BRIDGES and TUNNELS

28th - 29th June 2011  |  Parkroyal Darling Harbour

Designing, constructing and maintaining the nation’s critical transport structures

Tailor your participation! Choose one or two days of the conference agenda

Program highlights

BRIDGES
- Modern bridge design and delivery
- Best practice case studies of bridge launching
- CASE STUDY: Airport Roundabout Upgrade in Brisbane
- CASE STUDY: Falcon Street Pedestrian and Cyclist Bridge
- Asset management techniques for durability and sustainability

TUNNELS
- Geotechnical investigations
- Excavation
- CASE STUDY: Top Ryde shopping centre redevelopment in Sydney
- CASE STUDY: Adelaide Desalination Plant
- CASE STUDY: Airport Link Tunnel
- Industry’s take on fire tunnel safety

Day One: Tuesday 28th June 2011

**BRIDGES**

8:30 Registration and welcome tea

9:00 Speed networking
Get to know your peers right from the start in this relaxed and informal speed networking session. Bring your business cards!

9:20 Opening remarks from the Chair

**PLANNING & DESIGN**

9:30 Modern bridge design and delivery
- Outline of design techniques in the new Iron Cove Bridge
- Overview of projects including the Go Between Bridge and the North Manama Causeway
- Design for ease of maintenance
- The increasing role of technology in bridge planning and design

Syd Gamble, Director Civil Structures, Hyder Consulting
Peter Hyndman, Bridge Engineer and Alliance Design Manager, Bridge to Bay Alliance, Hyder Consulting

10:20 Morning tea

**LOGISTICS**

10:50 Complete bridge move operations: Challenges, opportunities and major advantages
- Best practice case studies
- Ensuring minimum interferences on site
- Safety considerations
- Strategies for time and cost efficiency
- Considerations to make as from early start till final bridge positioning

Gert Hendrickx, Manager-Eastern Australia, Sarens Australia

11:30 Best practice case studies of bridge launching: Specialised lifting solutions to optimize bridge construction
- Bridge construction jobs worldwide, including:
  - Installation of a bridge over the Pisuerga River, Spain
  - Launching of a concrete bridge over Colastiné River, Argentina
  - Final launching bridge over Genil River, Spain

Senior representative, ALE

12:10 Lunch

**CONSTRUCTION**

1:10 Successful design techniques for bridge construction
- Designing for construction
- Combining temporary and permanent works design
- Examples of successful integration

Colin Edmonds, Principal, Cardno

1:50 Airport Roundabout Upgrade Project in Brisbane
- A design solution to one of SE Queensland’s most congested intersections
- The erection of a twin-box segmental balanced cantilever bridge while minimising disruption
- Early delivery of the bridge structures

Senior representative, Parsons Brinkerhoff-Arup Joint Venture (PBAJV)

**PEDESTRIAN BRIDGE FOCUS SESSION**

2:30 Falcon Street Pedestrian and Cyclist Bridge
- Successful integration of community, client, consultant and contractor
- The design process and use of steel

Ken O’Neill, Senior Bridge Engineer, Aurecon
Tom Sheasby, NSW Bridge Manager, Aurecon

3:20 Afternoon tea

**ASSET MANAGEMENT**

3:50 Asset management techniques for sustainable structures
- Risk assessment as a design tool
- Design based on assessed deterioration mechanisms
- Consideration of long-term maintenance at design
- Assessing constructability, durability and strength
- Proposals for remedial works
- Evaluation of costing for concrete and general structure repairs

Kingsley Opoku, Principal Engineer, SMEC

4:30 What to look for in protective coatings
- Asset management for highly corrosive environments and dynamic stresses

Ted Riding, Technical Manager, Jotun Paints

5:10 Closing remarks from the Chair

5:15 Close of day one

**MARK YOUR DIARY! UPCOMING EVENTS**

Breakbulk and Project Cargo 2011
16th-17th May 2011, Novotel Langley Perth

Environmental Management in Transport Summit 2011
17th-18th May 2011, Sydney Harbour Marriott

QLD Transport Infrastructure Summit
26th-27th July 2011, Brisbane Marriott Hotel

WA Transport Infrastructure Summit
3rd-4th August 2011, Novotel Langley Perth
Day Two: Wednesday 29th June 2011

TUNNELS

8:30 Welcome tea and networking
9:20 Opening remarks from the Chair

INSPECTION, MAINTENANCE, REPAIR: BRIDGES AND TUNNELS

9:30 Strategies for effective inspection, maintenance and repair
- Key differences in environmental exposure
- Durability issues, tunnels vs bridges
- Ensuring extended design life, materials selection
- Active vs passive protection
- Methods of visual inspection, testing, assessment and repair
Marton Marosszeky, Director, BCRC and Executive Consultant, Evans & Peck

10:10 Morning tea

GEOTECHNICAL INVESTIGATION

10:40 Planning and conducting geotechnical investigations for tunnels
- Role of geotechnology in planning
- Probable soil description, effectiveness of exploration and factors to be considered in the report documentation
- Determining the scope of a geotechnical investigation depending on the complexity of the geology and the project
Dr David Oliveira, Associate Geotechnical Engineer, Coffey Geotechnics

11:20 Tunnel design on the Top Ryde Shopping Centre Redevelopment in Sydney
- Dealing with challenging geological and construction contexts, including the presence of a dyke, faults and shearing zones
- Planning around key risks, interpretation of geological information and site investigation to ensure minimal rework of, or deviation from, the design
- Extensive analysis of predicted settlements
- Stringent construction monitoring
- Strategies for maximising construction efficiency, risk mitigation and value for money
Jim Yang, Regional Technical Director-Geotechnics and Tunnelling, Hyder Consulting

CASE STUDY

Hyder won the New Civil Engineer Tunnelling Award presented in December 2010 in London for the Top Ryde Shopping Centre. This was against an international field and the Hyder award was the only one received in 2010 by an Australian organisation.

12:00 Lunch

DESIGN

1:00 Adelaide Desalination Plant-Intake & outfall general arrangements, segmental lining tunnels, lateral breakouts & cross connection tunnels*
- Intake & outfall general arrangements
- Detailed design and construction methodologies developed for
  - Segmental tunnel lining
  - Lateral breakouts
  - Cross connection tunnels
- Construction implementation: lessons learnt
Sabrina Kost, Tunnel Engineer, SMEC
*Pending client’s approval

1:40 Airport Link Tunnel
- Construction methods
- Analysis of excavation using Australia’s largest tunnel boring machines
- Developing economical and sustainable options in tunnel engineering
Charles MacDonald, General Manager Construction, BrisConnections

CASE STUDY

Afternoon tea

EXCAVATION

2:50 Tunnel excavation analysis
- Convergence
- Below or above mean sea level?
- Soil or rock?
Dr Murat Karakus, Lecturer, School of Civil, Environmental and Mining Engineering, University of Adelaide, South Australia

3:30 Selection of ground support and tunnel excavation methodology for the Northern Sewerage Project, Melbourne
- 12 km of 3 m and 4 m diameter tunnel excavation
- Excavation methods include EPB TBM, hard rock TBM, roadheader, drill and blast
- Tunnel support includes rock bolts, shotcrete, lattice girders, precast concrete segmental linings and GRP linings
Ben Clarke, Design Manager - Northern Sewerage Project, John Holland Tunnelling

SAFETY/HAZARDS

4:10 What Standards Australia’s Tunnel Fire Safety means for industry
- International developments in tunnel fire safety
- Air quality design
John Munro, Section Executive - Tunnels, Parsons Brinkerhoff

4:50 Closing remarks from the Chair
5:00 Close of conference

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This event is the only one of its kind to focus on both Bridges and Tunnels - All under the one roof

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Unique Program Highlights
- Modern bridge design and delivery
- Best practice case studies of bridge launching
- Asset management techniques for durability and sustainability

- Geotechnical investigations
- Excavation
- Case study: Top Ryde shopping centre redevelopment in Sydney
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