Aspiring the Heights: APAS2016 Conference

The Association of Public Authority Surveyors NSW (APAS) was formed in 1994 primarily to cater for the needs of surveying and spatial information professionals working within state and local government and the education sector. Nevertheless, private surveyors also benefit immensely from APAS events such as conferences and seminars, which form an important part of the annual professional development events calendar.

APAS prides itself on organising an annual conference that is highly informative, focussed on practical outcomes relevant to the surveying and spatial information community and provides ample opportunity for interaction with colleagues and exhibitors showcasing their newest technology. Traditionally, about one third of delegates belong to private industry.

The APAS2016 conference was held in Leura on 4-6 April 2016. The conference theme was "Aspiring the Heights". It attracted 230 delegates from New South Wales and interstate, representing both government agencies (59%) and private industry (41%).

APAS2016 included 7 sessions with 23 presentations, most of which included a full paper. Continuing the tradition of being a practically oriented conference, a wide range of topics relevant to the surveying and spatial information community was covered. There was also plenty of opportunity for networking and exploring the newest developments at the technical exhibitors' booths.

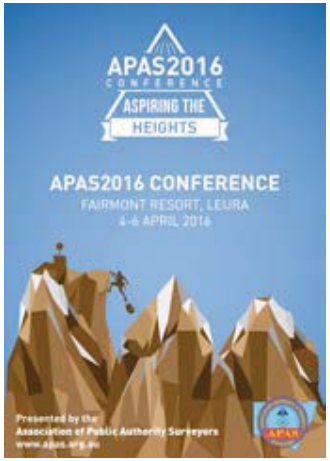
APAS2016 was a highlight on the CPD calendar, satisfying the year's requirements in regards to both cadastral and surveying practice CPD points. As usual, the conference kicked off on Monday afternoon with the annual APAS team building event (golf tournament).

5th April – Morning

The first session started with Dr Craig Roberts (UNSW) discussing how students are connected to industry while still at university in order to enhance their practical skills before entering the workforce full time. Wider industry engagement is available via research partnerships, industry projects and the Industry Partners Program.

Dr Volker Janssen (LPI) outlined the success story of CORSnet-NSW and how LPI supports the surveying profession in regards to GNSS infrastructure. Now comprising 180 CORS, the state-wide CORS network is still expanding and

Keynote address by Paul Harcombe, Deputy Surveyor General.



APAS2016 conference.

makes an enormous contribution to the geodetic fabric across NSW and indeed Australia. Further improvements in the State's geodetic control network are anticipated through the upcoming national adjustment as part of the modernised Australian datum.

Daniel Jaksa (Geoscience Australia) is Past Chair of the ICSM GDA Modernisation Implementation Working Group. He described the process of modernising the nation's datum, the move from GDA94 to GDA2020 and towards a future, time-dependent datum. This will ensure that the required level of accuracy needed by the wider community is attainable into the future.

The Official Opening took place at the beginning of the day's second session. Following a Welcome to Country by Aunty Val, Elder of the Darug People, keynote addresses were given by Paul Harcombe, Deputy Surveyor General of NSW, Gaby van Wyk, President Elect of SSSI, Michael Green, President of ISNSW, and Wayne Fenwick, Acting President of APAS. The Opening concluded with a heartfelt tribute to Grant Kilpatrick, former APAS President and long-term committee member who left us far too soon late last year.

After the official opening, Eric Sharpham (LPI) discussed Cadastre 2020, which aims to create a single land cadastre for NSW. He described the actions taken to develop a collaborative business case, and the policy and social drivers for change, such as the NSW Government's digital transformation agenda (including the DPXML project) and public expectation for access to information instantly, anywhere and on any device.

Following on, Lindsay Dyce (Rutlin) outlined the why and how of moving towards a single cadastre for NSW. He explained, in lay terms, what such a system would look like and how it would be an improvement on the current situation, providing examples that demonstrate the value of such a system and exploring a range of initiatives that may be implemented to develop it.

5th April – Afternoon

The first afternoon session began with Kevin Thompson (Crown Lands) presenting examples of legal aspects of boundary surveying applicable to Crown lands in NSW. These examples included matters involving tidal and non-tidal waters, possession adverse to the Crown, closer settlement, land ownership and roads.

Geoff Songberg (formerly Crown Lands) proposed a first step towards reforming riparian cadastral boundaries. Reviewing past misinterpretations of both tidal and non-tidal riparian cadastral boundaries and discussing the doctrine of accretion and erosion, he offered alternatives that could form the basis of reform. It is hoped that future dialogue will be formulated on this basis to improve the status quo.

This was followed by a discussion forum on Australia's next generation datum, GDA2020, and further datum improvement in Australia. Dr Craig Roberts (UNSW) led through the discussion that included Dr John Dawson (Geoscience Australia), Daniel Jaksa (Geoscience Australia), Les Gardner (LPI) and A/Prof Don Grant (RMIT) on the panel. GDA2020 is expected to be released in early 2017, with adoption to occur by 2020, followed by working towards a time-dependent datum. It is imperative that spatial professionals now learn, understand and prepare for this upcoming datum modernisation and become aware of the differences between common datums used in Australia. A summary of the discussion will be provided to the Implementation Working Group.

The second session of the afternoon kicked off with Rod Eckels (MNG Surveys) describing the Hologram Room, an 'Australian made' tool for viewing Mobile Laser Scanning (MLS) data that brings high-density point cloud data to life in a 3D 'virtual world'. The tracked viewer is provided with 'superpowers', being able to fly through the cloud, walk through walls, view features from all angles, hover above points of interest and zoom in to inspect any feature in more detail. This provides a powerful (and entertaining) tool for

Rod Eckels receives the best conference paper award from incoming APAS President Wayne Fenwick.

project visualisation and data inspection. For this contribution, Rod later received the Keith Haddon Memorial Prize for the best conference paper.

Pierre Hartzenberg (Cardno) presented examples of capturing, representing and visualising the 3D world by combining laser scanning and CAD techniques. From simple trees to expansive railway stations, suspended bridges and major shopping centres, start-to-finish work-flows are critical for successful project completion. The power of simulated fly-throughs, walk-throughs and fly-overs can be quite spectacular.

Brenton Ray (LPI) focussed on the 'Z factor', outlining the key benefits and challenges of the Surface Model Enhancement project to create a new digital surface and elevation model for NSW. He described the data and a range of innovative workflow enhancements that have delivered tangible results, and explored the ability for feature extraction and attributing opportunities that the soon-to-commence 3D Feature Extraction project will focus on.

Geoff Lenton, outgoing APAS Vice President and Annual Dinner MC.

The Annual Dinner concluded the day with dinner speaker Warwick Holmes describing the European Space Agency's mindboggling Rosetta mission to Comet-67P – the first interplanetary mission to orbit and land a spacecraft on a comet. He discussed the design, building, testing, launch and interplanetary trajectory to reach the comet (after a 10-year journey some 800 million km from Earth), the methods for navigating around and surveying features of the comet, selected science results, and showed breathtaking images taken on the surface of Comet-67P.

Annual Dinner speaker Warwick Holmes took the audience to outer space.

Les Gardner was awarded APAS life membership for his outstanding contributions to the organisation. Les was instrumental in founding APAS, was the first APAS President and has served on the committee in various positions for most of the two decades since.

6th April – Morning

The day's first session started with Tony Burns (Land Equity International) highlighting the importance of improved land administration services and the impact that the lack of a good land administration system has on the socio-economic development of many countries. There is increased emphasis on pro-poor policy, better land governance and the adoption of procedures and technology that are fit-for-purpose, with surveyors playing a key role in the process.

Greg Goodman (LandTeam) presented recent work carried out to help 'fill the void' in the NSW outback by performing control and detail surveys for an RMS upgrade of a remote 14 km section of the Silver City Highway some 230 km north of Broken Hill. One of the unusual inclusions was to allow part of the highway to be used as a runway for the Royal Flying Doctor Service to deal with emergency medical matters in the area.

Prof David Goldney (Charles Sturt University) outlined the development of an innovative thematic tourism package called Cox's Road Dreaming, produced as part of Bathurst's bicentenary celebrations. Consisting of a 100-page booklet and 8 accompanying maps, it describes 116 sites along the line of Cox's Road or in the immediate surrounds to present early colonial history and Aboriginal culture, describe the laborious road building exercise and facilitate tourists to experience 'history with their boots on'.

Fred de Belin (City of Ryde Council) used 'forensic fencing' to investigate the 'dark art' of re-defining an old DP (or the problem of using just the street to fix the street). He showed that the fencing occupations, by themselves, can deliver a fix of an old (1905) DP that is in closer agreement than using any of the found

APAS Life Members George Baitch and Les Gardner.

reference marks, without upsetting the surrounding cadastre.

At the beginning of the second session, Prof Chris Rizos (UNSW) examined the past, present and future of precise GNSS positioning. This included the implications of techniques such as NRTK, PPP and SBAS for traditional positioning and navigation applications using multi-constellation GNSS as well as speculating on what type of GNSS may be used for future positioning applications such as driverless cars.

Luke Pugsley (AMSA) discussed the status of AMSA's 16-station DGPS network, located strategically around Australia's coastline, and how it continues to meet international maritime performance requirements. He also touched on recent developments in the United States and the concept of e-Navigation, which plays an important role in the quest for resilient Positioning, Navigation and Timing (PNT) services that are independent of, yet complementary to, GNSS.

Stephen Saunders (Public Works) and Gavin Evans (ACT Office of the Surveyor General) outlined the 'GPS in Schools' project as an example of federal and state agencies collaborating together to facilitate a program that will provide enduring benefits to our industry. Focussing on NSW (five CORS) and the ACT (two CORS), this project has provided densification and redundancy to CORSnet-NSW, but also contributed immensely to education and industry promotion.

Ian Jones (Sydney Trains) highlighted the crucial role played by surveyors in the renewal of a major railway underbridge at Granville, which carries four busy rail tracks and spans four busy lanes of Parramatta Road traffic. The surveyors had to work to challenging deadlines, using total stations and digital levels under difficult conditions, but successfully completed the works on time with trains running to timetable at the planned times.

6th April – Afternoon

The last session commenced with Brian Burbidge (PSMA) describing the development of Geoscape, a nationally consistent database of building outlines and additional building information, from concept through to reality. It was important to integrate contributions from a wide range of data sources, maximise the

The technical exhibits provided plenty of opportunity to stay abreast of developments in state-of-the-art surveying technology.

product's flexibility and to enable it to evolve and provide a scalable platform into the future.

Kit Panya (RMS) discussed the subsurface stratum acquisition of approximately 900 lots for the $3 billion NorthConnex project, a proposed 9 km tunnel motorway linking the M1 and M2 in Sydney. Using a plan production and lodgement strategy unique to previous motorways, the timely compilation of boundaries for subsurface acquisition plans was made possible from analysis of spatial data and the tunnel model.

Chris Arnison (RMS) outlined the efforts undertaken at RMS to maintain the integrity of the cadastre and preserve state survey infrastructure. This is particularly important in the current era of heightened road infrastructure activity in order to avoid further loss of crucial survey infrastructure associated with major road projects.

Paul O'Dell (RMS) provided a health check for surveyors working near roads, including traffic control issues. He discussed the national Work Health and Safety (WHS) standards and the approach taken by RMS to ensure a safe working environment for all parties involved.

The successful conference concluded with a conference review and an open forum, allowing further consideration of issues presented during the conference. At the Annual General Meeting, the following APAS office bearers were elected for 2016/17: Wayne Fenwick (President), Thomas Grinter (Vice President), Nigel Petersen (Secretary & Public Officer), Michael London (Treasurer), Joel Haasdyk (Past President), Dr Volker Janssen (Publications Officer), Jarad Cannings (Conference Manager), Vittorio Sussanna (ISNSW Representative), and Committee Members Gavin Evans, Peter Nilon and Michael Waud.

The APAS2016 conference proceedings are available online from the APAS website (http://www.apas.org.au/).

Dr Volker Janssen, NSW LPI

APAS2017

APAS2017 will be held in Shoal Bay on 20-22 March 2017. Please consider contributing to next year's conference by presenting a paper. There is a lot of fantastic work being done out there – why not tell the profession about it? For more information and to indicate interest in presenting at APAS2017, please contact the APAS Publications Officer, Dr Volker Janssen at LPI (Volker.Janssen@lpi.nsw.gov.au).

POSITION VACANT

Azimuth Editor

The ISNSW Azimuth Magazine is currently without an official Editor. The magazine is being edited by an acting editor for the time being until we find a suitable replacement.

Below is a list of the responsibilities required for this position. There is an annual remuneration of $5,000.00 + GST.

If you consider this as something that would suit you please contact Terina Sawyer on behalf of the Azimuth Committee on (02) 9264 2076 or email: manager@surveyors.org.au

The following list gives a general indication of the editor's duties:

- Attend monthly teleconferences with the Azimuth Committee (about 1 hour)
- Contribute ideas for future articles
- Determine future direction of magazine in conjunction with Committee (eg electronic Azimuth)
- Source material from industry experts and outside sources
- Receive articles and photos by email each month
- Read articles and edit as necessary
- Write monthly Editor's Comments
- Acquire or choose photo for magazine cover
- Arrange articles in order to appear in magazine
- Send articles to art director
- Liaise with art director on magazine presentation
- Proof read and final checking before printing

The following are not part of the Editor's duties:

- Using publishing software to put the magazine together (this is done by the art director)
- Don't need to have any knowledge or expertise in publishing or software
- Don't need to be involved with the advertising in Azimuth (ISNSW office does this)
- Don't have to write articles (but you are free to if so inclined)

The position of Editor of the Azimuth magazine for the Institution of Surveyors NSW is held in high regard by the profession. We hope you will give this serious consideration and look forward to your response.

On behalf of the AZIMUTH COMMITTEE

Saori Nakamura

High-achieving TAFE Spatial Information Specialist: taking an unusual route to become a Surveyor.

Saori was born in Japan and spent her primary school years there, living with her parents. She must be fairly headstrong, as she asked her parents if she could attend High School in Vancouver, Canada, as a boarder. It took a year for her parents to agree, and she completed her last three years there.

Upon returning to Japan she worked for a few years before deciding to come to Macquarie University for a Commerce degree. However, a year of study soon told her that it was not her chosen field and she changed over to Environmental Management, which included a GIS subject. The outcome was a degree in Science (Spatial Information).

The LPI offered her a job in Newcastle as a data-entry worker for a time. Then she moved to Sydney where she is now working for AusGrid in their Data Acquisition department for underground service records. Under the mentoring of a Swiss surveyor she was influenced to think about further study.

Due to recent family commitments the only option was to enrol in an OTEN distance-learning course with the Riverina-Albury TAFE College. One year completed, accolades from her tutor, and a year to go will see her graduate. She is already doing 50% of her work in the field then completing the CAD and data-entry in the office.

Given that she has no immediate family in Australia, her commitment to personal advancement is very self-motivated. Saori receives support from her partner Jason and is very focused on her future.

It was a pleasure meeting such a vibrant young lady and I look forward to hearing of her future involvement in the profession.

Interviewed by Mary Harrison