

# RTSA SA CHAPTER NEWSLETTER



April 2017 EDITION

## WORDS FROM THE CHAIR – PHILLIP CAMPBELL

2017 is entering our second quarter, and RTSA activity has ramped up. Our lecture in early April will be given by Brad Moorhouse, Project Director for the Advanced Train Management System (ATMS) on 4<sup>th</sup> April. CORE 2018 planning is well under way for 30 April – 02 May 2018, with an active organizing committee headed up by Katharina Gerstmann. The 2018 theme is Rail – Smart, Automated, Sustainable, and this should generate very useful discussion and papers. Sponsors are starting to come on board at a range of levels. Authors should be considering topics for submission of abstracts, and the website should be consulted for further details. RTSA has again been pleased to endorse the Dr Stephen Marich Annual Lecture in Railway Engineering, which was organized by the Institute of Railway Technology (IRT) from Monash University, and held in Melbourne in early March. IRT are to be commended on this annual initiative which honours the 40 year eminent career of Dr Marich. Membership of the RTSA is a strong proposition for those involved in railway engineering, and we are seeking to grow our membership at all levels during 2017. The renewed strength of railway engineering activity in South Australia provides an opportunity to attract new members, as well as a great source of technical presentations and site visits for our existing members. Please do not hesitate to contact your SA group if you have an idea for local activity.



## RTSA & PWI JOINT MEETING/ TECHNICAL PRESENTATION

ATMS – THE JOURNEY FROM  
PROTOTYPE TO  
OPERATIONAL REALITY”

**VENUE:** Fedoras Hilton Hotel,  
264 South Road, Hilton SA  
(Corner of Sir Donald  
Bradman Drive)

**DATE:**  
Tuesday 4<sup>th</sup> April 2017

**TIME:**  
5.45pm for 6.00pm start

LIGHT REFRESHMENTS WILL  
BE PROVIDED AFTER THE  
PRESENTATION

RTSA Member, Society Member  
& Student Member - Free

Non-Member Rate: \$30.00

**RSVP:**  
Barry.aw@sa.gov.au

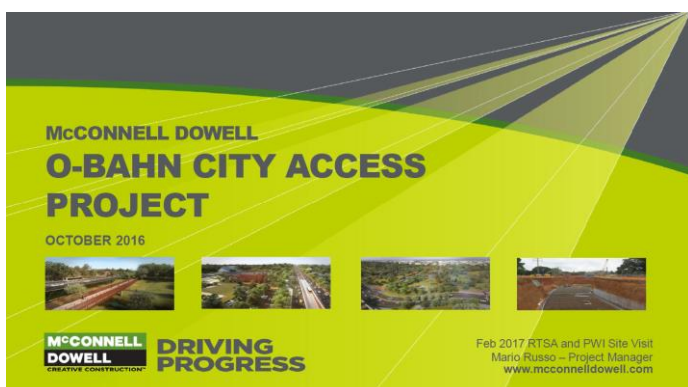
Maximum CPD Hours: 1 hour(s)

[www.rtsa.com.au](http://www.rtsa.com.au)

## O'Bahn Extension

February 2017 Site Tour  
Mario Russo, McConnell Dowell

The North East Adelaide Public Transport Review in the 1970s examined various options for a public transport connection from the north east suburbs into the Adelaide CBD, examining heavy rail, light rail and busways; eventually this led to the construction of the O-Bahn system which opened in full in 1989. The busway currently provides a dedicated corridor for buses connecting to what is now the Inner City Ring Route at Gilberton. The State Government is now investing \$160m into the O-Bahn City Access Project to provide centrally aligned priority bus lanes along Hackney Road and a dedicated bus tunnel from adjacent to the National Wine Centre to near Grenfell Street, providing quicker and more reliable access for O-Bahn buses into the city, and in essence completing the earlier vision of a dedicated public transport route for the North East into the city. The project has been awarded as a design and construct contract to McConnell Dowell Australia Pty Ltd (MCD), with design being undertaken by Kellogg Brown & Root Pty Ltd (KBR), Wallbridge & Gilbert Pty Ltd (W&G) and Golder Associates Pty Ltd. SAGE Automation is providing specialist mechanical, electrical and intelligent transport systems expertise to the project.



### WHAT IS THE O-BAHN?

McCONNELL  
DOWELL  
CREATIVE CONSTRUCTION

- The O-Bahn conceived by Daimler-Benz to enable buses to avoid congestion by sharing tram tunnels in Germany
- 1986 Adelaide opened world's longest O-Bahn system (12 km of guided track)
- Over 1,000 O-Bahn bus services per weekday (every 60 sec in peak)



### WHAT IS THE O-BAHN?

McCONNELL  
DOWELL  
CREATIVE CONSTRUCTION



- The O-Bahn services Adelaide's North Eastern suburbs
- Interchanges
- Route through Linear Park
- End of the O-Bahn to the city centre

### PROJECT OBJECTIVE

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DOWELL  
CREATIVE CONSTRUCTION

To improve travel times and reliability, and reduce on-road delays for users of the O-Bahn service between the end of the busway at Gilberton and Grenfell Street over the next 30 years.



### PROJECT TEAM

McCONNELL  
DOWELL  
CREATIVE CONSTRUCTION



Government of South Australia  
The Department of Planning, Transport and Infrastructure



McConnell Dowell Constructors



Walbridge & Gilbert Consulting Engineers



KBR



Oxygen



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## RAILWAY TECHNICAL SOCIETY of AUSTRALASIA

The RTSA is a joint technical society of Engineers Australia and the Institution of Professional Engineers New Zealand





## PROJECT SCOPE

**MCCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



## FAST FACTS

**MCCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION

Length of tunnel	670 m
Sheetpiles	1,050 no. (2,000 tonnes)
Reinforcement	2,000 tonnes
Concrete	11,000 m <sup>3</sup>
Busway kerb tolerance	1.5mm in 3m
Precast roof planks	423 no.
Jet fans	6 no.

## PROJECT SCOPE

**MCCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



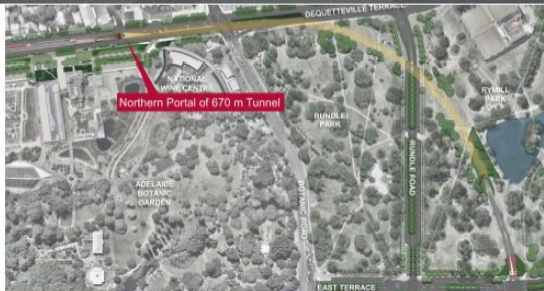
## TUNNEL DESIGN AND CONSTRUCTION

**MCCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



## PROJECT SCOPE

**MCCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



## TUNNEL DESIGN AND CONSTRUCTION

**MCCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION

Tunnel beneath roads  
Top-down construction

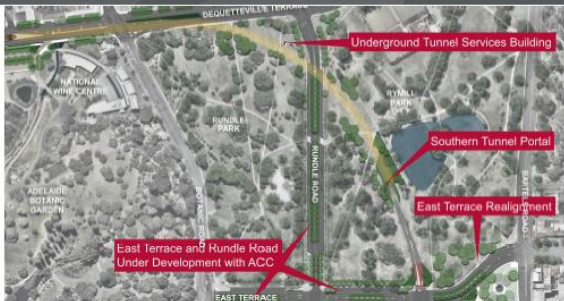
- Selected design
- Sheetpile walls
  - In-situ concrete base slab
  - Precast concrete roof

- Alternatives considered
- TBM
  - Jacked box
  - CFA Piles



## PROJECT SCOPE

**MCCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



## SHEETPILING

**MCCONNELL  
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## SHEETPILING

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CREATIVE CONSTRUCTION



## FIRST CREEK

**McCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



## TUNNEL DESIGN AND CONSTRUCTION

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DOWELL**  
CREATIVE CONSTRUCTION

Tunnel beneath parklands  
Cut and cover construction

Selected design

- Open excavation
- In-situ concrete base slab
- In-situ concrete walls
- Precast concrete roof

Alternatives considered

- Precast walls
- Precast box



## FIRST CREEK

**McCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



## CONSTRAINTS ON GEOMETRY

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DOWELL**  
CREATIVE CONSTRUCTION

- First Creek
- 66kV underground power alignment
- 66kV over head power alignment
- Heritage buildings
- Hackney Botanic Intersection
- Minimising tree removal and impact on the parklands
- Rymill Park Lake
- Turning radius of O-Bahn buses at 60 kph design speed



## 66kV UNDERGROUND ELECTRICAL

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DOWELL**  
CREATIVE CONSTRUCTION



## FIRST CREEK

**McCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION



## 66kV UNDERGROUND ELECTRICAL

**McCONNELL  
DOWELL**  
CREATIVE CONSTRUCTION

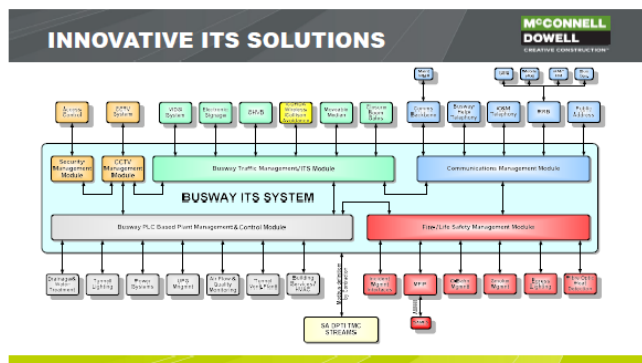


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## COMMUNITY AND STAKEHOLDERS

## Community Engagement

- Construction updates
- Fact sheets
- Media releases
- Face to face meetings/door knocking
- SMS / Email updates
- 24/7 Information line
- Social media posts
- Real time traffic information via Traffic SA
- Free AddInsight App



## WORKING AROUND EVENTS

No major events have been impacted by the Project in 2016

Upcoming events adjacent the works include:

- Fringe Events (GOUD, Fringe Club & Gluttony) 2017
- Adelaide International 3 Day Event (2016 and 2017)
- Clipsal 500 (2017)
- Tour Down Under
- WOMAD



## PROJECT SCHEDULE

Contract Award  
December 2015

**Commenced Construction**  
**March 2016**

**Complete Tunnel Structure**  
**March 2017**

**Complete Tunnel Services**  
**October 2017**

**Complete Commissioning  
December 2017**



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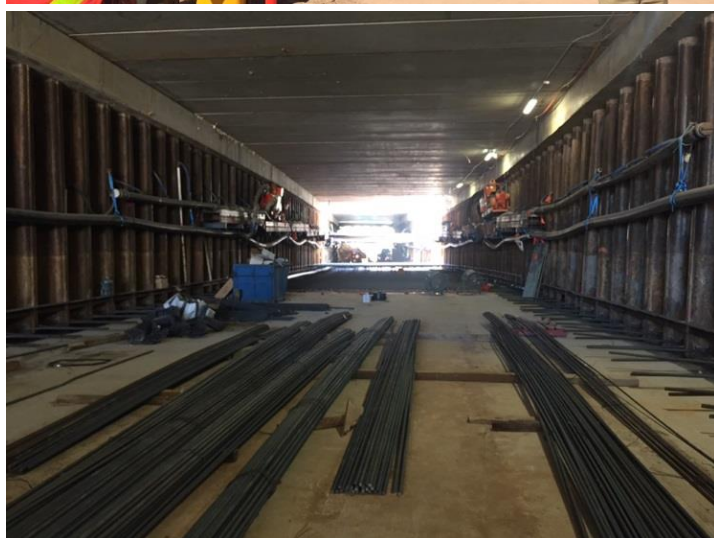
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## SITE PHOTOS



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**2017 RTSA MEETINGS AND EVENTS**

DATE AND TIME	ACTIVITY	LOCATION
Thursday 16 <sup>th</sup> FEBRUARY 2017 3:30 PM	O'Bahn City Access Project Site Visit	McConnell Dowell Site Office Tram Barn, Hackney Road
Tuesday 4 <sup>th</sup> APRIL 2017 5.30 PM	ARTC – Automatic Train Management System (ATMS)	Hilton Hotel, 264 South Road, Hilton SA (Corner of Sir Donald Bradman Drive)
Thursday 4 <sup>th</sup> MAY 2017 5.45PM	Real time optimization of arrival times within timing windows	Engineers Australia, Level 11, 108, King William Street, Adelaide 5000
Thursday 1 <sup>st</sup> JUNE 2017	Possible site tour of flashbutt welding and Onesteel	Port Augusta and Whyalla
Thursday 6 <sup>th</sup> JULY 2017 5.30PM	Adelaide to Tarcoola Re Railing Project	Engineers Australia, Level 11, 108, King William Street, Adelaide 5000
Thursday 3 <sup>rd</sup> AUGUST 2017 5.45PM	PWI Awards Dinner	Hilton Hotel, 264 South Road, Hilton SA (Corner of Sir Donald Bradman Drive)
Thursday 7 <sup>th</sup> SEPTEMBER 2017 5:45PM	Combined IRSE/RTSA/PWI Meeting	Hilton Hotel, 264 South Road, Hilton SA (Corner of Sir Donald Bradman Drive)
Thursday 5 <sup>th</sup> OCTOBER 2017 5:45PM	100 <sup>th</sup> year Anniversary of Trans Australia Railway	Hilton Hotel, 264 South Road, Hilton SA (Corner of Sir Donald Bradman Drive)
21-23 November 2017	AUSRail PLUS	Brisbane
Thursday 30 <sup>th</sup> NOVEMBER 2017 6:00PM	RTSA SA Division AGM	Hyde Park Tavern, Unley
Thursday 7 <sup>th</sup> DECEMBER 2017 6:00PM	PWI SA Division AGM	TBA

2017 RTSA Meetings will be nominally on the **FIRST THURSDAY** of each month from February to December. Any changes will be advised in the Newsletter, or if a last minute affair then by special notice. Presentations in **black are confirmed** those in **red are provisional** at this time of publication. Any reader with suggestions for a presentation that is topical and relates to the overall objectives of RTSA should contact **Barry Aw** (see last page for contact details).



## RTSA CONTACT AND SOCIETY DETAILS

The SA Chapter Committee for 2017 comprises:

OFFICE HOLDERS	POSITION	EMAIL
Phillip Campbell	Chair	PCampbell@artc.com.au
Gary Sharpe	Secretary	gary.sharpe50@gmail.com
Barry Aw	Treasurer	barry.aw@sa.gov.au
Kuldeep Zala	Committee member	kuldeep.zala@sa.gov.au
David Ogucha	Committee member	DOgucha@artc.com.au
Mark Jordan	Committee member	Mark.jordan@kbr.com
Vacant	Committee member	TBA

For matters directly related to the running of RTSA please contact the appropriate office holder as listed above. For general matters or membership enquiries you should contact:

RTSA SA Chapter, Engineers Australia, Level 11, 108, King William Street, Adelaide, SA, 5000

The easiest way to submit contributions for the Newsletter is by e-mail to the Editor [sa@rtsa.com.au](mailto:sa@rtsa.com.au) or alternatively to [barry.aw@sa.gov.au](mailto:barry.aw@sa.gov.au).

Engineers Australia members are reminded that attendance at RTSA technical meetings and events contributes towards CPD requirements. Each RTSA technical meeting generally has a value of 1 CPD point.

**This Newsletter is published by the SA Chapter of RTSA. Opinions do not necessarily reflect those of the Institution, Society, Chapter or Editor.**

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