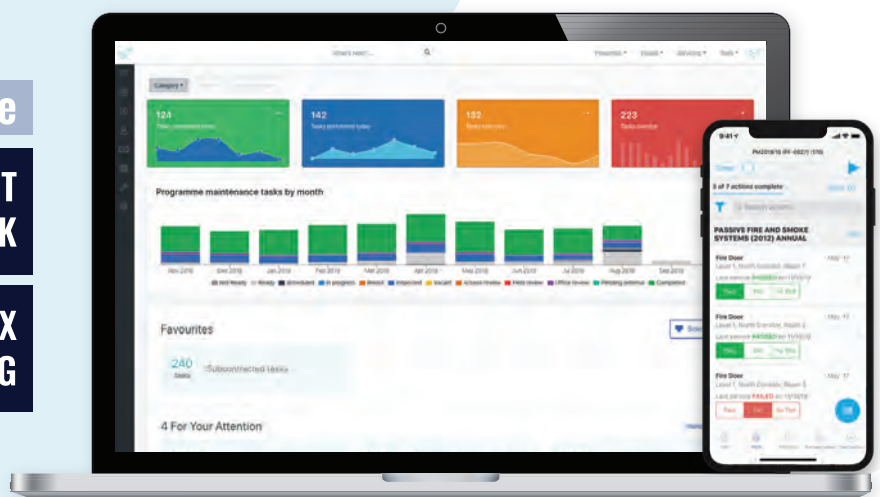
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DATABASE CRUCIAL FOR LEARNING LESSONS FROM THE PAST

Australia's emergency services can now easily navigate through 130 years of data from inquiries, reviews and coronial inquests into natural hazards in one place. The Bushfire and Natural Hazards CRC's Disaster Inquiries Database captures and categorises recommendations, ensuring lessons from the past are not forgotten.

BY **GABRIEL ZITO**

Bushfire and Natural Hazards CRC

The outcomes of 130 years of inquiries and reviews into emergency management and natural hazards have been captured in a new database.

The Disaster Inquiries Database is an online platform that gives emergency services the upper hand in learning from the past to create a better future.

Created by the Bushfire and Natural Hazards CRC, the database contains over 300 inquiries and reviews across all states and territories.

The database contains facts on all reviews conducted between 1886 and 2017, in addition to full recommendations from 55 inquiries carried out from 2009 to 2017. It allows users to custom search through over 1,300 of these recommendations.

Users can search and compare recommendations through keywords

and themes, as all recommendations have been coded into specific categories.

The functionality of the database allows it to be used in a variety of different ways:

- ◆ to compare equivalent recommendations between inquiries, themes and jurisdiction
- ◆ to track inquiries across jurisdictions, years and types
- ◆ to download and work with all inquiries and listed recommendations as it suits the particular needs of an organisation.

Making data valuable

Since its release, the platform has become a resource for government and emergency management agencies to help them recognise past lessons and identify effective practices both now and into the future.

CRC researcher Dr Michael Eburn from the Australian National University was part of the research team that helped

develop the database. He believes that it will ensure emergency managers continue to learn from the past.

"Inquiry recommendations get lost or distorted over time, and so having a place where practitioners can find and search the actual text of inquiry recommendations will help with understanding the past in order to keep learning for the future," Dr Eburn said.

"Post-event inquiries are only helpful if their recommendations are available and not forgotten. Bringing together the lessons from past events will help practitioners identify trends and recurring themes and ensure the lessons of the past are not forgotten."

Available now for public use, the database has garnered positive feedback from those within the emergency management sector.

Adrian Birch, a private data analyst and developer, said that the assembly of a repository of inquiries in one place greatly assists researchers.

Inquiry types

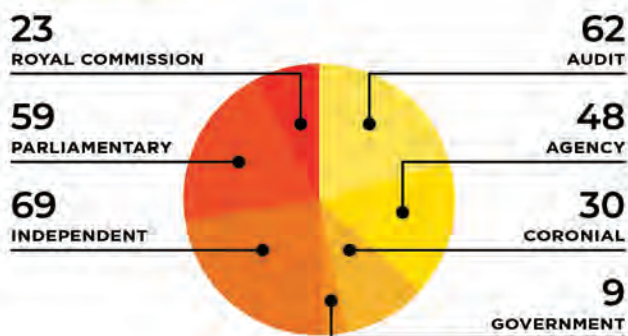


Figure 1. Many different inquiry types are available to analyse in the database.

Number of inquiries by hazard type

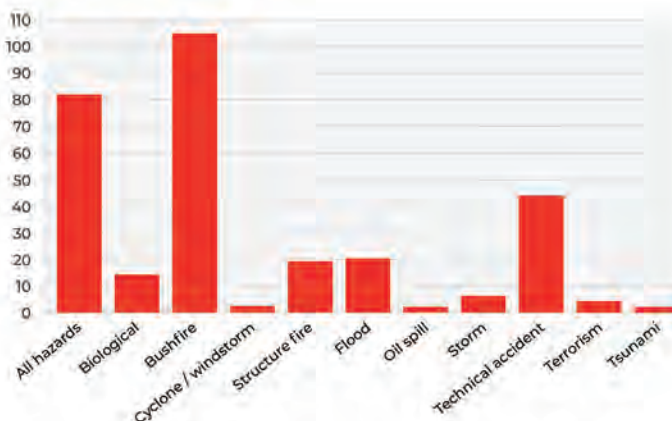


Figure 2. The most number of inquiries relate to bushfire, followed by all hazards and technical accidents.

SOURCE: BUSHFIRE AND NATURAL HAZARDS CRC

Disaster inquiries database

Search over 300 emergency inquiries and reviews from across Australia between 1886 and 2017. Explore all recommendations since 2009.

bnhcr.com.au/utilisation/ddr

"The inquiries and reports following major natural disasters are produced in the context of powerful community sentiment and political considerations such that, despite their best intentions, investigators often struggle to produce reports that are fully objective and complete.

"The CRC's new Disaster Inquiries Database enables researchers to more effectively distil the accumulated wisdom from across a large and growing body of inquiry reports," Mr Birch said.

Volunteer National Incident Management Officer for Australian Red Cross Stephen Sennett said that the system is "absolutely fantastic".

"Such a relatively simple system, but such an incredible amount of knowledge contained within. It really is such a potentially powerful tool, and brilliant that it enables practitioners from across the sector to assess such a wide range of knowledge," Mr Sennett said.

For example, a search for bushfire inquiries on the Disaster Inquiries Database shows that between 2009 and 2017 there have been 55 inquiries, resulting in 811 recommendations. Most recommendations relate to 'doctrine, standards and reform', with 106 individual recommendations. 'incident management teams' and 'emergency management agency and authority' have also had many related recommendations, with 71 and 64 respectively.

Between 2009 to 2017, 15 flood-related inquiries have been conducted. The database allows users to easily identify the recommendations made by, and outcomes of, these inquiries. From these inquiries, 328 total recommendations have been made, with most relating to 'land use and building regulations' (61 recommendations), 'government responsibility' (33 recommendations) and 'doctrine, standards and reform' (30 recommendations).

CRC Research Director Dr John Bates said that the database is an accessible resource for practitioners.

"The database's multifunctionality is really what makes it exciting for researchers and agency personnel alike. Combining past learnings and recommendations from major inquiries into bushfires, flooding and cyclones in the one place gives a holistic overview for emergency management in Australia.

"We're proud to be able to provide to emergency services a place where they can get all the information from past events that will help to create a safer future for Australian communities," Dr Bates said. ■

The Disaster Inquiries Database is an outcome of the CRC's Tactical Research Fund project, Major post-event inquiries and reviews: review of recommendations project, completed in 2017 and commissioned by AFAC. Explore it at bnhcr.com.au/utilisation/ddr.



NEW DEVELOPMENTS WITH FPAS

Several significant new developments with the Fire Protection Accreditation Scheme (FPAS) have happened over the last six months.

BY **TOM BICKNELL**

FPA Australia

Driven in particular by legislative requirements in NSW, the Fire Protection Accreditation Scheme (FPAS) has undergone several significant recent developments.



Extension for NSW Government recognition of FPAS

The NSW Government has extended the deadline for formal recognition of FPAS, following a request from Fire Protection Association Australia (FPA Australia), which operates the accreditation scheme.

The original January 2020 gazettal date has now been extended to 6 April 2020. The extension gives industry practitioners extra time to gain FPAS accreditation that identifies them as 'competent fire safety practitioners' (CFSPs), before such accreditation becomes mandatory for certain types of fire protection work in NSW.

After 6 April 2020, individuals holding FPAS Fire Safety Assessment (FSA) or Fire Systems Design (FSD) accreditation will be officially recognised as CFSPs

under NSW legislation.

After this point, only CFSPs will be able to legally conduct the work covered by these two classes of accreditation, and individuals will only be able to become a CFSP by holding FPAS FSA or FSD accreditation, or accreditation under other future schemes recognised by the NSW Government.

"The extension is an opportunity for anyone doing fire safety assessment or fire systems design work in NSW to gain their FPAS accreditation before the new rules are implemented," said FPA Australia's Chris Wyborn, General Manager – Training, Accreditation and Bushfire Services.

"We encourage anyone doing this work to gain the right accreditation before 6 April 2020 to avoid any disruption to their business."



More than 900 individuals were applying or had applied for FSA accreditation at the time of writing. More than 70 individuals currently hold FSD accreditation, while more than 50 additional individuals have committed to gaining it by signing up to the FSD Interim Register.

Fire Systems Design (FSD)

Fire Systems Design—NSW

Interim Register: FPA Australia has launched a new Interim Register for practitioners who currently conduct design work of fire sprinkler systems, fire hydrant and hose reel systems, and fire detection and alarm systems. Practitioners on the Interim Register must meet FPA Australia's minimum requirements for experience, insurance and professional conduct, and have committed to future FSD accreditation under FPAS.

This new Interim Register complements the existing Fire Systems Design—Accredited Practitioner Register, which lists individuals who hold the FPAS Fire Systems Design (FSD) class of accreditation.

FSD restricted levels: In response to industry feedback, two new restricted levels of FSD accreditation have been introduced. Sitting underneath unrestricted Level 3 (Advanced) accreditation, the two new levels are Level 2 (Intermediate) and Level 1 (Basic).

These restricted levels will soon be available for all three categories of FSD accreditation: fire sprinkler systems, fire hydrant and hose reel systems, and fire detection and alarm systems. The restricted levels are being introduced

to better reflect industry work practices and align with existing job roles.

Fire Safety Assessment (FSA)

New Fire Safety Statement form:

The NSW Government has released a new Fire Safety Statement (FSS) form. The new form (Version 3) will apply to all fire safety statements from 1 February 2020. Prior to that date the previous form (Version 2) applies. The new FSS form incorporates significant feedback from FPA Australia to make it easier to use.

More EFSM assessments

available: The final set of Essential Fire Safety Measure (EFSM) assessments was released in January. Applicants are now able to undertake assessments for all 36 EFSMs under the FSA class of accreditation through FPA Australia's online training platform.

Guide for FSA assessments:

Don't forget there is a guide available to help FSA accreditation applicants with the assessment process. We encourage applicants to read this guide, and to take their time with their assessments.

Review of minimum experience

requirements: FPA Australia is reviewing the minimum experience requirements that individuals need to satisfy in order to apply for FSA accreditation. The review will consider whether experience from other roles in the fire protection industry can be used in lieu of specific FSA experience.

The review will also consider whether different experience requirements should be considered based on the complexity of a specific EFSM. Details of the review's outcome will be released soon. ■

FPA Australia has launched a new Interim Register for fire system designers.

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FIRE RISKS PILE UP

PHOTO: METROPOLITAN FIRE AND EMERGENCY SERVICES BOARD



The AFAC Waste Management Forum hosted vital discussions and facilitated problem-solving across sectors to address the increasing fire safety risk in waste processing and storage facilities.

Firefighters respond to the Tottenham warehouse fire in August 2018.

BY **ALANA BEITZ**

AFAC

By the time firefighters arrived at the Tottenham warehouse fire on 30 August 2018 in Melbourne's west, the 100 by 200 metre structure was fully alight. It took 14 hours to bring the blaze under control, as firefighting tactics were hindered by walls of shipping containers and 200-litre drums.

Seven months later, on 5 April 2019, another warehouse at Campbellfield in Melbourne's north caught alight and took several days to extinguish. The registered dangerous goods site had its licence suspended just one day earlier by Victoria's Environmental Protection Authority (EPA) when 300,000 litres of chemicals—double its permitted limit—was found on the premises.

The illegal and unsafe stockpiling of waste is creating an unstable work environment for firefighters, tied to the complex issue of waste management in Australia. Australia's National Waste Policy estimates each Australian generates 2.7 tonnes of waste each year and our growing population continues to drive an upward trend of waste generation.

Forum seeks clear path forward

With responsibility distributed across emergency management, environmental

regulators, government, industry and private landholders, the need for an improved and cohesive approach to managing fire risks at waste facilities is required.

In October 2019, waste management regulators and emergency response representatives attended the AFAC Waste Management Forum in Melbourne to improve understanding of the growing community safety risk. The forum shared case studies from Victoria and NSW to provide insights from fire services and regulators, and highlight the persisting issues.

With fire services, environmental protection agencies and other relevant regulators represented at the forum, attendees could identify key risks from across sectors, including:

- ◆ a lack of harmonious legislation, standards and regulations
- ◆ inconsistent definitions across jurisdictions
- ◆ a need for better land-use planning for facilities to be further away from built-up and environmentally sensitive areas
- ◆ a need for better intelligence collection and sharing
- ◆ a need for analysis to demonstrate effectiveness of action.

The forum also considered steps forward that may support a more effective approach to waste management and

associated risks:

- ◆ develop a greater multi-agency approach to better address risks
- ◆ consider industry roadshows to educate owners, workers, first responders and the community around risks and best practice
- ◆ lobby and influence the supply chain regarding the end-of-life disposal of goods and packaging
- ◆ include industry representatives at future waste management forums to better understand the pressures they experience
- ◆ consider international approaches for a broader perspective.

Victoria interim inquiry findings

In August 2019, Victoria's Legislative Council Environment and Planning Committee published the *Inquiry into recycling and waste management interim report*. Highlighting three significant waste fires in Melbourne (Campbellfield in 2019, Tottenham in 2018 and Coolaroo in 2017), the interim report identified an urgent need to deal with the risks of stockpiling materials and the threat they pose to community and environmental health and safety. It provided six preliminary findings addressing:

- ◆ serious risk to emergency services personnel from regulatory non-compliance by private companies and individuals

- ◆ adverse health impacts reported by some community members as a result of the fires
- ◆ strengthening public awareness about emergency communication channels in metropolitan areas
- ◆ inadequate communication from relevant agencies to the community about public health risks during and after the emergency
- ◆ inadequate investigatory, compliance and enforcement responses to reported pollution events, particularly in metropolitan waterways, in recent years
- ◆ regulatory overlap and a lack of a coordinated approach to fire safety regulation in the waste and resource recovery industry.

PHOTOS: MFB



Firefighters blind to risks

Inquiry submissions from the Metropolitan Fire and Emergency Services Board (MFB) and the Victorian branch of the United Firefighters' Union (UFU) addressed the issue of firefighters attending fires involving unknown quantities of unknown chemicals at illegal or unsafe storage facilities. The UFU likened these scenarios to an "ambush" that increases the risk of injury, illness or death to firefighters because of the lack of warning or placarding to alert them to what they are confronting.

Following the Campbellfield fire, 68 MFB staff reported 72 incidents that resulted in harm, injury or damage. The Tottenham fire led to 609 reports by 467 individuals, with the majority from operational firefighters. Impacts reported included sore eyes, sinus infections, severe headaches, fatigue, memory loss, flu-like symptoms, lung irritation, recurring nosebleeds and skin rashes after attending the fires.

Risks flow on from fire

The Tottenham fire burned for several days before it was extinguished. It was classed by the MFB as an eighth alarm—the highest category given to an emergency response. The risk was not restricted to the fire site, with pollution flowing into nearby waterways and blanketing the city in harmful smoke. An EPA analysis of Stony Creek near the site showed a range of chemicals flowed into the creek as a result of the fire, including detergents, industrial solvents and per- and poly-fluoroalkyl substances (PFAS), causing the death of fish and other aquatic life.

Air quality monitoring showed a 'very poor' rating at times during the Tottenham incident. Likewise, the Campbellfield fire emitted a large amount



of harmful smoke and forced the closure of several schools and evacuation of residents from nearby streets. The interim report found the biggest impact to the community was the distress caused by multiple fires and uncertainty resulting from a lack of government agency communication.

Clean up needs coordination

In its submission, the MFB noted that duties to ensure fire safety were spread across agencies, creating uncertainty about who should act in certain situations and with what authority. The MFB promoted an 'all hazards, all agencies' approach, frequently practiced by the emergency management sector, to unify the efforts of stakeholder agencies.

In Victoria, the Resource Recovery Facilities Audit Taskforce was established following the Coolaroo fire in 2017 to inspect recycling facilities and tackle dangerous stockpiling practices. Chaired by the EPA, the taskforce comprises of representatives from MFB, Country Fire Authority, Emergency Management Victoria, WorkSafe Victoria and the Department of Environment, Land, Water and Planning.

Fire and Rescue NSW released the *Fire safety in waste facilities* guideline in October 2019. The guideline aims to empower waste facilities with practical



steps to reduce the likelihood and severity of a fire, and explain how to assist firefighting intervention and the protection of life, property and the environment.

AFAC will continue discussions through the Community Safety Group and Built Environment and Planning Technical Group to develop a nationally-consistent guideline to inform decision-making and facilitate a coordinated approach to this increasingly complex community and workplace safety issue. ■

Parliament of Victoria Inquiry into recycling and waste management: interim report:
www.parliament.vic.gov.au/file_uploads/EPC_Inquiry_into_recycling_and_waste_management_HgDFzybL.pdf.

Fire and Rescue NSW Fire safety in waste facilities: www.fire.nsw.gov.au/gallery/files/pdf/guidelines/guidelines_fire_safety_in_waste_facilities.pdf.

Resource Recovery Facilities Audit Taskforce:
<https://apps.epa.vic.gov.au/our-work/programs/victorian-government-resource-recovery-facilities-audit-taskforce>.

National Waste Policy 2018:
www.environment.gov.au/system/files/resources/d523f4e9-d958-466b-9fd1-3b7d6283f006/files/national-waste-policy-2018.pdf.

Multi-agency media briefing at the Campbellfield warehouse fire (above).

Tottenham warehouse fire in Melbourne (top and left).

Dr Korah Parackal (right) and Mitchell Humphreys at the James Cook University Cyclone testing Station.



SHOWCASING PhD SUCCESS

As Australia experiences natural hazards of increasing frequency and severity, emergency services need information and tools to support them in making critical decisions. The Bushfire and Natural Hazards CRC's postgraduate program is contributing new knowledge to the sector.

BY **GABRIEL ZITO**

Bushfire and Natural Hazards CRC

Bushfire and Natural Hazards CRC PhD researchers are at the forefront of science in the emergency services. They are valued within emergency service agencies and governments for their skills as leaders who apply critical thinking to the problems we face, and they are sought after within not-for-profits, business and consultancies.

The Bushfire and Natural Hazards CRC's postgraduate research program is contributing to the new knowledge emergency services require to make critical decisions in natural hazards, which are becoming increasingly frequent and more severe.

The program, with both full scholarship and associate students, provides PhD and master's students with the opportunity to engage with industry leaders and gain an understanding of

the emergency management sector; its opportunities and challenges.

So far, 65 of the 142 student researchers have completed their studies, with the remaining students expected to finish over the next three years.

Here are short snapshots on five recent PhD graduates.

KEEPING A ROOF OVER OUR HEADS— DR KORAH PARACKAL

Dr Korah Parackal is on the forefront of analysing and assessing the ways that cyclones and other strong winds impact housing. In his PhD study, completed at James Cook University (JCU) in Townsville, Dr Parackal examined the dangers of losing fasteners on the roof of a home during a cyclone.

"My PhD research studied the way roofing connections of houses fail in a progressive or cascading manner during severe winds. I was able to determine what parts of the roof are most vulnerable and how damage spreads," Dr Parackal explained.

Using a wind tunnel to test the connections of fasteners, Dr Parackal combined the results with surveys of past cyclone damage across Queensland to create a model that demonstrates progressive and cascading failures within a simulation.

PHOTO: DR EMMA SINGH

The outcomes of Dr Parackal's PhD have allowed for the design and construction of more resilient structural systems and techniques for strengthening existing structures.

"This research can allow engineers to develop codes and guidelines for retrofitting older structures.

"Additionally, it allows us to develop more accurate vulnerability models that are used to assess risk," Dr Parackal said.

Completing his PhD in December 2018, Dr Parackal has since joined the research team of the CRC project Improving the resilience of existing housing to severe wind events, led by Professor John Ginger and Dr David Henderson at JCU's Cyclone Testing Station.

Findings from this research were used to inform the Queensland Department of Housing and Public Work's Household Resilience Program, which received the 2019 Get Ready Queensland Resilient Australia Government Award.

In May 2018, Dr Parackal was a finalist in the Early Career Researcher competition conducted by the CRC Association, presenting his research and thesis in a short 30-second video that showcased his communication skills.

FROM PhD TO AGENCY— DR ALEX HOLMES

The NSW Rural Fire Service (RFS) is seeing the direct benefit of the CRC's postgraduate program, with Dr Alex Holmes joining the NSW RFS upon completing his PhD at Monash University in 2018.

As a Research Officer for the NSW RFS, Dr Holmes is responsible for producing computer programs and code to manipulate and create datasets, as well as analyse their physical properties. Part of his role also includes researching potential improvements in the models used by the Australian Fire Danger Rating System.

Dr Holmes' research investigated the effects of soil moisture, temperature and precipitation extremes on fire risk and intensity. His findings have been used in establishing the high-resolution soil moisture JULES-based Australian Soil Moisture Information System, which provides greater accuracy than previous models.

"The research showed that fire intensity increases logarithmically with decreasing moisture. This means that larger and more intense fires are likely to occur closer to population centres located around the coasts of Australia as climate change exacerbates drought conditions," Dr Holmes explained.

Dr Holmes' research has provided

fire and land management agencies with a better understanding of the mechanics behind soil moisture deficits and their influence on fire intensity.

LIFELINE LINKS INFRASTRUCTURE— DR EMMA SINGH

Specialising in volcanoes, Dr Emma Singh clocked up plenty of kilometres in the air for her PhD research. Her PhD combined natural hazard modelling and analysis with graph theory tools to provide a better understanding of the impacts of lifeline failure during natural hazards, providing a foundation for emergency services to assess potential exposure risk.

Now working as a Catastrophe and Climate Risk Consultant at Willis Towers Watson in London, Dr Singh's thesis focused on the exposure of road networks to volcanic ash from a future eruption at Mount Fuji in Japan. She worked closely with local governments in Japan to better understand how ash-induced road closures can impact evacuation plans and community recovery post-eruption.

The methods that her research developed can be applied to any natural hazard or lifeline network to identify at-risk critical infrastructure and determine the potential disruption

caused by service failure.

It wasn't just Japan that Dr Singh drew her research experience from: she regularly visited key volcanic sites overseas and spoke at international conferences in New Zealand, Italy and the United States.

Dr Singh's research was recently showcased in the CRC's *Hazard Note 66: can graph theory help prepare for lifeline failure during a disaster?* Read the *Hazard Note* at bnhcrc.com.au/hazardnotes/66.

UNDERSTANDING YOUTHS' RELATIONSHIPS WITH FIRE— DR KAMARAH POOLEY

With experience in a fire service, university and now the Australian Institute of Criminology, Dr Kamarah Pooley has been making strides within her field. Dr Pooley graduated in July 2017, with her PhD taking an in-depth look at the complex and covert behaviour of those who misuse fire—a topic that has caused much community concern.

The reduction of youth misuse of fire relies heavily on preventive initiatives that are increasingly becoming the responsibility of fire and rescue services.

Her thesis examined how the youth justice system operated in respect to the memorandum and observed the way in

Dr Emma Singh at Mount Vesuvius in Italy.



"Kemenangan yang seindah - indahnya dan sesukar - sukarnya yang boleh direbut oleh manusia, ialah menundukkan diri sendiri.

Paham lama yang sudah turun temurun, tiada dapat dengan sebentar saja disisikan akan menggantinya dengan paham baru.

Berkuasa paham yang lama itu, oleh karena masih dihormati orang seluruh negeri, tetapi tumbuhan muda yang segar itu tentulah akan menang jua".

Kartini



Avianto's research is helping to empower children through a disaster-oriented board game.

which firefighter participation impacted on the future prevention of youths misusing fire.

The results from her work showed that, while there are some areas in need of improvement within the system, youth justice conferencing with firefighter involvement can provide a reduction in the risk of general repeat offending.

Dr Pooley is now using her skills in a Senior Research Analyst role with the Australian Institute of Criminology. Previously she was a post-doctoral researcher at the Queensland University of Technology, a senior firefighter, and a Community Engagement and Research Directorate Project Officer with Fire and Rescue NSW, where she received the International Association for Public Participation 'Advocating for Engagement' Award for 2019.

WINNING AT DISASTER PREPAREDNESS—AVIANTO AMRI

Avianto Amri has been involved in his fair share of crisis and disaster management situations.

In 2015, Avianto was deployed to Nepal with Plan International to assist

with earthquake relief operations, working as the Deputy Emergency Response Manager for Field Implementation. Less than a year later, the 14 January 2016 terrorist attacks took place only a few blocks away from his home in Jakarta.

Mr Amri presented at a workshop held by the Association of Southeast Asian Nations as part of its Safe School Initiative in July this year, and in December 2018, spoke at the Asian Disaster Reduction and Response Network's Regional Innovation Forum, allowing him to pitch his research to a broad audience.

Mr Amri's PhD has developed and applied a set of tools that enables parents to engage with their children in a meaningful discussion on household disaster preparedness planning.

His new innovative education research will empower children to engage with parents and build disaster resilient households in a meaningful way through the creation of the interactive board game PREDIKT, Mr Amri explained.

"PREDIKT provides the ammunition for teachers and parents to play and

learn about disaster preparedness with children in a fun and interactive way.

"It's not just the children learning—we've found that parents and teachers are challenged by the children as their curiosity drives them to ask more questions related to disaster preparedness," Mr Amri said.

The board game, which is cheap and scalable, is currently being used by agencies and practitioners across Australia, Indonesia, Malaysia and Thailand, and forms part of a broader toolkit that includes worksheets, templates, tips and preparedness items for hazard types.

At the time of printing, Mr Amri had submitted his PhD through Macquarie University and was awaiting confirmation.

These highlights are just an example of the many ways the CRC postgraduate research program is contributing to the broader body of research that is benefiting the emergency management sector and researchers. ■

For more information visit
bnhrcr.com.au/education.

GRENFELL INQUIRY IDENTIFIES FAILINGS IN LONDON FIRE BRIGADE RESPONSE

Early failure of fire compartmentation rendered an established 'stay put' doctrine ineffective, according to the Grenfell Tower Inquiry.

BY **TOM BICKNELL**

FPA Australia

A lack of coordination and training, poor information sharing and a fixation on a 'stay put' strategy by the London Fire Brigade meant fatalities in London's Grenfell Tower fire were higher than they could have been, according to findings from an inquiry into the 2017 fire.

The findings were released in October in the Phase One Report of the Grenfell Tower Inquiry, which explored the cause of the fire, the timeline of its spread through the building and the response of emergency services.

While inquiry chair Sir Martin Moore-Bick, a retired judge, praised the "extraordinary courage" of individual firefighters in the report, he identified a number of institutional failings in the response of the London Fire Brigade (LFB) to the fire.

In particular, he said there likely would have been fewer fatalities if the LFB had acted more quickly to change its standard 'stay put' strategy.

"Once it was clear that the fire was out of control and that compartmentation had failed, a decision should have been taken to organise the evacuation of the tower while that remained possible," Sir Moore-Bick said in the report. "The best part of an hour was lost before AC Roe revoked the 'stay put' advice."

Under the 'stay put' strategy, residents calling emergency services were told to remain in their apartments and await rescue. The strategy is based on the understanding that high-rise apartment buildings are designed using compartmentation to ensure fire can't spread from one apartment to another.

In its forensic analysis of the progression of the fire through the building, the report highlighted early loss of compartmentation as a critical element. The spread of the fire up the sides of the building due to its combustible cladding meant the fire rapidly entered many apartments. The report attributed the loss of effective compartmentation to:

- ◆ failure of windows in the intense heat, allowing fire to penetrate apartments
- ◆ kitchen extractor fans which deformed and provided a point of entry

PHOTO: SHUTTERSTOCK



More lives could have been saved if the 'stay put' strategy was abandoned earlier, the report found.

In its forensic analysis of the progression of the fire through the building, the report highlighted early loss of compartmentation as a critical element. The spread of the fire up the sides of the building due to its combustible cladding meant the fire rapidly entered many apartments.

- ◆ failure of key fire protection measures inside the tower, particularly fire doors which were left open or wouldn't close properly.

In response to the inquiry's findings, the report made 35 recommendations. These include changes to the availability of information to emergency services about buildings and combustible cladding, communication within the LFB, evacuation of high-rise buildings, provision of fire safety information to residents, and inspections of fire doors, sprinklers and other fire safety measures.

The Grenfell Tower Inquiry will now progress to Phase Two, which will explore the individual circumstances of each fatality in the fire, the refurbishment of the building that led to the use of combustible cladding, and the routine service of fire protection measures in the building and their regulatory compliance, among other factors.

While the inquiry's second stage will unpack in detail the circumstances surrounding the use of combustible cladding, Sir Moore-Bick stressed the findings of Phase One underlined the need to progress remedial work on buildings fitted with combustible cladding "as vigorously as possible". ■



FIGURE 1 Solvent-free F3 foam at 5% at 12 weeks.



PHOTOS: 3F LIMITED

FIGURE 2. Standard F3 foam at 3% at 12 weeks.

WHY IS SOLVENT-FREE FOAM ESSENTIAL?

Glycol solvents used in many common fluorine-free firefighting foams come with the potential for significant environmental and performance cost.

BY **GARY MCDOWALL**

3F Limited

The fire protection industry is familiar with changes in firefighting foam (FFF) policies, which ban or restrict the use of foam containing fluorinated compounds. The importance of fluorine-free foams (F3s) is well understood; however, the role of

solvent-free foams (SFs) is lesser known. What are solvent-free foams, and why are they important to fire protection?

Solvents have historically been used in foam as stabilising agents, antifreeze protection and solubilisers. The solvents used in firefighting foams do pose some risks to health and the environment, however. Solvents have a significant organic load, which means they have a high

chemical oxygen demand (COD). When released into water they can rapidly deplete oxygen levels, potentially overloading water treatment plants or resulting in asphyxiation of wildlife in waterways.

'Solvent-free' means the foam concentrate does not contain solvents normally used in firefighting formulations such as Butyl Di-Glycol (BDG), Mono Ethylene Glycol (MEG) and Mono

Propylene Glycol (MPG). These types of glycols are generally low-cost additives used in firefighting foams to stabilise the foam bubble, lower the freezing point and solubilise the foam concentrate. Even a standard fluorine-free 3% foam concentrate can contain as much as 15% glycols within its formulation.

There are two main reasons why end users should choose solvent-free foam concentrates—one is environmental, and the other is the stability of the foam when it is in solution.

Environmental

Solvents are the forgotten pollutants when end users are considering their future foam choices. While fluorinated foams rightly generate concern about long-term environmental damage and health risks, the chemical oxygen demand of glycol solvents also comes with a significant short-term environmental cost.

Removing glycols from firefighting foam formulations will reduce COD by more than 50%. As an example, a well-known fluorine-free foam used at 3% will have a COD of 397 grams per litre, whereas a solvent-free and fluorine-free foam produced by 3F also used at 3%

has a COD of only 185 g/l. Both foams are fluorine-free and have no long-term detrimental impact on the environment. However, the short-term impact on oxygen demand of the solvent-free foam is less than half that of the similar fluorine-free foam.

Foam solution stability

The modern-day Class B F3 foams use a type of xanthan gum in formulations to overcome the removal of fluoro surfactants from their formulations. This is, in fact, the active matter required to achieve extinction of Class B liquid fuels and is the reason most 'F3' foams are pseudo plastic (gum-like). The latest of this new generation of foams have very high performance and easily achieve 1A ratings in EN1568, for example on both Heptane and polar solvent fuels.

However, there is a serious issue with F3 foam concentrate when it is used in fixed systems or hand portables (extinguishers) where the foam concentrate is pre-mixed with water. If the foam concentrate contains solvents, the foam solution is completely unstable, even at percentages as low as 1%, and this results in the gum dropping out of solution within 12 weeks. In fact,

fixed system manufacturers use higher percentages in their systems and portables from 5 to 25% by volume.

The images accompanying this article show an example of a solvent-free F3 foam at 5% (left) next to a standard F3 foam at 3% (right) after 12 weeks in solution. The difference is obvious, with the concentrates noticeably dropping out of solution in the standard F3 foam.

Fixed systems and portable units have set periods for functional discharge testing as defined in various standards and can range from one to five years, yet manufacturers of these systems are unaware that by that point the foam pre-mix they are using will have dropped out of solution and is unlikely to reach the performance levels expected for that system. We have tested six F3s of various manufacturers at between 1 and 10%, and have found all of them unstable in solution. The only way to overcome this instability in solution is to use solvent-free foam concentrates. ■

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TASMAN FIRES: NEW ZEALAND'S NEW NORM?

A review of the Tasman fires urges New Zealand to prepare, as bushfires may increasingly become part of the country's hazard landscape.

BY **ALANA BEITZ**

AFAC

A FAC's independent operational review of the Tasman fires near Nelson, New Zealand has delivered 12 recommendations for Fire and Emergency New Zealand (Fire & Emergency NZ).

In early February 2019, a fire started in the Pigeon Valley and burned more than 2,300 hectares, including significant areas of mature pine plantation. In the days and weeks that followed, other fires broke out at Rabbit Island, Atawhai, Moutere Hill and Dovedale Hill. These fires have collectively been termed the 'Tasman fires'.

In the lead-up to ignition, the region had experienced ten days of 'Extreme' forest fire danger and 16 days of 'Very High' danger. In response to the dry spell, Fire & Emergency NZ declared a prohibited fire season (or total fire ban) across the Nelson and Tasman regions on 27 January.

Although fire is often not considered a major natural hazard in New Zealand, the review pointed to the emerging risk driven by increasing temperatures and decreasing rainfalls exacerbated by climate change. The review urged New Zealand's emergency services and public to expect and prepare for increasing fire threats.

The review process

The review was conducted by a team with broad and varied experience of urban fire, rural fire, forestry, land management and aviation operations from both Australia and New Zealand. The team was led by ACT Parks and Conservation Service Fire Manager Neil Cooper, and included AFAC Director Capability and Assurance Paul Considine, Fire & Emergency NZ Regional Manager Bryan Cartelle and Fire Assistant Area Commander Darryl Papesch. While a

deliberate decision was taken to include two Fire & Emergency NZ personnel with rural and urban backgrounds in order to provide local knowledge and expertise to the review, the conclusions of the review were arrived at independently of Fire & Emergency NZ.

The team carried out field work in New Zealand between 5 and 14 June 2019, meeting with Fire & Emergency NZ personnel and staff from other agencies, government and representative bodies. They visited the fireground, discussed the suppression strategies used and considered documentation relevant to emergency management risk reduction, readiness, response and recovery.

The review was conducted at the request of Fire & Emergency NZ, continuing a history of New Zealand fire and emergency management agencies

proactively seeking external reviews of significant events. The review team noted the request as a demonstration of Fire & Emergency NZ's wish to be a learning organisation and endeavoured that their review should support them.

Challenges for containment

Recollections from first responders on the day the fire broke out suggest conditions were not that unusual or severe. During 5 to 13 February, midday temperatures sat between 16 and 27 degrees Celsius, relative humidity ranged from 30 to 81% and wind speeds ranged between 6.8 and 17.6 kilometres per hour. However, extended drought across New Zealand had primed the landscape for fire, with only 3 and 5 millimetres falling in January 2019 and the last significant rainfall recorded on the 26th December 2018.

Remotely piloted aircraft system being used to assess conditions on the Pigeon Valley fireground.

On 5 February 2019, a tractor working in a rocky paddock of almost completely cured grass ignited a fire in the Pigeon Valley. The fire grew quickly under the dry conditions and advanced toward adjacent forestry blocks where it continued to spread rapidly uphill.

Suppression efforts were impacted by the fire's location in a convergence zone, where the north-east and south-west winds were observed to meet and swirl over the fire site almost daily, until one eventually dominated. Slope, combined with the wind and fuel type, also contributed to faster spotting and spreading of the fire, overriding the effects of downhill slopes and gullies that would typically slow a fire's spread. Surrounding valleys also contributed to funnelling of the winds and therefore the fire spread direction.

The fire's extreme behaviour made aerial attack and heavy machinery installing containment lines the preferred suppression strategy. Heavy fuel loadings, steep terrain and extreme fire behaviour meant that it was judged too dangerous to undertake initial ground attack.

While no human life was lost as a result of this event, the physical and economic damage to property and the environment in the region was extensive. The fire destroyed significant amounts of commercial forest, one home and

multiple outbuildings, plastic water tanks and lines, fences, shelterbelts, native forest and pastures. Approximately 3,000 people and 700 livestock and pets from the surrounding valleys evacuated during the fire.

A new hazard landscape

There are precedents for this event in recorded New Zealand history, but not many. The review observed that community preparedness is negatively impacted by the perception that fire is not a major natural hazard for the country. Although the number of high fire danger days is currently low in New Zealand, the trends of decreasing rain and increasing temperatures associated with climate change drives the likelihood of more severe events.

In January, Fire & Emergency NZ advised the public of elevated fire conditions, cancelled all fire permits and closed public access of all forests and high-risk areas. Despite this, the general impression was this was a 'one-off' event and the review team commonly heard, "it won't happen again in my lifetime"—indicating a reluctance by some to incorporate fire protection into their day-to-day business or home life. To rebut, the review offered this comment:

"If there is one high-level message that this review communicates with the New Zealand public, we hope it will be that fires of this kind must be expected to occur more frequently in the future, and all stakeholders involved, down to the level of individual residents in fire-prone areas, need to prepare for that."

The review stated that the climate change implications for New Zealand in terms of the incidence of fire are "potentially profound", adding that the possibility of multiple simultaneous incidents associated with a warming climate will make firefighting efforts more difficult to resource if not addressed.

Other key conclusions of the review focused on refining and updating existing procedures around the risk reduction, readiness, response and recovery phases of emergency management. The review's findings were not that these procedures were necessarily deficient at the time they had been introduced—overall, the procedures led to positive outcomes in the Tasman fires—but rather that they had to be refreshed and adapted to cope with the future fire regime that might be expected for New Zealand.

Without an extensive history of large vegetation fires, it is a credit to those involved that this significant incident was managed without loss of life, major injury or extensive loss to the built environment. The review advised that the outcomes should give the community in New Zealand a level of confidence that Fire & Emergency NZ is able to manage these significant incidents, take appropriate actions and remain open to learning from events, such as the Tasman fires, with the aim of achieving continuous improvement. ■

Access the full AFAC independent operation review of the Tasman fires here:
www.fireandemergency.nz/research-and-reports/tasman-fires-operational-review.

A firefighting aircraft refills from a residential swimming pool during the Tasman fires.



Crews work in forestry blocks on the Pigeon Valley fire.



PHOTOS: FIRE & EMERGENCY NZ



CONVERSATIONS ON COUNTRY ABOUT CULTURAL BURNING

Uncle David Wandin and Victor Steffensen at the AFAC19 Professional Development Program.

As part of the AFAC19 Professional Development Program, Traditional Owners and Indigenous and non-Indigenous fire practitioners and agency representatives walked together on Wurundjeri land (Healesville, Yarra Ranges) to discuss cultural burning for management outcomes.

BY **ALANA BEITZ**

AFAC

Recent fires across Australia have turned public attention to hazard reduction burning, with much of the media about mitigation focusing on the use of traditional burning methods for reducing fuel loads across Australia.

The movement to reintroduce these burning practices onto the Australian landscape has long been accompanied by regulatory and cultural barriers. To address these, in August 2019 a field trip to bring Indigenous and non-Indigenous fire practitioners together was hosted

as part of the AFAC19 Professional Development Program.

The field trip provided an opportunity for Traditional Owners, Indigenous fire practitioners and fire and land management agency representatives to walk on Country together while discussing their responsibilities and connection to the land. The group of 40 people travelled to Melbourne's Yarra Ranges and visited two sites: a location in Healesville where Forest Management Victoria recently conducted a planned burn for Healesville Sanctuary, and Coranderrk Station, owned by the Wandooon Estate Aboriginal Corporation.

The group, comprising of people from across Australia, New Zealand and Canada, was welcomed onto Country at the gates of Healesville Sanctuary by Wurundjeri Elder Uncle David Wandin.

"Importantly, this day is not about fire, it's about culture. It's about having conversations about Country, on Country," Uncle David said.

At the burn site, Lisa Stuart of Healesville Sanctuary introduced the area to the group, as well as some of the issues they were attempting to address through the burn, such as depleted biodiversity and weed infestations. Uncle David and Indigenous fire practitioner Victor Steffensen provided

an assessment of the burn area, pointing to burn marks on the trees and regrowth underfoot to explain the fire's short and long-term impacts to the area and its occupants.

"It's not just about us; we need to think about what lives under the bark, in the ground, above in the trees. This is much more than just maintaining our safety and burning off bushfire risk, it's ensuring that we, and everything else that inhabits this area, can come back and live in it," Uncle David said.

Uncle David identified the common fear of fire as a major barrier to the implementation of regular 'cool burning' to manage landscapes in Australia.

"We use the language of war when we talk about fire. We're 'attacked' by fire. We have fire 'fighters'. We use big trucks and 'bomb' fire from the sky with aeroplanes," he said.

"But if you're cool burning you should be able to stand next to the flame, it should be low enough that you can step over it. That's not being a fire 'fighter', that's working with fire."

Mr Steffensen said another Western mentality that hindered the reintroduction of Indigenous land management practices was the value attributed to science over Indigenous knowledge.

"Agencies are chasing science, not knowledge—but science is just young knowledge. We've done generations and generations of research to know what we know. But it's our knowledge, our intellectual property; we don't want to see it published as a science paper with someone else's name on it," he said.

The recurring theme of the field trip was the necessity of strong partnerships between Aboriginal communities and agencies, grounded in trust, to navigate the sensitivities of cultural burning.

Dja Dja Wurrung Clans Aboriginal Corporation Chair Trent Nelson and Forest Fire Management Victoria Assistant Chief Officer Scott Falconer presented *The Victorian Traditional Owner Cultural Fire Strategy* to the group and shared their journey of reintroducing cultural fire in Central Victoria.

"We're talking about fire here, but it's really about social justice, getting Aboriginal people in employment—employment on Country—and resourcing and skilling up people to do prescribed and cultural burning in line with their family aspirations," Mr Nelson said.

Mr Falconer added that agencies shouldn't think of Traditional Owners as stakeholders, but partners and leaders in fire management. He also said agencies

must be patient when developing these relationships and be willing to share authority.

"From an agency perspective you need to establish trust, you can't assume it. Because why would there be trust? It's going to take longer, but it's crucial for these relationships," he said.

The group moved to the second site of the field trip, Coranderk Station, to continue the conversation. Uncle David shared his vision of creating a demonstration site on the property to showcase how primary producers can work alongside fire and increase their productivity by returning pastoral land to ecology.

CFA State-wide Cultural Heritage Advisor Michael Sherwen took the opportunity to reiterate the message that Indigenous fire management activities need to be done with the community, by the community and for the community.

"It's hard to start these conversations, so we really want to encourage the grassroots communities across Victoria to put their hand up and help us get the right people on board. Let them be a part of it, let it be a part of their Dreaming," he said.

Deakin University researcher Dr Timothy Neale contributed his personal experiences of engaging with Indigenous communities through his research projects. He offered his advice to non-Indigenous people engaging with Traditional Owners.

"Don't be prescriptive, don't make promises you can't keep and be aware of cultural sensitivities and intellectual property. Let yourself be driven by a sense of justice and accept that you don't know where it will lead, but be willing to share the journey," he said.

The field trip provided the participants with an opportunity to break out of their daily routine, to gain

insight to the methodologies, lore and holistic approaches of Indigenous fire management, and to have a conversation 'about Country, on Country' to help shift their thinking toward new ways of approaching fire management.

Importantly, the field trip empowered the participants to continue the conversation when they returned home, while recognising that the arrangements and partnerships to support the reignition of cultural fire across Australia will be as diverse and unique as the communities involved in their establishment. ■

FIND OUT MORE ABOUT CULTURAL BURNING IN AUSTRALIA:

The Centre of Excellence for Prescribed Burning acknowledges the First Nations peoples' connection to Country and hosts a wealth of resources addressing Indigenous fire management partnerships, knowledge and guidelines.

www.knowledge.aidr.org.au/resources/traditional-owners-and-cultural-burning.

The Victorian Traditional Owner Cultural Fire Strategy supports reintroducing cultural fire to the landscape through Indigenous-led practices, enabling Traditional Owners to heal Country and fulfil their rights and obligations to care for Country.

www.knowledge.aidr.org.au/media/6817/fireplusstrategyplusfinal.pdf.

The Firestick Alliance is building capacity for Indigenous land management by ensuring practitioners can 'read Country' through the development of accredited training that empowers participants to look at the whole system to apply the 'right' fire.

www.firesticks.org.au/alliance.

The Jigija Indigenous Fire Training Program is an Indigenous-owned business that provides wildfire management and mitigation training on the traditional country of the Gangalidda People. They conduct controlled burns and demonstrate fire management planning for savanna landscapes.

www.jigija.com.au.

Trent Nelson assesses a tree following a prescribed burn.



Participants at the AFAC19 Professional Development Program chat and reflect at the workshop.





Firefighters on the ground at the Pechey fire, Queensland.

COHESION WHEN THE HEAT IS ON

Across our fire and emergency service agencies, a unity of purpose and effort prevails as one of our most catastrophic fire seasons continues to play out. National support arrangements are in place to ensure all of our jurisdictions can request and receive the support they seek.

BY **STUART ELLIS**

AFAC

Australians should be assured that the coordination of the country's fire and emergency services is effective, efficient and ongoing. At the beginning of this fire season, I sat in the NSW Rural Fire Service (RFS)—a vast operations centre with a wall of screens and information—and observed personnel from some 30 different agencies work together to keep the people of NSW safe. A similar scene was playing out in the Queensland Fire and Emergency Services Headquarters in Kedron, Brisbane.

No tension or friction was evident. Across our agencies, this unity of purpose and effort perseveres as one of our most catastrophic fire seasons continues to play out. While this is expected, there are national support arrangements unfolding to ensure that all of our jurisdictions can request and receive the support they seek.

The Interstate Liaison Unit (ILU) is a capability that can be embedded into state operation centres. The unit hosts representatives across states and territories so they can oversee their jurisdictions' contribution to the overall effort. The ILU is coordinated by the National Resource Sharing Centre (NRSC) Deployment Manager.

The NRSC is a function of AFAC, which coordinates the requesting of resources across the country. The NRSC ensures a nationally coordinated effort, as it receives resourcing requests and seeks to fill these requests from other jurisdictions.

It effectively acts as a funnel, collecting resources from across the country and channelling these to the requesting jurisdiction. In this way, those states in need are only required to focus on where they intend to deploy the interstate resources, not where they come from. Aerial resources that are contracted through the National Aerial Firefighting Centre are allocated on a similar basis.

With state and territory governments last year expending \$5.5 bn to support fire and emergency services across Australia and New Zealand, together with over 290,000 personnel and many thousands of specialist vehicles, Australia has a formidable capability. These personnel are all trained, equipped and prepared to assist.

While many volunteers are not available to travel far from their homes or interstate due to local responsibilities, employment or the need to manage drought-stricken stock that require daily feeding, other volunteers are prepared to deploy. In this way thousands of firefighters can pass through firegrounds where they are required on a weekly basis.

This response capacity is supported by an increasingly sophisticated information capability to inform and prepare the public for fire emergencies they may face. Warnings follow a nationally agreed structure and plans are in place to refine this further to a multi-hazard and national approach. This information and advice is then spread through the public's apps, websites and news feeds.

Australia has never been better prepared to face natural disasters. This is achieved through integrated engagement with the Commonwealth and national protocols for managing our incident management responses and available fleet of over 160 contracted aircraft.

Arrangements are in place to draw on personnel from New Zealand, Canada and the United States. Hundreds of international personnel have already assisted their Australian counterparts this season.

None of this comes with guarantees; however, a great deal is in place and has been practised, providing Australia with a truly national capability drawn from state and territory agencies from across the Commonwealth. ■

Stuart Ellis is CEO of the National Council for Fire and Emergency Services—AFAC.

RFS state control room briefing.



PHOTO: RFS



PHOTO: AFAC



A painting by Mel Kushner of the 1871 Peshtigo fire.



A mural of the fire on the wall of the Peshtigo Fire Museum.



A map of the destruction caused by the fire.

THE DEADLY PESHTIGO FIRE—1871

BY **BARRY LEE OAM**

On 8 October 1871, the most devastating forest fire in American history swept through north-east Wisconsin. Thought to have begun in the town of Peshtigo, the fire claimed between 1,200 and 2,400 lives, burned through 490,000 hectares of land and caused an estimated US\$169 M damage.

It is often referred to as the 'forgotten fire of Peshtigo' because it occurred on the same day as the more famous conflagration that destroyed much of Chicago*. Both fires were made possible by extremely dry weather conditions during the summer of 1871. There was no weather station in Peshtigo, but residents recalled no substantial rainfall since early July.

Peshtigo was a lumber town about 400 kilometres north of Chicago, near the western shores of Green Bay, and was home to some 1,750 inhabitants on both sides of the Peshtigo River. The town contained a number of sawmills and factories, two churches, several stores, and establishments known as 'boarding houses' and 'saloons'. It had timber sidewalks (and sawdust was

so plentiful that it had been used as a topping for some of the roads), and a railroad to the town was, at the time, under construction.

In the neighbourhood of Peshtigo, and in many other locations in northern Wisconsin and Michigan, fires had been burning in the woods without anyone paying much attention. By 9.30 pm on 8 October, most of the people in Peshtigo had begun to go to bed, and to the south, through the smoke, a dull red glow could be seen near the horizon.

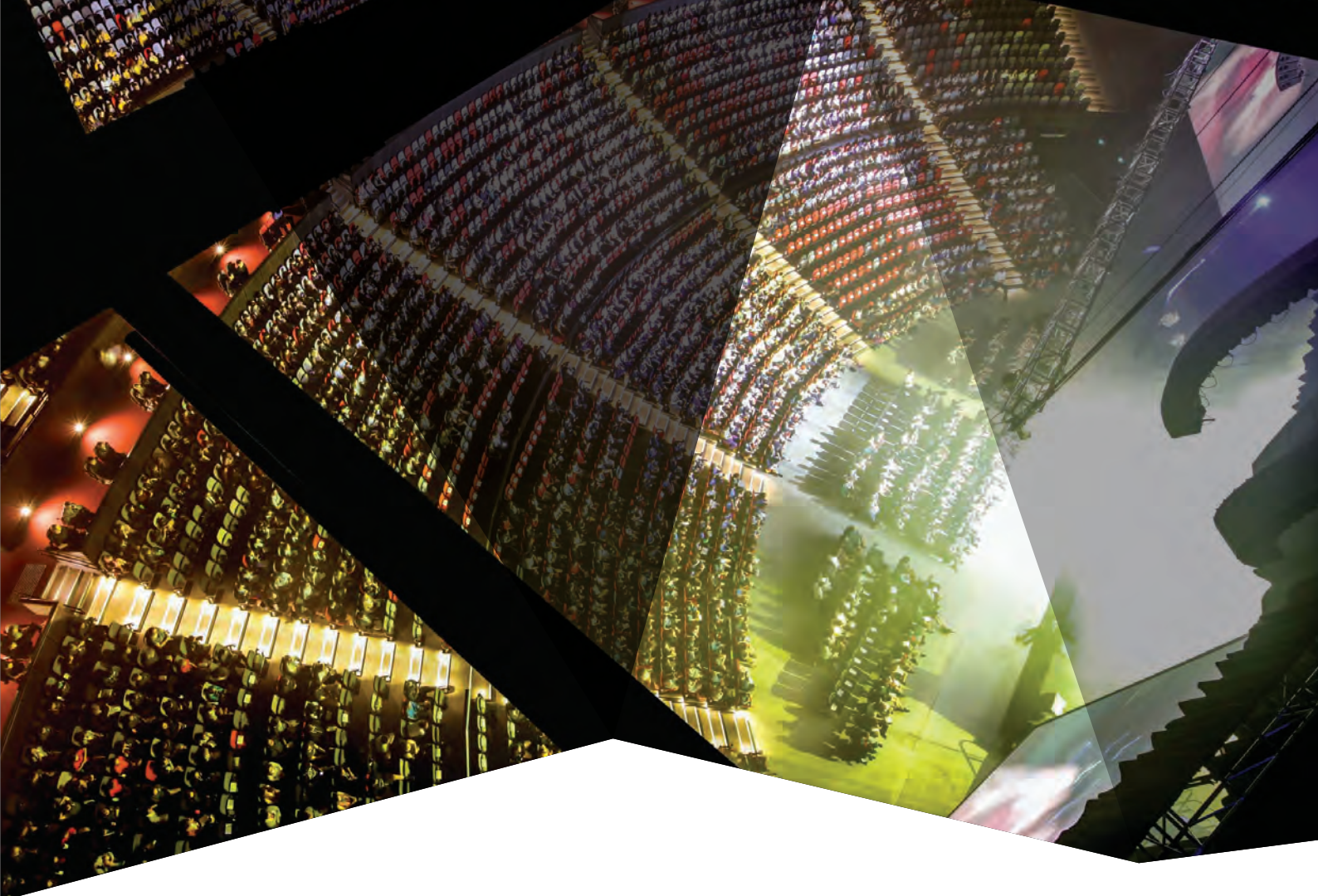
A blaze sprang up in the south-west and the air became very hot. There was a low rumbling noise, which increased to a roar and, around 10 pm, flames could be seen on the treetops near the town. A firestorm was developing; burning brands began to drop down into the sawdust streets, onto the timber plank sidewalks and the combustible roofs. As the fire erupted, the only fire engine in Peshtigo—a hand-operated pumper—was overwhelmed, and bucket brigade members soon fled the onrushing flames.

The firestorm, whipped up by what is today acknowledged to have been a low-grade tornado, was described as a wall of flame one kilometre high,

five kilometres wide and travelling up to 160 kilometres per hour. It was hotter than a crematorium, turning sand to glass. People spontaneously combusted and were cremated by heat that reached 2,000 degrees Fahrenheit. They succumbed instantly from breathing superheated air. They died of smoke inhalation, were run over by panicked livestock or drowned in the frigid river where they sought refuge. Others were crushed by collapsing buildings, impaled by flying debris or pulverised by all manner of falling objects. Some chose to commit suicide rather than face death by fire.

Peshtigo was gone in an hour. There are no pictures of the Peshtigo fire, but given that it was bigger than anything yet recorded, it must have been enormous. It was so intense that houses and other buildings were completely destroyed except for chimney bricks, foundation stones and bits of melted metal. Many of the bodies were unrecognisable, identifiable only as charred bones. The town of Peshtigo was utterly incinerated. ■

**The Great Chicago Fire is memorialised by Fire Prevention Week, observed annually in the US during October.*



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BY **JESSICA TEMPLE**

Technical Administrator—Projects and Standards,
FPA Australia

AND **IAN FINDLAY**

Technical Officer—Projects and Standards, FPA Australia

STANDARDS

CE-030 Maritime structures

The revision of AS 3962 *Guidelines for design of marinas* is being prepared for committee ballot.

FP-002 Fire detection and alarm systems

Public comment on AS 4428.3 (fire brigade panel) closed late November. Revisions of AS 1603.17 (warning equipment for people with hearing impairment) and AS 4428.16 (emergency warning CIE) are being progressed towards release for public comment. Work on the revision of AS 1670.6 (smoke alarm installation) continues.

FP-004 Automatic fire sprinkler installations

Public comment on Amendment 2 to AS 2118.1:2017 has been reviewed. Progress continues on revisions of AS 2118.2 (drencher systems) and AS 2118.6 (combined systems).

FP-009 Fire hydrant installations

FP-009 is meeting in early December to progress the AS 2419.4 draft (new standard for STORZ connections).

FP-011 Special hazard fire protection systems

FP-011 met in October to kick off the revision of AS 3772-2008 (kitchen systems). Work on the revision of AS 4587-1999 (water mist systems) continues.

FP-020 Construction in bushfire-prone areas

FP-020 met in October to review editorial and technical issues raised with Standards Australia by AS 3959 users. The taskforces for the review of outstanding items continue to progress those items.

FP-022 Fire protection of mobile and transportable equipment

FP-022 met in late November to kick off the revision of AS 5062 *Fire protection for mobile and transportable equipment*.

TS-001 Building commissioning

Progress continues on a new technical specification on building commissioning.

TECHNICAL ADVISORY COMMITTEES

The most recent round of TAC meetings was held in November, with the next round proposed to be held in March.

TAC/1 Maintenance of fire protection systems and equipment

The TAC reviewed comments received for inclusion in the draft project proposal for the revision of AS 1851-2012.

TAC/2 Fire detection and alarm systems

The possible technical document to address confusion regarding fire detection and alarm systems for car parks has been put on hold.

However, the draft document on speaker layout has been updated and is currently being reviewed by the TAC.

Work on the draft Good Practice Guide (GPG) on smoke alarms has also begun again.

The TAC discussed some common issues relating to AS 1851-2012 *Routine service of fire protection systems and equipment*.

TAC/3/7 Portable and mobile equipment

A draft document on the replacement of extinguishing agent in extinguishers after use has been developed and is currently being reviewed by the TAC.

Storage and transport of existing fluorinated foam fire extinguishers was discussed.

Ongoing discussions on the Australian Standards, including AS 1851-2012.

TAC/4/8/9 Fire sprinkler and hydrant systems, tanks and fixed

Discussions occurred on the NCC 2019 Amendment 1 Public Comment Draft.

The draft GPG on hydrant commissioning is still under review by the TAC. The pumpset checklists are also being progressed.

TAC/11/22 Special hazards fire protection systems

The working group for the proposed revision of AS 3772 is currently reviewing Section 9 (Maintenance) to align with the current edition of AS 1851.

Lithium ion batteries and their fire risk were discussed.

Work continues on revising IB-06 *Selection and use of firefighting foams* to address ongoing developments in this area.

FPA Australia continues to engage with regulators on firefighting foam use at Australian airports.

TAC/17 Emergency planning

A project proposal for a revision of AS 3745 is being developed.

The topic of emergency planning in schools was further discussed.

A draft revision of the IB-11 *Evacuation diagrams* document is currently being reviewed by the TAC.

TAC/18/19 Passive fire protection

Work continues on the update of PS-05 *Product compliance and evidence of suitability*.

Discussion occurred on the difference between access panels and doors, looking at when is an access panel a door and when is it an access panel.

Work on the Good Practice Guide on intumescent dampers has begun again.

TAC/20 Bushfire safety

A proposed ready reference guide to AS 3959 *Construction of buildings in bushfire-prone areas* is currently being drafted.

Work continues on a general bushfire attack level (BAL) assessment guide, as well as a proposed draft TAN on sarking.

The TAC had a general discussion on the NCC Bushfire Verification Method.



FIRE AUSTRALIA CONFERENCE & TRADESHOW 2020

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Sydney**

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For more information, visit
www.fireaustralia.com.au.

STEWART AND HEATON MENTAL HEALTH MASTERCLASS

**12-13 May 2020,
Christchurch, New Zealand**

The Stewart and Heaton Clothing Company will host a free masterclass to address workplace resilience and leading by influence in Christchurch. The masterclass follows on from the success of the Melbourne event in 2019 and is a key component of the Leading Practice in Mental Health Award, which recognises the continued need to address mental health and wellbeing in the fire and emergency services.

LESSONS MANAGEMENT FORUM 2020

**14-15 July 2020,
Brisbane Exhibition and Conference Centre**

AFAC is excited to be hosting the 2020 Lessons Management Forum in Brisbane. After the success of the 2019 forum, this event will build on the knowledge,

PHOTO: FPA AUSTRALIA



successes and innovations in the lessons management sphere.

For more information, visit
www.aidr.org.au/resources/2020-lessons-management-forum.

AFAC20 POWERED BY INTERSCHUTZ

**25-28 August 2020,
Adelaide Convention and Exhibition Centre**

Australia's largest conference and trade exhibition for the fire and land management sectors is returning to Adelaide in August 2020. The conference will bring together a broad spectrum of delegates to discuss, learn and share experiences surrounding the theme 'Connecting communities. Creating resilience'. It will feature leading research

from the Bushfire and Natural Hazards CRC and dedicated streams from the Institution of Fire Engineers, Australian Institute for Disaster Resilience and Women in Firefighting Australasia.

For more information, visit
www.afacconference.com.au.

PHOTO: AFAC



FireMate Software was winner of the Best Exhibition Stand People's Choice Award at Fire Australia 2019.

Stewart and Heaton Leading Practice in Mental Health Award presented at the AFAC19 Conference.

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Amanda Leck

Amanda Leck has taken up the newly created role of Executive Director at the Australian Institute for Disaster Resilience (AIDR). Ms Leck was previously the Director, Community Safety and Resilience across AFAC and AIDR.



Greg Leach

Greg Leach has taken up the role as Commissioner of Queensland Fire and Emergency Services. Mr Leach has over 30 years of experience working in senior operational and executive positions at the Country Fire Authority and Metropolitan Fire and Emergency Services Board in Melbourne, and Ambulance Victoria.



Shane Fitzsimmons

Shane Fitzsimmons's term on the AFAC Board has concluded. Within AFAC, Mr Fitzsimmons has also served as a Director of the National Aerial Firefighting Centre (NAFC) and Chair of the NAFC Board from 2009 to 2013. He continues to serve as the Commissioner of the NSW Rural Fire Service.



David Nugent

Director of Fire, Environment, Land and Water at Parks Victoria David Nugent has been appointed to the AFAC Board. Mr Nugent was awarded an AFSM for his leadership and contribution to improved management of Victorian forest firefighting over more than two decades at a local, national and international level.



Ken Block

Ken Block has taken up the role as the Commissioner for the new Fire Rescue Victoria, which will commence on 1 July 2020. Mr Block has held the position of Chief Fire Officer at the Edmonton Fire Rescue Services in Canada, where he has led change in mental health and wellbeing, building codes and diversity.



David Bruce

David Bruce has taken up the role of Acting Chief Executive and Chief Officer at the Metropolitan Fire and Emergency Services Board (MFB) in Melbourne. He has been with the MFB since July 1985, working as a firefighter and in project teams for staff development.



Georgeina Whelan

Georgeina Whelan has been appointed as the fifth Commissioner at the ACT Emergency Services Agency (ESA), and is the first woman to hold the role. Ms Whelan has previously served as the Chief Officer at ESA and worked in military disaster response for over 30 years.



Carlene York

Carlene York has been appointed as the Commissioner of the NSW State Emergency Service. Ms York has coordinated responses to storms, tornadoes and bushfires, and she headed up the strike force that captured Australia's most wanted offender, Malcolm Naden, during her time as Commander of Human Resources at the NSW Police Force.



Kyle Stewart

Kyle Stewart has returned to his position as an Assistant Commissioner at the NSW Police Force after serving as the Acting Commissioner at NSW State Emergency Service.



Reece Kershaw

After serving as the Commissioner of Police and Chief Executive Officer of the Northern Territory Fire and Emergency Services, Reece Kershaw has returned to the Australian Federal Police, where he has taken up the role as Commissioner. Mr Kershaw was awarded the Australian Police Medal in the 2016 Australian Day Honours.



Jamie Chalker

Jamie Chalker has been appointed as the Police Commissioner and Chief Executive Officer for Fire and Emergency Services in the Northern Territory. Mr Chalker was awarded a Royal Humane Society Bronze Medal for Bravery after he entered floodwaters and rescued a man who had been swept down river in Wattie Creek.



Daniel Austin

After serving as an Assistant Chief Officer and the Director of Regional Operations at the South Australia Country Fire Service, Daniel Austin is taking on the role of Deputy Commissioner Operations at NSW State Emergency Service.



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- Specifically designed to suppress high-challenge storage fires, without the need for in-rack sprinklers.
- The only storage sprinkler FM Approved* to provide ceiling-only protection for warehouses with 55 ft ceilings.
- Design Pressure of 80 psi (5,5 bar) with a remote area calculation consisting of nine sprinklers (three sprinklers installed on three adjacent branch lines).
- Classified as a Quick Response Storage Sprinkler, FM Approved to protect Class I-IV commodities, as well as cartoned unexpanded plastics, stored in either single- or double-row racks up to 50 ft (15,2 m) in height.
- Available in ordinary and intermediate temperature ratings - 165° F (74° C) and 205° F (96° C).
- Available with 1 inch NPT or 25 mm BSP thread size.

Model Number: VK514

Base Part Number: 22894

Listings/Approvals: FM, UL

K-factor: 28.0 (404)

Connection: Threaded 1" NPT
25 mm BSP

Temperature: 165° F (74° C)
205° F (96° C)

Operating Element: Fusible Link

Finish: Brass

Item Price Group: V150

Occupancy/Hazard: Storage

Technical Datasheet: F_010715

*FM Approval offered in addition to the VK514 sprinkler's existing K28 ESFR UL Listing.

General reference only. Prior to the design, layout, and/or installation of any sprinkler system, please refer to Viking's technical documentation and consult with the AHJ.



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