

Tunnel Safety & Fire Protection

Risk management, emergency response & fire prevention approaches to achieve safety excellence

4th & 5th June 2013, Royal on the Park, Brisbane

Key speakers



Chris Dando
Senior Manager
Operations & Maintenance

BRISCONNECTIONS



Professor Arnold Dix
Court Appointed Tunnel Safety
Expert, Scientist & Lawyer

TUNNEL RISK SPECIALIST



Deputy Chief Gary English
Assistant Fire Marshal
Special Projects



**CITY OF SEATTLE
FIRE DEPARTMENT**



Michael Huber
TBM Plant Manager

TRANSCITY JOINT VENTURE

Benefits of attending

- **Overcome all fire protection & safety challenges** to establish tunnel security
- **Incorporate risk modelling** to protect your tunnel from design to operations
- **Create fluid dialogue with emergency teams** to achieve best practice safety
- **Develop a robust risk management framework** to ensure safety excellence

See inside for more speakers

Mid Conference Workshop

Engineering due diligence
under the Work Health
& Safety Act

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Overcoming all essential fire protection & safety challenges

Tunnel fires in Europe and further around the globe have proven that it is imperative to devise a robust strategy for designing, implementing and upgrading tunnel fire safety. As tunnel developments boom across Australasia and rail and road travel gathers momentum, tunnel operators must act now to optimise fire protection and safety.

This conference will arm you with the tools to:

- Implement the right safety measures to maximise fire protection and guarantee tunnel security
- Assess your tunnel infrastructure to pinpoint installations that will maximise tunnel fire safety levels at the lowest possible cost
- Determine the very best approach towards successful evacuation procedures by incorporating human behaviour methodology
- Work closely with emergency response teams to devise the best operational safety plan possible

“Fire suppression systems are only a part of the answer, never the whole solution to the mitigation of fire risk.”

Fathi Tarada, *Railway-Technology.com*

Who should attend?

Road & Rail Tunnel Owners & Operators

Engineering & Design Firms

Government Agencies & Bodies

Fire Testing Centres & Institutes

Emergency & Rescue Services

Passive & Active Solution Providers

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10th May 2013

Plus key contributions from

Julie Nielsen
**Workplace Health & Safety Queensland
Department of Justice & Attorney-General**

José L. Torero
The University of Queensland

Paul Williams
Norman Disney Young

Craig Hiscock
Parsons Brinckerhoff

Matteo Ortu
Transcity Joint Venture

Alex Webb
CSIRO

Scott Cain
Transurban

Warren Gourley
Transurban

Steven Knowles
AECOM

Dr. Xiaobo Qu
Griffith University

Richard Robinson
R2A Due Diligence Engineers

Peter Johnson
ARUP

Professor Beverley Raphael & Penny Burns
University of Western Sydney

Max Lakkonen
FOGTEC Brandschutz GmbH & Co. KG

Simon Tait
CMI Music & Audio

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you save

Day 1

Tuesday 4th June 2013

8.30 Registration, coffee & networking

8.50 Opening remarks from the Chair

Risk management methodologies

9.00 Reviewing the tunnel code of practice within design & construction

- A look at the guidance suggestions made in regards to consultation of safety and fire protection by relevant agencies in the design and construction stages
- Assessing the outcomes of this new transition period

Julie Nielsen, Regional Director

Workplace Health & Safety Queensland
Department of Justice & Attorney-General

9.40 Fire safety strategies for tunnels – what is the solution?

- Understanding the essentials to conducting an adequate fire engineering analysis
- Fire engineering methods within the context of tunnel applications emphasising the appropriateness of the different methods as well as the limitations of current tools and technologies

José L. Torero, Head of Civil Engineering
The University of Queensland

10.30 Water mist & deluge systems for tunnels – comparison of performance, technology & costs

- Differences and similarities of water mist and deluge systems
- Full scale fire test results with water mist and deluge systems
- Standardisation and design guidance for water mist and deluge systems in tunnels
- Latest news from Europe: SOLIT2 research program, new tunnels being currently protected

Max Lakkonen, General Manager, Tunnel Systems
FOGTEC Brandschutz GmbH & Co. KG



11.10 Morning tea & networking

Safety approaches to tunnel scenarios

11.40 Safety systems for tunnels under excavation - considerations of Transcity for the Legacy Way project

- Considerations to establish safety systems and emergency response onsite
- Training and resourcing requirements
- The COP 2011 and the concept adopted for Legacy Way
- An overview of the key systems and equipment adopted

Michael Huber, TBM Plant Manager &
Matteo Ortu, Tunnel Construction Manager
Transcity Joint Venture (Legacy Way Tunnel)

12.20 Enforcement of exclusion of dangerous goods vehicles from tunnels

- A look at Australia's newest toll road, AirportlinkM7 in Brisbane
- Implementing an Australian-first system that monitors and records dangerous goods vehicles that enter the tunnel with the potential to be able to act as a record for enforcement

Chris Dando, Senior Manager, Operations & Maintenance
BrisConnections (Airport Link Tunnel)

1.00 Networking lunch

2.00 Operational & incident response systems for tunnel fire safety

- Outlining the processes, challenges, opportunities and final implementation outcomes associated with developing an entirely new operational and incident response user experience for the operators of the Victoria Park Tunnel in New Zealand
- The key design drivers of the tunnel operators, the fire life safety considerations, the software developer's constraints and the functional implementation through the broader project

Craig Hiscock, Senior Fire Engineer
Parsons Brinckerhoff

2.40 Design fires, testing & fire engineering for passenger trains operating in tunnels

- Discover the results of full scale fire experiments on passenger train carriages by CSIRO and the comparison with full scale fire tests in Europe
- Looking at the research by others on passenger train design fires and typical design fires that have been applied in the past
- Uncovering methods for predicting a design fire for a particular train design and comparison with current experimental data and limitations of these methods

Alex Webb, Fire Safety Engineer Manager
CSIRO

3.20 Afternoon tea & networking

3.50 Risk impact analysis of traffic flow in urban road tunnels

- Evaluating the impact of traffic volume and proportion of heavy goods vehicles on road tunnels and how they may significantly affect societal risk
- Looking at the "excess risk index" to quantify the road tunnel risk magnitudes that do not pass the safety target
- Applying this methodology to Singapore's KPE road tunnel and the results

Dr. Xiaobo Qu, Lecturer
Griffith University

4.30 ROUNDTABLE DISCUSSIONS

Delegates will break into groups to share their expertise and learnings on:

- Risk assessment models
- Codes and standards
- Technology

5.10 Closing remarks from the Chair & close of day one

Day 2

Wednesday 5th June 2013

8.30 Welcome, coffee & networking

8.50 Opening remarks from the Chair

Emergency & incident response planning

9.10 Evaluating the breaking point of tunnel systems within their lifecycle

- Looking holistically at the safety systems for tunnels and the levels of safety
- Evaluating what system can fail and still allow the tunnel to operate or conversely if certain systems fail should the tunnel be closed?
- Essentially all the tunnel safety systems are designed to create a certain level of safety

Paul Williams, Senior Fire Engineer

Norman Disney Young

9.50 Understanding the limits imposed by tunnels in emergencies



- Exploring the unique tunnel environment and how responders must develop and revise their tactics to address the limits imposed
- Looking at the need for improved tunnel integration including systems, tunnel operations and emergency response
- Taking into account higher HRR in tunnel fires and how this effects strategy and tactics

Deputy Chief Gary English, Assistant Fire Marshal – Special Projects

City of Seattle Fire Department

Evaluating behavioural & situational factors in tunnel safety

10.30 Safety upgrade to the Terrace Tunnel in NZ – delivering a smarter tunnel

- Transforming the outdated tunnel management systems and the mechanical plant to eliminate the end of life issues and reduce significant fire risks
- Working through the challenges such as existing tunnel constraints, maintaining traffic during the day, ineffective suppression systems and emergency ventilation
- Looking at the steps taken in delivering safety innovation

Steven Knowles, Technical Manager

AECOM

11.10 Morning tea & networking

11.40 Design choices for tunnel fire safety for the Fehmarnbelt Fixed Link, Denmark

- An overview of the Fehmarnbelt Fixed Link, an 18km sub-sea tunnel between Denmark and Germany
- Illustrating the design choices, particularly with regard to ventilation options and suppression options, for what will be the longest sub-sea road tunnel in the world when completed

Peter Johnson, Principle and Fellow

ARUP

12.20 Voice alarm intelligibility in road tunnels – the standards, the problem & designing solutions

- Intelligibility and the STI standard (IEC 60268:16)
- Building standards which mandate STI performance
- Challenges to achieving intelligibility in tunnels
- Design solutions and project examples

Simon Tait, Pro Audio Product Manager

CMI Music & Audio



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www.safetyintunnels.com

1.00 Networking lunch

2.00 Evaluating the 2007 Burnley tunnel incident from an operator/owner perspective

- An overview of the 2007 Burnley tunnel incident
- The operator's perspective on the events that unfolded
- The owner's perspective on the events that unfolded

Scott Cain, Manager, Tunnel, Road & Customer Safety &

Warren Gourley, Manager, Operational Excellence, Delivery & Operations
Transurban

2.40 Evaluating the 2007 Burnley tunnel incident from the court's expert perspective

- What is a coronial investigation and the role of the court expert?
- Detailing how the task was approached and what was found
- Evaluating the expert report and the implications of those findings for the court

Professor Arnold Dix, Court Appointed Tunnel Safety Expert, Scientist & Lawyer
Tunnel Risk Specialist

3.20 Afternoon tea & networking

Evaluating fire safety technologies

3.50 Taking into account human factors in tunnel safety

- Factoring in human behaviour in extreme situations to optimise safety measures
- Analysing human behaviour in emergency situations and how this helps to improve and develop safety systems
- Examples of tunnel scenarios to examine human behaviour
- How social media is changing disaster management

Professor Beverley Raphael, Professor of Population Mental Health & Disasters &
Penny Burns, Senior Lecturer General Practice

University of Western Sydney

4.30 Analysing whether sprinkler or deluge suppression systems are as effective as they could be during tunnel fires

- Providing an insight into the debate behind the different types of systems to use; could we move to mist or foam instead of a deluge system?
- Ensuring effective interaction of all subsystems to guarantee the co-functioning of fire detection, ventilation and suppression systems
- Looking at whether complimenting suppression systems with lining in tunnels provides superior safety

PANEL DISCUSSION

Peter Johnson

ARUP

Paul Williams

Norman Disney Young

Craig Hiscock

Parsons Brinckerhoff

5.10 Closing remarks from the Chair & close of conference

Workshop

Tuesday 4th June 2013

SAVE \$200
when you register by
10th May 2013

Engineering due diligence under the Work Health & Safety Act

Tuesday 4th June 2013, 5.30pm – 8.30pm

The model Work Health and Safety Act has commenced in all Australian jurisdictions except Western Australia and Victoria. The legislation requires a positive demonstration of due diligence by responsible officers of all PCBU's (person conducting a business or undertaking). This includes owners, designers and operators of tunnels. Penalties for responsible officers are criminal in nature and can result in up to five years in jail.

This workshop will explore the issues and difficulties these new legal requirements have made, especially for SIL Allocation (IEC 61508) and fire engineering design processes. You will explore how these were successfully used on many major infrastructure projects in Australia and New Zealand including tunnels in Victoria, New South Wales and Queensland.

Why attend this workshop?

- Fully understand your due diligence responsibilities under the Work Health and Safety Act
- Understand the methods to ensure that the laws of nature and the laws of man arguably align
- See how the use of target levels of risk and safety are simply not defensible in court post event and why

What you will take away by attending

- Understand how to design tunnels to positively demonstrate due diligence under the provisions of the model Work Health and Safety Act
- Gain a better understanding of how to ensure this legal requirement is aligned with the fire engineering design process

About your workshop leader

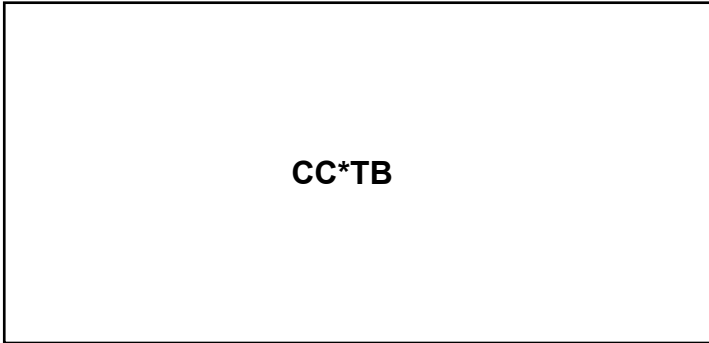


Richard Robinson
BE BA FIEAust MSFPE
Director
R2A Due Diligence Engineers

Richard Robinson is Director of R2A Due Diligence Engineers. He is a Fellow of Engineers Australia and a Member of the Society of Fire Protection Engineers of the USA. Recent undertakings include the development of alternate airspace collision risk models for the Civil Aviation Authority, New Zealand and the Office of Airspace Regulation Australia; strategic and safety risk reviews for the Marina Coastal Expressway, Singapore and Tugan Bypass on the Gold Coast; due diligence reviews for rockfalls in cuttings for Railcorp NSW; and a large number of SIL (Safety Integrity Level) allocation studies.

Register 3 delegates
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Registration Page



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Email: registration@criterionconferences.com	

Team Discounts

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Please note that the standard price will be charged for team discounted registrations, early bird prices are not available for registrations utilising team discounts. Delegates must be registered at the same time from the same organisation in order to receive the team discount. For larger group bookings call us on 1300 316 882 to find out how you may qualify for greater discounts.

Venue

Royal on the Park
152 Alice Street
Brisbane QLD 4001

Accommodation

Contact Royal on the Park on (07) 3221 3411 and quote **1103991** to receive your discounted accommodation rate!

Delegate Details

Please complete: (Please photocopy for additional delegates)

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Tunnel Safety & Fire Protection

4th & 5th June 2013

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