

The opening of the new South Australian Drill Core Reference Library

On 17 February 2016, the Honourable Jay Weatherill, Premier of South Australia, opened the new South Australian Drill Core Reference Library at Tonsley – a short distance from the Adelaide CBD – in South Australia. The ASEG was invited to a welcoming ceremony by Minister Tom Koustantonis and enjoyed an exclusive tour of the state-of-the-art facility.

The building is a prominent feature in the Tonsley Precinct. It stands out with distinctive grey and red cladding. The tiles are at an angle giving the impression of a speeding train, but also honouring the idea of a core tray. As we entered the building we found ourselves in a neatly furnished foyer area, carpet underfoot, and a sleek desk to the side. It put me in mind of checking into a nice airport lounge or hotel.

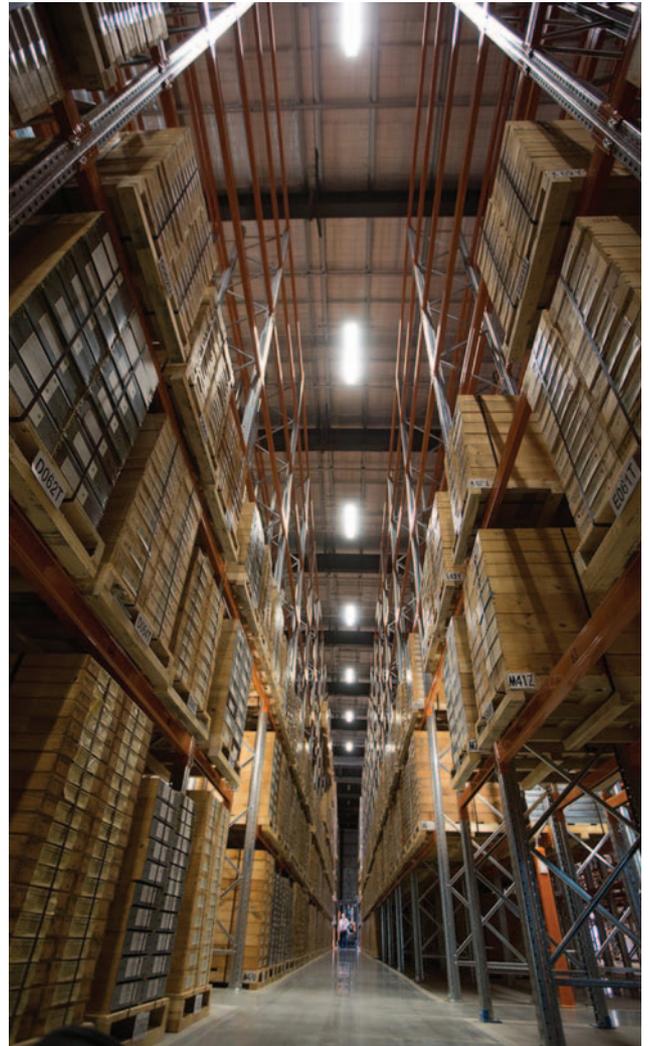
Adjacent to the foyer area is a second, larger space where afternoon tea was being served. The large Copper sculpture entitled 'From The Hill' stood in front of the northern windowed wall. Through the doors to the south is the core viewing area: a large room with 12 conveyer belts – each designed to hold an entire pallets' worth of core.

Next to this room – and behind the first foyer area – are the administration offices, including a kitchen, a lounge, and several break-out rooms for computer work and meetings. Also here is Data Metalogenica: a collection of type sections from ore deposits around the world. Up the stairs (or the lift) leads to a

conference area, including a board room (with a stunning view of the shelving), another kitchen, and several more break out rooms. A balcony looks out over the core viewing area, and following this around leads to the 3D visualisation room.

The 3D visualisation room is a classroom-sized room with a large back-projected 3D projector. As we entered we were handed 3D glasses and were treated to a 3D view of Olympic Dam – drillholes, seismic sections, hyperspectral information, landscape – all in one rotating spectacle.

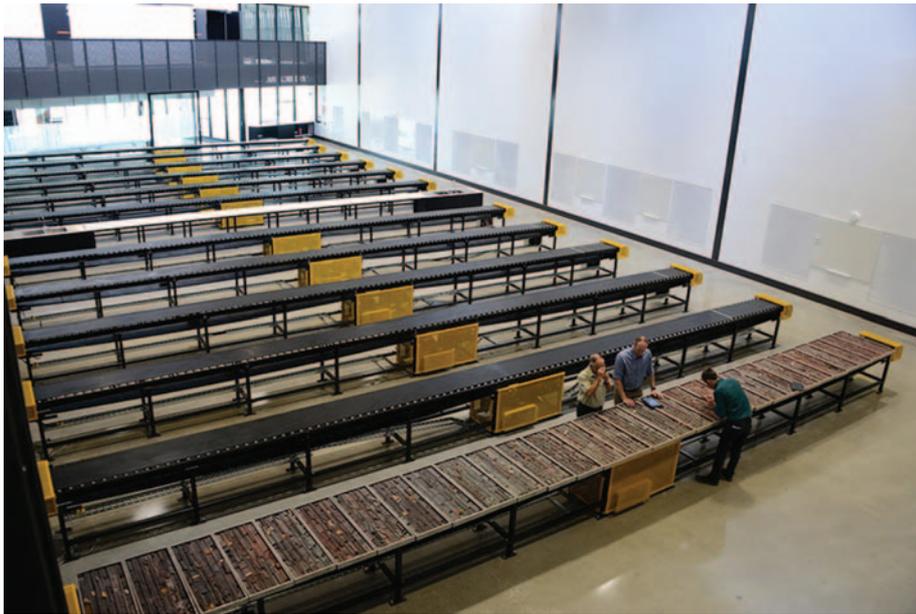
Our tour guide then led us out to the vast library section of the building, by far the largest portion of the building. At 9 metres high, much of the shelves have already been filled with pallets full of core trays. We're told that this Core Library will consolidate all the previous state



The storage section of the facility will hold more than 7.5 million metres of drill core samples (photo courtesy James Knowler: <http://www.theleadsouthaustralia.com.au/industries/mining-resources/hitech-drill-core-library-seeks-to-uneearth-discoveries/>)



The Tonsley Drill Core Facility as seen from outside (photo courtesy Ursula Michael, GSSA).



The drill core viewing area has space to hold 12 pallet-loads of core (photo courtesy Ursula Michael, GSSA).

core facilities (Glenside, Thebarton, Whyalla, Moonta) into a single building. It'll still take another few months before everything is transferred, and even then the space won't be filled. They expect at least 15 more years of core will fit in the facility, and after that there will be room

to extend the building further southwards. We're told that the area will fit more than 7.5 million metres of drill core sample.

We were given a demonstration of the new forklift that can reach 9 metres high, and then went to visit the loading bays

and the analysis room where the Hylogger™ is operated. The plan is to log the core as it arrives at the library before shelving it. The information from the Hylogger™ feeds directly into the 3D visualisation room.

We were then led back to the afternoon tea area and chatted enthusiastically with our colleagues. Everyone agreed that the new facility is amazing. The place is beautifully furnished, professional looking, and designed in such a way to ensure the core view process runs smoothly, efficiently and safely. And best of all, viewing core will be free-of-charge (although you must book). This facility will be a real key for future discoveries in South Australia.

The facility has been officially opened; however, it won't open for business until a little later this year. Why not visit the facility while you're in Adelaide for ASEG-PESA-AIG 2016?

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Drones in geophysics and geoDRONEology at SAGEEP 2016

The use of drones for capturing LiDAR, hyperspectral, low altitude L-band, tensor VLF-EM, magnetic, and photogrammetric data were the topics of the Drones in Geophysics technical session at the 29th Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), at the annual meeting of the Environmental and Engineering Geophysics Society (EEGS) held from 20 March to 24 March in Denver, CO. Although it is unlikely that drones will replace pilot-on-board aircraft anytime soon because of the regulatory constraints, the presenters made it clear that it will happen eventually. Moreover, based on the attendance in the session, it was evident that there is an emerging and keen interest in the using drones for geoscientific mapping of surface as well as the subsurface geology.



Drones in action at SAGEEP 2016.

The application of drone based photogrammetric methods to map surface geology was the fundamental theme of the one day short course titled geoDRONEology©: integrating drones into the geoscientific and engineering workflow. In addition to the material presented by the course instructors, Ron Bell and Rene Perez, several of the short

course registrants informally presented talks about their utilisation of orthorectified photo-images and digital surface models derived from the imagery to create 3D models for analysing formational units known to be oil and gas reservoirs at depth, assessing landslides and other geotechnical hazards, and exploring for, as well as discovering, lode gold deposits. Several manufacturers of multi-rotor and fixed wing drones as well as commercial UAS mission service providers echoed the notion that the selection of a drone for geoscience should be based primarily on the data need and site conditions. It is highly probable that as the utilisation of drones increases, companies will invest in fleets of drones and numerous sensors.

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Geophysics for the Mineral Exploration Geoscientist: report on the Sydney short course

This is a report on the short course jointly sponsored jointly by the NSW Branch Committees of the ASEG, GSA and AIG and held in Sydney, 16–17 February 2016.

The short course entitled ‘Geophysics for the Mineral Exploration Geoscientist’ was presented by Professor Mike Dentith, Centre for Exploration Targeting, School of Earth and Environment, The University of Western Australia, and was based on his 2014 book.

The two day event provided a state-of-the-art overview of geophysical exploration methods without recourse to complex mathematical descriptions. It included descriptions of all the main geophysical methods used in mineral exploration; including gravity, magnetic,

electrical and electromagnetic methods. Lectures were followed by practical exercises using real-world mineral exploration datasets. Course participants were guided through the basic physical phenomena, the acquisition and processing of geophysical data, the creation of subsurface models and their geological interpretation.

The course:

1. Explained the cutting-edge current practice in exploration and mining geophysics for the discovery of ‘blind’ mineral deposits.
2. Gave a practical guide to data acquisition, processing, and accurate interpretation of geophysical datasets.
3. Included presentation and analysis of petrophysical data, giving key

information on the physical properties of rocks.

4. Emphasised extraction of maximum geological information from geophysical data, providing explanations of data modelling, and common interpretation pitfalls.
5. Provided examples from all the main types of mineral deposit around the world.

The course targeted practising geoscientists with less than ten years of experience who have had limited exposure to formal education in the application of exploration geophysics, as well as unemployed/underemployed geoscientists and postgraduate students. The actual breakdown of the 30 attendees was:

- Early career (<10 years of experience) 8
- Un/underemployed geoscientists 10
- Postgraduate students 5
- Full fee employed (>10 years) 7

The NSW Branches of the AIG, the GSA and the ASEG underwrote the costs of the presenter’s travel costs, presenter’s fee and one copy of the book for each participant. There was no industry sponsorship of this event. The initial budget anticipated a net deficit for each participating society of \$3267.

The event income was boosted through the attendance by seven full fee paying delegates, for a net income of \$3748. Costs for the event were slightly lower than budgeted and totalled \$8643, resulting in a net deficit of \$4895. This result meant an event deficit for each society of \$1632 – a better than expected financial outcome!

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Participants in the Geophysics for the mineral exploration geoscientist short course held in Sydney in February 2016 (the presenter Mike Dentith is standing at centre).

ASEG-PESA-AIG 2016: update from the Conference Organising Committee



ASEG-PESA-AIG 2016

25TH GEOPHYSICAL CONFERENCE & EXHIBITION

Interpreting the Past, Discovering the Future

With less than four months to go, most of the conference details are being finalised.

The Exhibition Hall is filling up. At the time of writing roughly three quarters of the booths have been booked, so get in fast if your company is looking for promotion opportunities.

We're very pleased to announce that BP will be a silver sponsor of the conference. Welcome aboard BP!

Our bronze sponsors are Austhail Geophysical, CSIRO, and Velseis. Borehole Wireline will be the Lanyard Sponsor, and we have some Happy Hour sponsors lined up: stay tuned to *Preview* for further announcements. Sponsorship opportunities are still available but will close as you read this. Please contact us directly and immediately if you're interested.

The early bird registration deadline has been extended to 30 April 2016. This will give authors the opportunity to register at early bird prices once their papers have been accepted. If your paper is accepted as part of the conference, you have until 1 June to register for the conference to ensure your place in the conference programme.

Our team of paper reviewers are ploughing through around 200 extended abstract submissions. By the time of this publication the programme will be near completion.

Stay tuned to our social media channels. Our Twitter and Facebook feeds are updated most weekdays with news about geophysics from around the world, as well as photos and news from Adelaide and South Australia. LinkedIn continues to post updates on important deadlines.

The organisers have decided that the programme and timetable news and updates will be delivered through a mix traditional format (pocket programme) and online through mediums like email, Twitter, Facebook and LinkedIn. There is still an opportunity for an App, however this won't eventuate unless digital content sponsors can be found.

We look forward to seeing you in Adelaide in August!

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The Scintrex IPR-8 held in the ASEG historic instrument collection. This instrument was extensively used throughout Australia in the 1970s and 1980s. It was light, easy to use and fairly indestructible. Large areas of the west coast of Tasmania were surveyed using the IPR-8 by Scintrex using gradient array, pole dipole and dipole-dipole arrays between 1976 and 1983. However, the instrument was not waterproof. The high rainfall on the west coast meant that a hair dryer was an essential piece of equipment for every geophysical survey crew. The pictured instrument was one of those used in Tasmania on projects such as: gold in the Henty Fault Zone; copper in the Mount Lyell Field; lead/zinc around Zeehan; tin near Mount Heemskirk and for base metals around Roseberry and Mount Read.



REGISTRATIONS OPEN



ASEG-PESA-AIG 2016 25TH GEOPHYSICAL CONFERENCE & EXHIBITION

*Interpreting the Past,
Discovering the Future*

August 21-24 Adelaide, South Australia

www.conference.aseg.org.au



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Convened by The Australian Society of Exploration Geophysicists, Petroleum Exploration Society of Australia and Australian Institute of Geoscientists



Near Surface Geophysics – Asia Pacific Conference 2017: update from the organisers

Planning is underway for the Near Surface Geophysics – Asia Pacific Conference that will be held in Cairns from 17–19 July 2017. This is the third planned regular Near Surface Geophysics – Asia Pacific Conference, a joint initiative of the SEG, ASEG, CSG, SEGJ and KSEG. The Conference is held every two years, the first was in Beijing in 2013 and the second was in Hawaii in 2015.

The plan is to engage both geophysicists and end users of geophysics and discussions are underway with a number of possible technical partner engineering and geoscience societies.

The committees that are in place for planning purposes, with membership from all participating societies; SEG, ASEG, CSG, SEGJ and KSEG, are:

Advisory Committee

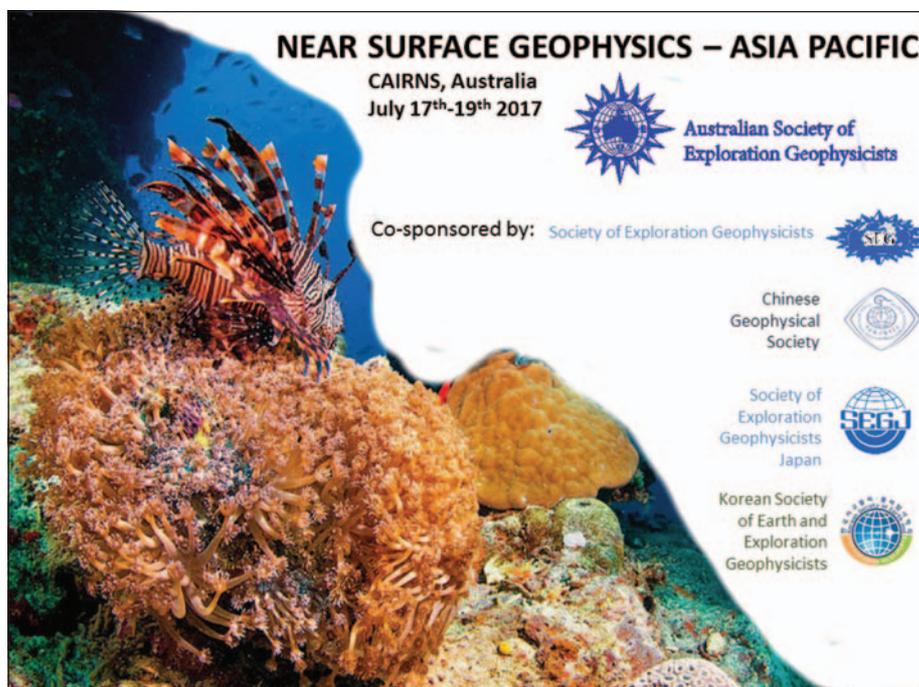
ASEG	Phil Schmidt
SEGJ	Hideki Saito
CGS	Yong Chen
KSEG	Cho In-Ky
SEG	John Bradford

Organising Committee

ASEG	Greg Street
	ASEG Chair
ASEG	Romney Rayner
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	ASEG Exhibitions
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SEGJ	TBA
SEGJ	TBA
CGS	Jian Guo
CGS	TBA
KSEG	Dr Seho Hwang
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ASEG	Meng Heng Loke
ASEG	Binzhong Zhou
ASEG	TBA
SEGJ	TBA
SEGJ	TBA
CGS	Jianghai Xia
CGS	TBA



KSEG	Dr Myeong-Jong Yi
KSEG	Professor Dong-Joo Min
SEG	Anja Klotzsche
SEG	Andrew Parsekian
SEG	Mark Everett
SEG	James Irving
SEG	Erasmus Oware

Publicity material and the conference website are close to being finalised. Themes for the conference are also being finalised, but the following are under consideration and of interest to the participating societies. Your feedback would be most welcome.

Themes under consideration

Methods:

- Sessions devoted to the full range of Near Surface Geophysics (NSG) methods including various remote sensing, downhole, land, marine and airborne methods (seismic, magnetics, radar, gravity, electrical and EM, NMR, geophysical logging etc.)
- Full waveform seismic in NSG – new research and developments
- Passive seismic methods, surface wave methods

Geotechnical:

- Geotechnical characterisation of sites
- Local site amplification of earthquake ground motion

- Application of rock physics to geo-technical engineering
- Tunnels and cavity/rock defects detection – from the surface and ahead of the tunnel face
- Shallow marine geophysics – ports, coastal engineering and offshore platforms
- Landslides and geohazards
- Cavity and void detection
- Case studies in engineering geophysics (examples of both success and failure)

Environmental:

- Case studies in environmental geophysics (examples of both success and failure)
- Contaminated site geophysics
- Catchment/surface water – environmental geophysics, airborne geophysics
- CO₂ geosequestration

Groundwater:

- Airborne EM and groundwater – as well as general hydro-geophysics
- Case studies in hydro-geophysics (examples of both success and failure)

Utility applications:

- UXO
- Forensic applications
- UAV and agricultural geophysics
- Archaeometry – archaeology and geophysics (case studies and advances)

News

in LIDAR, 3D radar, ground geophysics and satellite imaging)

Geology:

- Volcano geophysics
- Regolith geophysics

Mine site and mining exploration:

- Mine site geophysics
- Exploration under cover – near surface emphasis (characterising and removing the cover)

Modelling:

- Relationships and opportunities for the integration of geophysical, hydrogeological and geotechnical modelling

Workshops/courses:

- S waves (1D and 2D)
- Women in geophysics
- Engineering geophysics (state of the industry and the path forward, the application of cutting edge methods)
- Risk in site characterisation using geophysics
- Dams and Levees
- Full waveform seismic
- Integrating remote sensing and airborne geophysics for geoscientific analysis

Possible technical excursions – ideas so far:

- Great Barrier Reef (shallow marine geophysics)
- Local mine site (mine site geophysics)
- Local farms (agricultural geophysics)

Possible accompanying partner/social excursions:

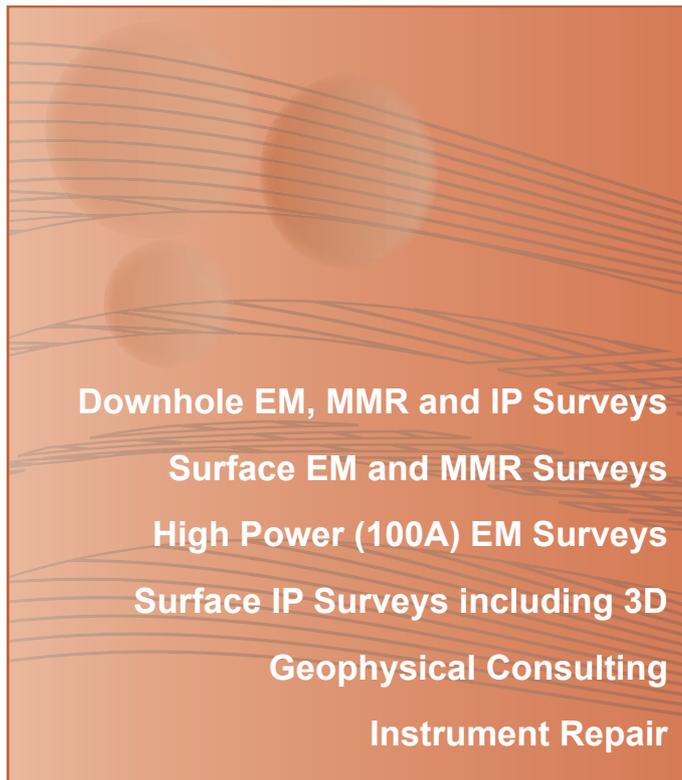
- Great Barrier Reef
- Daintree Rainforest
- Crocodile tour

Geoff Pettifer

Co-chair Technical Program Committee

NSG-AP 2017

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