

*February 2010*

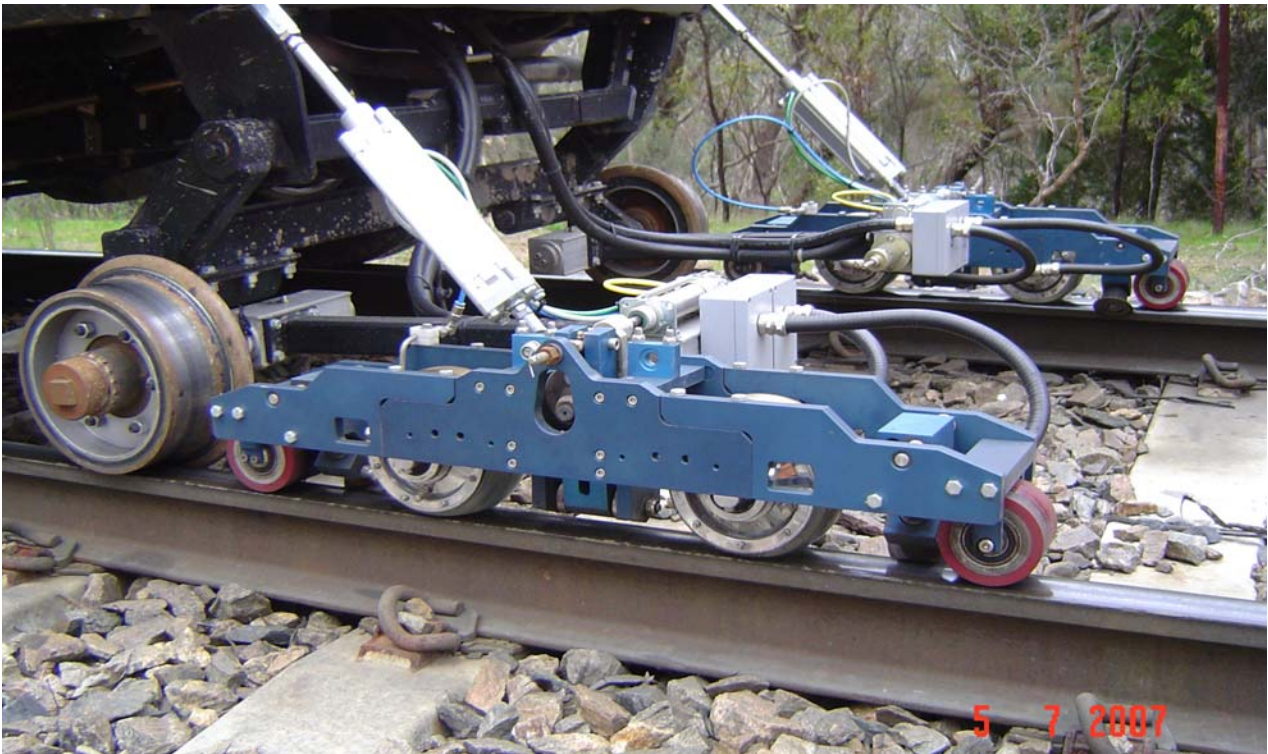
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RTSA CHAPTER MEETING:

Thursday 4<sup>th</sup> March

## *Developing a Rail-focussed NDT course for ARTC Inspectors*

Presented by Roy Nancarrow



**NEW VENUE:** Level 11, 108 King William St (between Grenfell and Pirie Sts)

Venue map attached at the back of this Newsletter.

Light refreshments from 5.30pm, meeting commences at 6.10pm.

## Contents

News .....	3
Coming Events.....	3
Chairman's Chatter .....	4
STORE 2009, Asia Metro Systems – Max Shuard and Stephen Townsend.....	5

## Chapter Meetings

### Thursday 8<sup>th</sup> April 2010

To be advised.

### Thursday 6<sup>th</sup> May 2010

Adelaide Train Overpass, McConnell Dowell.

### Thursday 3<sup>rd</sup> June 2010

Field Visit to new Dry Creek Maintenance Facility

### Thursday 1<sup>st</sup> July 2010

Cairns Tilt Train Accident, Larry Matters, ATSB

### Thursday 5<sup>th</sup> August 2010

Wheel Profiles, Carolyne Southern and John Furness, Pacific National/ARTC.

### Publisher

This newsletter is a publication of the South Australian Chapter of the Railway Technical Society of Australasia, Engineering House, 11 Bagot Street, North Adelaide SA 5006. Opinions expressed within are not necessarily those of the Chapter, Society or Editor.

### Contributions

Contributions, including news, opinions, or letters to the editor, are always welcome. Send material by e-mail to [sa-editor@rtsa.com.au](mailto:sa-editor@rtsa.com.au)

### Continuing Professional Development

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

### RTSA Website

The RTSA website [www.rtsa.com.au](http://www.rtsa.com.au) has details of RTSA activities, including future meetings and reports from past meetings, for all Chapters.

### Membership

Information for potential new members and an application form may be found at [www.rtsa.com.au](http://www.rtsa.com.au).

### Chapter Contacts

Chairman	Daniel Martucci	8204 8213
Secretary	Alice Weatherford	8217 4224
Treasurer	Michael Forbes	8217 4127
Newsletter Despatch	Steve Torok	8264 2552
Newsletter Editor	Lucie Mitchell	7129 8284

### Newsletter Dispatch

Despatch of the newsletter is undertaken by Steve Torok. Contact Steve on [storok@tge.com.au](mailto:storok@tge.com.au) if you have any problems receiving newsletter electronically or in hard copy, or change your e-mail address.

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## News

### SA Chapter Meeting February 4th, 2010

The last Chapter meeting provided attendees with an entertaining and information-packed presentation on the recent, highly successful STORE 2009 visit to Asia's metro systems. Some selected slides, focussing upon some lessons learnt from this visit, are attached to this newsletter.

### RTSA Executive Committee Update

At the 16 November 2009 Meeting, the Executive Committee endorsed the RTSA Strategic Plan which

will form the framework for the activities of the RTSA up to 2013. A copy of this plan can be found on the website: [www.rtsa.com.au](http://www.rtsa.com.au)

Furthermore, the opportunity has been taken to form a Professional Development Sub-Committee (in place of the Education Sub-Committee) to be tailored towards the needs of our younger rail professionals. Congratulations to the inaugural Chair of this new Committee, Ravi Ravitharan and much thanks to Chris Venn-Brown for his valued efforts as Chair of the Education Sub-Committee.

## Coming Events

### CORE 2010 – Wellington, NZ

The RTSA's biennial Conference on Railway Engineering (CORE) is to be held this year in

Wellington, NZ with the theme 'Rail – Rejuvenation & Renaissance'. Register your interest at <http://www.core2010.org.nz/>

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## Chairman's Chatter

RTSA SA Chapter members, welcome to your first newsletter for 2010. It promises to be an interesting year of change and/or new beginnings in many ways.

### Meeting venue

Our first meeting for the year was also our last in the old Bagot Street venue; the new Engineers Australia SA Divisional office on the 11<sup>th</sup> Floor of 108 King William Street will be our new meeting location. This change will disadvantage some and advantage others, and the transition might be a little inconvenient, but I feel that moving forward it will be to the benefit of EA - and, in turn, the RTSA SA Chapter - to have a venue with the standing and sense of institution afforded by a CBD-located site.

Financially it also continues to be the only venue that is made available to us free of charge every month.

The building is on the east side of the road, literally facing the Pirie Street tramstop; the entrance, on the footpath of King William Street, is signed. Members are advised to take the lift to the 11<sup>th</sup> and refer to the LCD monitor in the foyer for further guidance.

Advice on getting to the building itself has been received from the local EA staff, which details options for on- and off- street car parking in the vicinity (refer map included in this newsletter, which include some free-of-charge locations after 6pm). Utilising the free Terrace-to-Terrace tram is another option for members, with its convenient 7.5min frequency before 6pm. Further still may be a combination of using the free and untimed kerbside parks on Peacock Road then catching a free service from the South Terrace tramstop. On the face of it some of these options seem to be more convenient on the way to meetings - rather than from them - so the Committee will be monitoring this situation.

### SA Rail Transport in 2010

With the convergence of the 20th March State Election in with its Federal counterpart some time later this year (and November elections for all Councils thrown in for good measure), 2010 promises to also be politically interesting. Transport and infrastructure issues are already high in the

media profile, such as last week's Southern Expressway duplication announcement by both major State parties.

Some Noarlunga Line concrete re-sleepering and the tramline extension to the Entertainment Centre will be the first infrastructure elements to be completed of those that were announced in the 2008 State Budget; project planning for others is well underway for whole-of-system concrete re-sleepering and electrification, and rollingstock procurement for the new 4000-Class EMUs. Project planning for the Seaford Extension infrastructure, funded in the 2009 Federal Budget, is being integrated into proceedings.

Another relevant influence for the suburban network is the recently-published 30-Year Plan for Greater Adelaide, which sets out residential and commercial urban planning proposals in a way that compliments, and is complimented by, the quieter and higher level of service planned for the future suburban railway. The planned Transit Oriented Developments announced at the former Clipsal site, and more significantly its counterparts further down the Outer Harbor Line, are early examples of the challenges of retrofitting this more sustainable form of growth in an established urban area.

On the freight side there is also some attention following the October 2009 publication of the Discussion Paper for the Federal Government's Adelaide Rail Freight Movement Study, which explores the viability of options for managing the DIRN's future as it tackles the Mount Lofty Ranges. Similarly after the May 2009 publication of National Priorities for the Federal Infrastructure Australia body, the profile of potential rail-rail grade-separations at Goodwood and Torrens Junctions has been elevated. As the economy seems to recover, we are also seeing the resurgence of some mining traffic - with the Centrex Wilgerup iron ore mine gaining approval in October 2009 to export 1.5Mtpa through new bulk-handling equipment to be built in Port Lincoln; the utilisation of Eyre Peninsula's existing narrow-gauge network will improve accordingly.

Looking forward to seeing you at the March meeting,

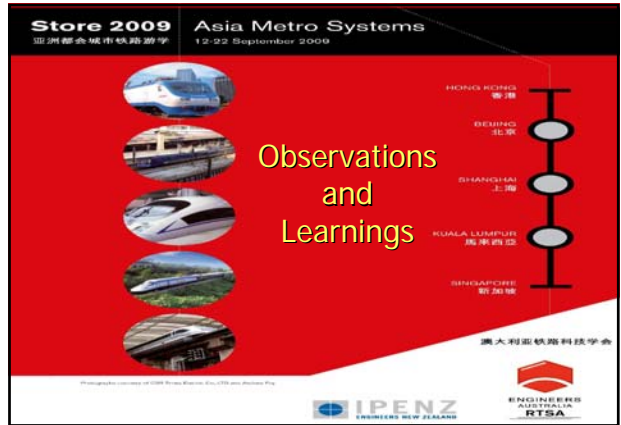
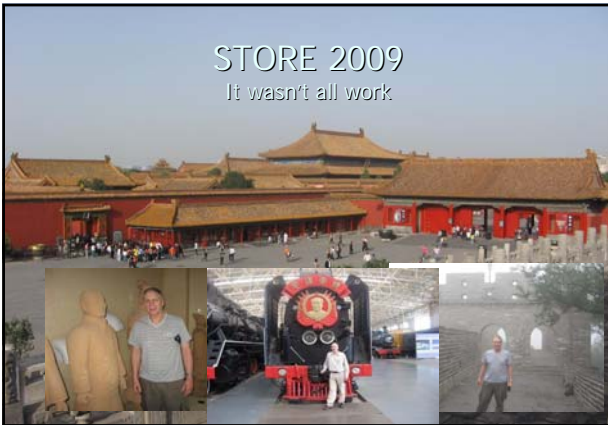
**Daniel Martucci – Chairman, RTSA SA Chapter**

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## **STORE 2009, Asia Metro Systems – Max Shuard and Stephen Townsend**

The following slides have been selected from those presented at the February 2010 Chapter Meeting. These focus upon some key learnings, trends and particular points of interest from the highly successful STORE visit.

A full copy of the presentation is available upon request



### STORE 2009 – Learnings Design to Meet Transport Needs

- Journey Time – 30 minutes
  - High speed airport to city transfers – Limited or non-stop journeys – up to 130 km/hr – 50 to 60 km route length



### STORE 2009 – Learnings Design to Meet Transport Needs

- Journey Time – 30 minutes
  - Very high speed intercity – limited or non-stop journey – up to 335 km/hr – 108km route length



### STORE 2009 – Learnings Design to Meet Transport Needs

- Design capacity to transport passenger demand
  - Train size
    - Internal layout
    - Train set size
    - Number doors



### STORE 2009 – Learnings Design to Meet Transport Needs

- Design capacity to transport passenger demand
  - Service frequency



### STORE 2009 – Learnings Design to Meet Transport Needs

- Design capacity to transport passenger demand
  - Station capacity – passenger flow and infrastructure capability



### STORE 2009 – Learnings Design to Meet Transport Needs

- Design the Service for the Need
  - Airport passengers have a different requirement to that of general metro users.
  - Hong Kong provides separate tracks, trains, station layout and service patterns along Lantau Island route for Airport Express and local metro line.



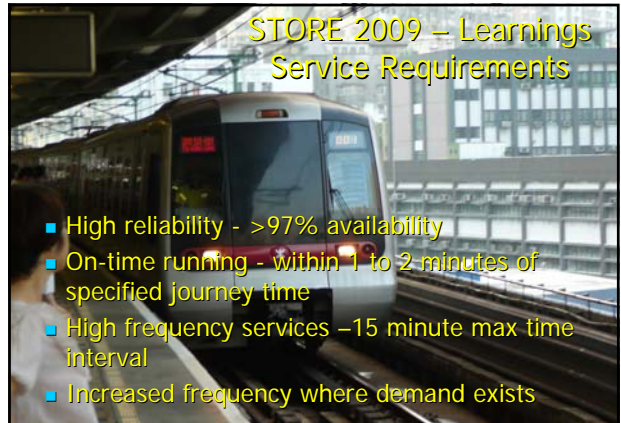
## STORE 2009 – Learnings Design to Meet Transport Needs

- Line Interchange Convenience
  - Cross platform transfers between lines
  - Two station transfers between lines – One for each direction of travel



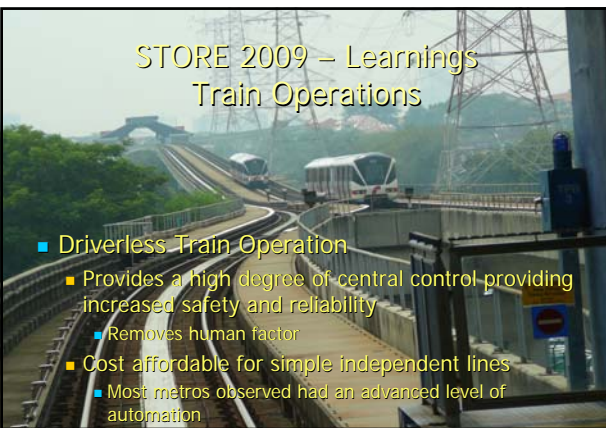
## STORE 2009 – Learnings Service Requirements

- High reliability - >97% availability
- On-time running - within 1 to 2 minutes of specified journey time
- High frequency services –15 minute max time interval
- Increased frequency where demand exists



## STORE 2009 – Learnings Train Operations

- Driverless Train Operation
  - Provides a high degree of central control-providing increased safety and reliability
    - Removes human factor
  - Cost affordable for simple independent lines
    - Most metros observed had an advanced level of automation



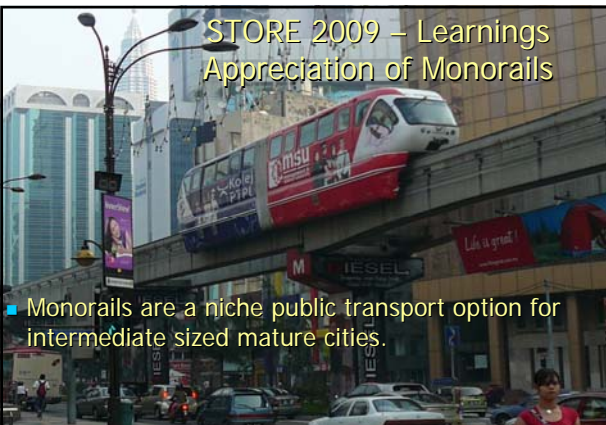
## STORE 2009 – Learnings Electronic Fare Collection

- Proven systems in operation
- Reduced costs and fare evasion.
- Value added electronic smart cards
- Smart cards used for road and parking charges as well as small value cashless transactions
- Cards issued and managed by third parties



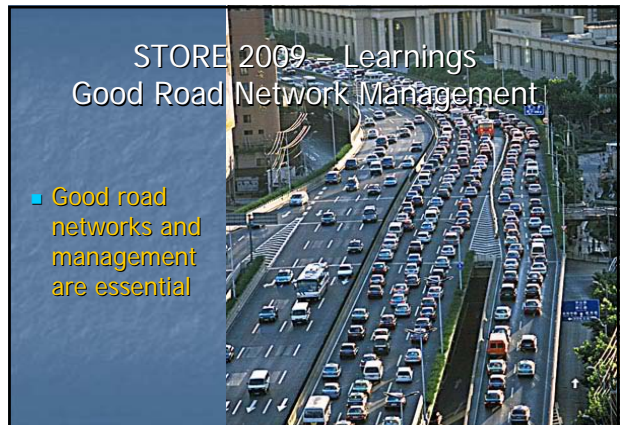
## STORE 2009 – Learnings Appreciation of Monorails

- Monorails are a niche public transport option for intermediate sized mature cities.



## STORE 2009 – Learnings Good Road Network Management

- Good road networks and management are essential



### STORE 2009 – Learnings Good Road Network Management



- Good road networks and management essential
  - Road management necessary to limit congestion
  - A suitable public transport system provides the alternative transport mode that allows the road system to function.

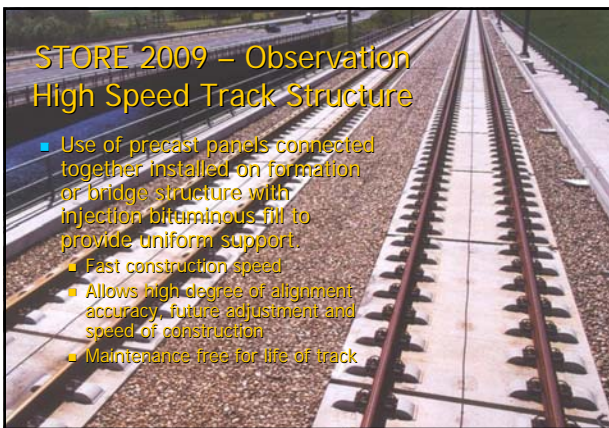
### STORE 2009 – Observations High Speed Rail



- Within 10 years, 50% of world high speed rail will be in China
- Beijing to Shanghai
  - Approx. 1300km
  - 300 to 350km/hr
  - Approx. 5 hour journey time
  - Construction time – 5 years from 2008
- Network being built to cover most of China

TransportPolitic

### STORE 2009 – Observation High Speed Track Structure



- Use of precast panels connected together installed on formation or bridge structure with injection bituminous fill to provide uniform support.
  - Fast construction speed
  - Allows high degree of alignment accuracy, future adjustment and speed of construction
  - Maintenance free for life of track

### STORE 2009 – Observation Research and Testing



- China has extensive research and testing capability
- Highly co-ordinated
- May be difficult for Australia to compete

### STORE 2009 – Observations Basis for Government Support of Railway Industry



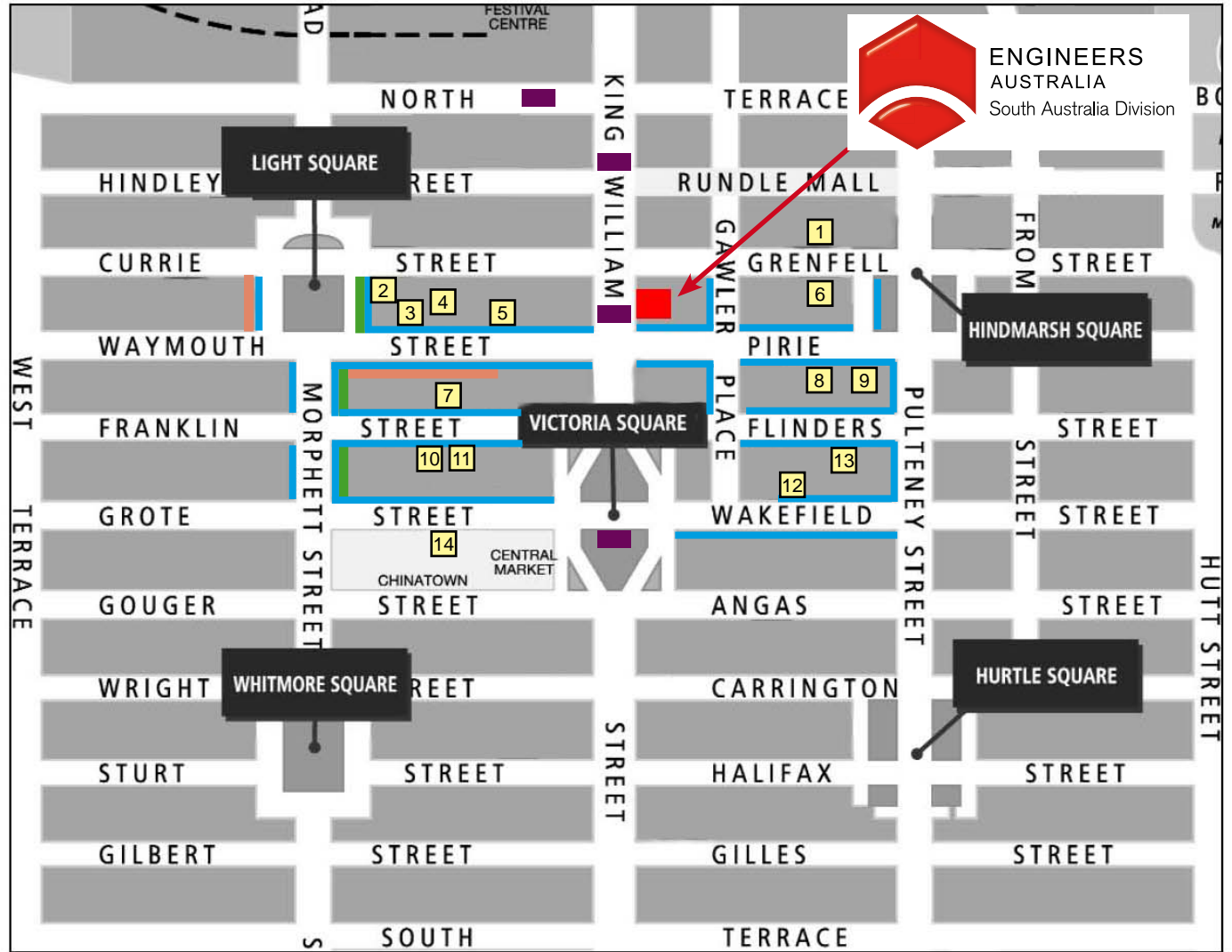
- Single organisations supported by government for specific functions, e.g.
  - CARS – National rail component testing
  - Zhuzhou Times New Material Technology Co. Ltd. (CSR Times) for rubber component testing.
- All specific function testing carried out by accredited organisation.
- Organisation must meet quality and efficiency targets to retain government support.
  - Allows base funding of organisation to establish and maintain facilities.
- Additional income may be gained by providing services to private organisations at competitive prices

### STORE 2009 – Observations Environment – Global Warming



- Pace of economic development in Asia is rapid and extent and growth of energy usage is huge. Most energy derived from carbon based fuels
- Australian environmental emissions miniscule by comparison
- Any reduction by Australia is irrelevant – has no practical effect on world situation

# Level 11, 108 King William Street, Adelaide



## Parking Guide

- |                                                    |                                              |
|----------------------------------------------------|----------------------------------------------|
| <b>1. U-Park</b> ..... 08 8203 7203                | <b>10. Care Parks</b> ..... 08 8231 5994     |
| - 90-100 Grenfell Street                           | - Franklin Street Car Park                   |
| <b>2. Light Centre Car Park</b> ..... 08 8212 1566 | 81 Franklin Street                           |
| - 20 Playhouse Lane                                | <b>11. Care Parks</b> ..... 08 8231 5077     |
| <b>3. Care Parks</b> ..... 08 8231 5077            | - Pitt Street Car Park                       |
| - Little Waymouth Car Park                         | Cnr Pitt & Franklin Streets                  |
| 102 Waymouth Street                                | <b>12. Secure Parking</b> ..... 08 8223 2701 |
| <b>4. Care Parks</b> ..... 08 8231 2242            | - State Centre Car Park                      |
| - Henry Waymouth Car Park                          | 172 Gawler Place                             |
| 100 Waymouth Street                                | <b>13. Care Parks</b> ..... 08 8359 2202     |
| <b>5. U-Park</b> ..... 08 8203 7203                | - Roper Street Car Park                      |
| - Topham Mall Car Park                             | 15 Roper Street                              |
| 52-54 Waymouth Street                              | <b>14. U-Park</b> ..... 08 8203 7203         |
| <b>6. U-Park</b> ..... 08 8203 7203                | - Central Market Car Park                    |
| - Wyatt Street Car Park                            | 21-59 Grote Street                           |
| East Side Between Grenfell & Pirie Streets         |                                              |
| <b>7. Care Parks</b> ..... 08 8359 2202            |                                              |
| - Young Street Car Park                            |                                              |
| 16 Young Street                                    |                                              |
| <b>8. U-Park</b> ..... 08 8203 7203                |                                              |
| - Flinders Car Park                                |                                              |
| 191-207 Pirie Street                               |                                              |
| <b>9. EZIPARK PTY LTD</b> ..... 08 8223 4188       |                                              |
| - Flinders Street Car Park                         |                                              |
| 80 Flinders Street                                 |                                              |

## KEY

- ..... Engineers Australia South Australia Division Office
- ..... Car Parking Structure
- ..... Free 2 Hour 8.00am-6.00pm Street Parking
- ..... Ticket 2 Hour 8.00am-6.00pm Street Parking
- ..... Free Parking After 6.00pm
- ..... Tram Station