

DON'T FORGET

At the end of CPD year 2018-2019 and thereafter, a minimum of 15 CPD points is required for non-registered members (Corporate).

It could be a combination of Cadastral, Mining and Survey Practice CPD points.

- Associate Members - 10 points
- Affiliate Members - 5 points
- Graduate (1&2) Members - 10 points

The above is to maintain membership of ISNSW.

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Important Notes Bossi CPD Audit

CPD Summary Report

This is the new name for the end of year CPD summary. This is what BOSSI need when you are audited.

100% BOSSI Audit

- All Mine / Land registered surveyors will be audited at the end of the 2018-2019 CPD period.
- A minimum of 15 points per annum.
- For registered land surveyors, at least 5 NSW specific cadastral points to be included in this minimum of 15 points, the remainder being Survey Practice points.
- For registered mining surveyors, at least 5 NSW specific mining surveying points to be included in this minimum of 15 points, the remainder being Survey Practice points.
- Download your CPD Summary Report when you are satisfied that it displays the events you have attended.
- You can send your CPD Summary Report to BOSSI early before you are audited.
- MyCPD User Guide can be found here <https://www.surveyors.org.au/mycpd1.html>

Sample of ISNSW (QR) membership card below:



Should you require assistance, please feel free to call
02 9264 2076
or email Maria Misquitta on
membership@surveyors.org.au

Data Mining for the Future: APAS2019 Conference

by Dr Volker Janssen, DFSI Spatial Services



APAS2019 conference

Celebrating its 25th anniversary this year, 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, focused 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.

The APAS2019 conference was held in Pokolbin in the Hunter Valley on 1-3 April 2019. The conference theme was "Data Mining for the Future" and focused on harnessing the ever-increasing volumes of data being made available. Combining these datasets will facilitate a better understanding of the dynamic world we live in, but only if we can appropriately maintain and

manage these datasets and their associated metadata. This is particularly important in regards to the current datum modernisation effort, i.e. the adoption of GDA2020 and the introduction of the Australian Terrestrial Reference Frame (ATRF).

APAS2019 included 7 sessions with 21 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 profession was covered. This year's key topics included datum modernisation, conforming to the Surveying and Spatial Information Regulation 2017, preservation of survey infrastructure, dealing with big datasets, and riparian boundaries. There was also plenty of opportunity for networking and exploring the newest developments at the technical exhibitors' booths.

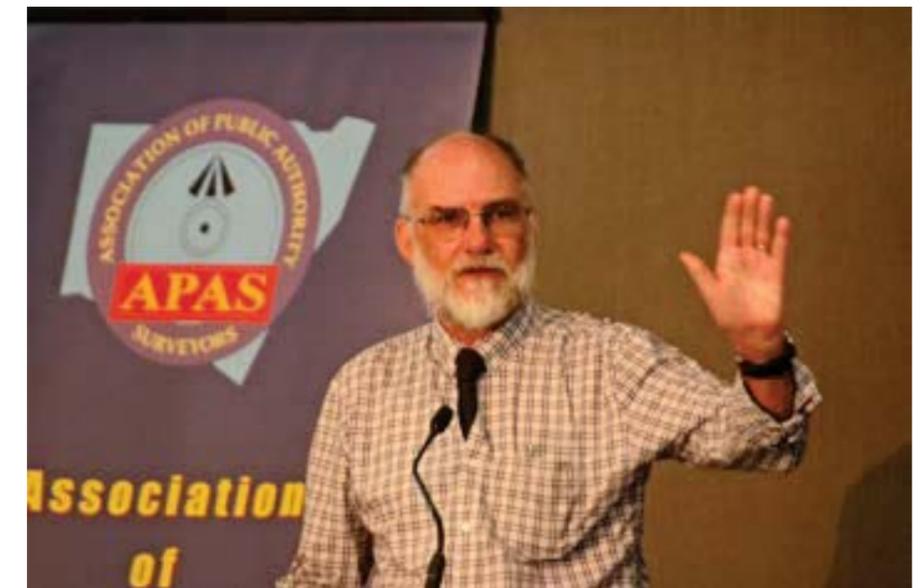
APAS2019 was a highlight on the CPD calendar and attracted a record 270 delegates from New South Wales and interstate, with 54% of delegates from private industry. As usual, the conference kicked off on Monday afternoon with the annual APAS team building event (golf tournament).

2nd April – Morning

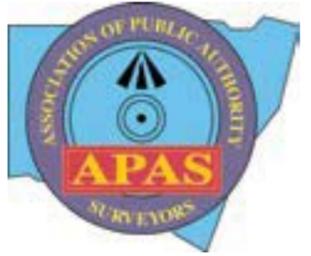
The first session started with Joel Haasdyk (DFSI Spatial Services) describing recent work regarding the implementation of GDA2020 across NSW government, academia and industry. CORsnet-NSW already provides both GDA94 and GDA2020 streams to users, while SCIMS will provide GDA2020 coordinates (along with GDA94) from July this year. Joel also discussed the future implementation of time-dependent coordinates.

Nicholas Gowans (DFSI Spatial Services) reported on his travels undertaken as winner of the NSW Surveyor General International Fellowship 2018. He concluded that significant improvements in accuracy and productivity could be gained with the adoption of a vertical datum defined by a gravimetric geoid model, although airborne gravity across Australia would be required and levelling would still be necessary for local-scale, height-critical projects.

Tom Bernstein (DFSI Spatial Services) introduced an alternative method of control survey that implements elements of Network Real-Time Kinematic (NRTK) methodology and infrastructure, in particular the Virtual



Keynote address by Tony Proust, President of ISNSW.





Left: Presenters captivated the APAS2019 audience with a wide range of topics.

Below: Technical exhibitor demonstrations.



Reference Station (VRS) method. This allows a static GNSS control survey to be carried out by a single surveyor using a single receiver, using manually generated VRSs to link temporally separated GNSS observations through post-processed static baselines.

The Official Opening took place at the beginning of the day's second session, starting with a Welcome to Country by Aunty Cynthia Morris, Elder of the Wonnarua People. Keynote addresses were then given by Melanie Dagg, Deputy-Mayor of Cessnock City Council, Narelle Underwood, Surveyor General of NSW, Paul Digney, President-Elect of SSSI, Tony Proust, President of ISNSW, and Thomas Grinter, President of APAS.

After the official opening, Lisa Powell (DFSI Spatial Services) and Narelle Underwood (Surveyor General of NSW) explored the importance of digital transformation and innovation in the surveying profession to meet the ever-evolving needs of the consumer. They presented options to address the challenges, including shifting the core business of a surveyor from measurement to management, promoting the value the profession adds for consumers, and the benefits of a diverse workforce.

2nd April – Afternoon

The first afternoon session began with Fred de Belin (City of Ryde) outlining that the practice of hiding or leaving measurement differences in the road reservation has caused issues with variance in street width, bends in formerly straight streets and uncertainties as to where the true street boundary is. He described how it is

possible to right these wrongs, also relying on stable, reliable and long-lasting marking of the street fix.

Martin Pundyk (Blairlanskey Surveys) showed how LandXML can be used to lodge Deposited Plans (DPs) with Land Registry Services (LRS). He provided a pathway on how to get started with this game-changing development to the status quo of DP preparation and demonstrated the many and varied benefits LandXML can provide to surveyors.

This was followed by several technical exhibitor presentations, showcasing new advances in technology and surveying instrumentation and how these can be used in practice for a wide range of applications. Practical demonstrations gave delegates the opportunity to appreciate and evaluate the capabilities of these instruments in practical scenarios.

At the beginning of the afternoon's second session, Troy Dean (RMS) described the survey work required in the construction of the Nepean River Green Bridge (Yandhai Nepean Crossing), which was opened in October 2018. The challenging work was high-precision, involved rotating survey control and bridge design values about different x, y & z coordinates (due to the bridge initially being constructed at 90 degrees), and necessitated surveying, thinking and analysing in three dimensions. For this contribution, Troy later received the Keith Haddon Memorial Prize for the best conference paper.

Steven Garlinge (Geodata KODA Australia) outlined how a variety of clever and effective systems have met the challenges of data management across the NorthConnex project. Such systems now move machine hardware and navigation systems even closer, providing an ideal platform for machine control and

integrated data capture. Underground crews can capture data in the tunnel, perform processing and checks with a few clicks, and then approve and send the data to office teams instantly.

Dr Volker Janssen (APAS Publications Officer) demonstrated how data collection, data analysis and data visualisation skills can be applied to investigate a particular topic. Using an example outside the field of surveying, he also showed how the results can be presented in an effective and informative way, keeping the target audience in mind.

The Annual Dinner concluded the day with dinner speaker Peter Sergeant (Monteath & Powys) presenting the history of mine surveying in NSW and the role of the modern mine surveyor, including the benefits and challenges of modern technology and the evolution of best practice and regulation. He discussed the implications that mining has on the public and public authorities, primarily in relation to mining induced destruction and disturbance of cadastral and survey control marks.

3rd April – Morning

The day's first session kicked off with Stewart Folley (DFSI Spatial Services) providing a 'road map' for the Preservation of Survey Infrastructure (POSI), when undertaking works that may remove, damage or destroy any survey mark in NSW. He explained POSI 101, a new resource pack on what is required in the application process, and explored real-world examples of how these strategies can be adopted during the concept and planning phase, through to the on-the-ground works and delivery.

Rachel Brown (Member of BOSSI CPD Committee & Chair of ISNSW CPD Committee) outlined the recent changes in the BOSSI CPD

Determination and how registered surveyors can contact any of the ratified organisations who can assist surveyors in meeting their BOSSI audit requirements. The latest round of changes includes increasing the amount of specialty points from 3 points to 5, and auditing all registered surveyors.

Shannon Dawson and Les Gardner (DFSI Spatial Services) described some of the common and more serious compliance matters regarding the Surveying and Spatial Information Regulation 2017 that require attention by registered surveyors. They gave some tips and tricks, also clarifying those aspects of the Regulation that are less well known yet still required for regulatory compliance.

At the beginning of the second session, Dr Craig Roberts (UNSW) discussed the critical importance of practical exercises in a modern

surveying curriculum. Giving details of practical exercises for the Bachelor of Engineering (Surveying), he argued for their retention in the curriculum as dedicated educators with a close connection to their profession are increasingly challenged to provide a well-rounded and useful graduate within the constraints of their institution.

Dr Harvey Mitchell (University of Newcastle) aimed to unscramble geodesy for practical surveying. Many geodetic matters can be eliminated as being of little consequence in most practical surveying, and the explanations of the remaining necessary and crucial topics can be simplified to an easily digested level. To this end, he enumerated the superfluous topics and briefly itemised crucial geodetic topics.

Narelle Underwood (Surveyor General of NSW) provided a uniform definition of a 'land



Above: Annual Dinner.



Left: Troy Dean accepts the Keith Haddon Memorial Prize for the best conference paper from APAS President Thomas Grinter.

survey' and emphasised that only registered land surveyors are allowed to survey land boundaries in NSW. She presented related legislation and definitions, and outlined the penalties applicable to unregistered persons undertaking land surveys or advertising that they can undertake such surveys.

Rafid Morshedi (WSP) showed how web scraping can be used to drastically reduce the time taken to search through development applications and automatically assess their risk for a particular infrastructure project, using natural language processing and machine learning methods. This allowed high-risk developments to be identified as they were submitted for planning approvals and new assessments could be made rapidly upon changes to the alignment.

3rd April – Afternoon

The last session commenced with John Brock (Brock Surveys) outlining that the Antonine Wall in northern England (built in the 2nd century) is still significant from a surveyor's perspective due to the unparalleled production of stone distance slabs, demonstrating how skilled the Roman surveyors were. This earthen construction was also a boundary demarcation monument, which designated the limit of the territory for which Rome claimed jurisdiction and control.

Geoff Songberg (formerly Crown Lands) demonstrated that ignorance, or negation, of the existing rules pertaining to riparian boundaries can have a destabilising effect on the integrity of the cadastre. He illustrated with examples how the impact of ambulatory boundaries, combined with the effects of poor and inappropriate management practices in the record keeping of the cadastre, has severely compromised the integrity of the cadastre.

Kevin Thompson (formerly Crown Lands) discussed whether our coastal waterways are tidal or non-tidal. Waterways are physically tidal with either normal or limited tidal exchange, but without human interference in the natural processes of sand transport they may not be tidal due to the entrances only being intermittently opened or closed. Information from plan and title records, aerial imagery and technical reports can provide clarifying evidence in this regard.

Fred de Belin (City of Ryde) investigated who owns Shrimpton's Creek in Ryde. This was a surprisingly complex question for a waterway of only 5 km in length because it included sections of concrete pipe, concrete culvert, not-so-natural watercourse, open channel, concrete channel in drainage easement and natural watercourse. He demonstrated how City of Ryde can clarify the ownership of the creek

bed now that the situation of tenure has been determined.

The 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 2019/20: Thomas Grinter (President), Jarad Cannings (Vice President & ISNSW Representative), Michael Armstrong (Secretary & Public Officer), Michael Waud (Treasurer), Wayne Fenwick (Past President), Dr Volker Janssen (Publications Officer), Peter Nilon (Conference Manager), and Committee Members Michael Kocoski, Michael London and Nigel Petersen.

The APAS2019 conference proceedings are available online from the APAS website (<https://www.apas.org.au/>).

APAS2020

APAS2020 will be held in Leura on 23-25 March 2020. 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 APAS2020, please contact the APAS Publications Officer, Dr Volker Janssen (Publications@apas.org.au).

Norman Victor Mann, FIS (1943-2019)

Author: Mark T Gordon, Hon FIS



A Tribute

The Surveying profession is small and the number of its members who could be considered leaders is appreciably less. There are not many of us who can work successfully in business but also find the extra time to have a positive impact on the profession and its place in society. Norm Mann was one such professional, and we are very much poorer for his passing earlier this year.

Norm was a recognised expert in water and sewer design, and his opinion was often sought and well respected. Norm's citation for his elevation to Fellow of the Institution is impressive and can be found in the November 2017 *Azimuth*. His active involvement in the industry commenced while I was still at high school and continued until well after I retired.

I first met Norm in 1999 when I became a delegate to the Surveying & Mapping Industry Council of New South Wales (SMIC). SMIC was originally the NSW branch of the national ASMIC and Norm was one of 5 NSW representatives when ASMIC first met in Canberra in December 1987. In 1988 Norm became the Secretary/Treasurer of SMIC NSW and held the position of its Chairman from 1990 to 1999. Although ASMIC folded in 1991, primarily due to lack of support from two State governments, Norm could see the benefit in having a NSW peak geospatial industry body where professional, business, academic and government associations could meet to discuss and resolve industry-wide issues. In spite of the collapse of all other State SMICs, he was determined that SMIC NSW would survive. The continued existence of SMIC NSW since that time and its current leadership by the NSW Surveyor-General is testament to Norm's vision.

Norm had first become involved in the profession because of the rejection by the Institution of Surveyors at its 1972 Newcastle conference of the grade of 'Technical Associate'. Norm was a surveyor but did not choose the cadastral path. However, he did not believe that his qualifications and experience made him any less professional than the members of the Institution. In consequence, having been rebuffed by one association, Norm was instrumental in forming another: the Association of Technician Surveyors was established in September 1973. Norm continued his relationship with this body on both State and National management levels, and provided leadership and guidance as it developed into the Australian Surveying Association and then into the Institution of Engineering & Mining Surveyors (IEMS). He was awarded a Fellowship of this Institution for his service to the profession.

Norm did not hold a grudge against the Institution of Surveyors for its rejection in 1972. In 1987, whilst still an active member of IEMS, he joined the Institution of Surveyors Australia, in the grade of Associate which it had initially precluded in 1972, and

served for 20 years as Secretary of ISNSW's Sydney North Group.

Norm had an overarching view of the profession – far broader than state boundaries or industry infighting. Between 1994 and 1996 Norm was a member of the Steering Group to oversee the development of National Competency Standards for Professional Surveyors. This activity led to the publication of the "Brown Book", a major step forward in determining what competencies that surveyors were expected to possess at different levels of qualification and experience. This resulted in the development of training packages to ensure these competencies could be met and, with me, Norm was a member of the industry reference group for the development of *CPP07 Version 1 Property Services Training Package* between 2001 and 2005.

As a member of both IEMS and ISNSW, Norm was instrumental in the merger of the Institution of Engineering & Mining Surveyors NSW with the Institution of Surveyors NSW in 2008. A postal ballot amongst IEMS members received 98% support for the merger, indicating the members' confidence that Norm would look after them – and he did. This merger resulted in him becoming a Director on the ISNSW Board of Management but in doing so he self-sacrificed his Fellowship status of IEMS. I suspect he knew that there would be time to remedy this later.

Norm Mann served his "new" professional association with dedication and competence, serving as Convenor of the Membership Committee and as a member of both the Survey Practice & Legislative Committee and the Continuing Professional Development Committee. Each of these committees is crucial for ISNSW governance, and each has a high workload. I was very pleased when his commitment was rewarded with his elevation to Fellow of ISNSW in September 2017.

On Saturday 6 April 2019 I attended a small gathering, organised by Norm's former daughter-in-law Danielle, at Rookwood Cemetery to pay tribute to Norman Victor Mann and to remember his contribution to life both inside and outside the profession. Amongst those attending the gathering were Phil & Julie Hayward, Vicki Tester, Rick Bartholomew, David Loomes, Peter Vandergraaf and Maria Misquitta from the Institution office. The family openly praised the Institution for the support and advice provided by Phil and the ISNSW Benevolent Association in a most difficult time. I have never been prouder to be a member of the Institution of Surveyors NSW.

Norm Mann was not a boundary surveyor but his influence transcended professional boundaries. Over many, many years he led the profession in senior management roles at IEMS, SMIC NSW and ISNSW. Many surveyors do not know that the recognition they enjoy today is a direct result of what Norm Mann negotiated and implemented for them. It was a privilege for me to have known him and to have worked with him.

Vale, Norman Victor Mann: rest well in the knowledge of your unique contribution towards ensuring the continuing sustainability of the profession.



The Institution of Surveyors NSW Benevolent Association Ltd

(A Company Limited by Guarantee Formed for Charitable Purposes)

The Association is entirely dependent upon voluntary financial contributions to cover the cost of operating. These contributions have to date come primarily from the Institution, together with several small grants, donations and legacies from members and the estates of members.

Any donation would be gratefully received.

The objects of the Association include:

- To counsel, help and advise any member of the Institution of Surveyors New South Wales Inc. in need or distress to overcome health and/or professional problems.
- To offer advice, guidance and, in circumstances considered by the Directors to be special, financial assistance by way of grants, loans or payments:

(i) to the family, surviving spouse and/or dependants of any

member of the Institution of Surveyors, New South Wales who dies;

- (ii) to the family, spouse and/or dependants of any member of the Institution of Surveyors, New South Wales, who is incapacitated and who, as a result, is incapable in the opinion of the Directors, or managing the affairs and welfare of himself or herself or his or her family, surviving spouse or dependants.

In order for the Benevolent Association to help members in need of assistance, the Benevolent Association would ask members to provide information on any member who has passed, is sick or in need of help.

Please contact the ISNSW Benevolent Association Secretary on (02) 9264 2076 or isnsw@surveyors.org.au.