



Ash Development Association of Australia

COAL ASH matters

14
DECEMBER

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Editorial

Another year down for the Ash Development Association of Australia (ADAA) and still we continue to advocate strongly for the interests of our members and the use of coal combustion products (CCPs) in an ever-expanding range of applications.

With such a strong industry, it is important to reflect on some of the key founders of the research behind the use of CCPs as the Association pays its respects to Peter Nelson and Geoff Youdale who both made outstanding and lasting contributions. Their legacy will remain a key part of the Association's objectives moving forward.

On a more positive note, the Association's involvement in the Cooperative Research Centre for Low Carbon Living continues with the announcement of a \$3.1 million research project in September 2014 into low carbon concretes which will continue to further the beneficial outcomes of CCP use.

In terms of key publications, after four long years of hard work and anticipation, the ADAA was excited to announce the publication of the *Coal Combustion Products Handbook: Second Edition* earlier this year. The Launch of this much-awaited Second Edition saw a number of industry stakeholders come together to celebrate the research and development required to produce such a publication with special thanks to Prof. Colin Ward for his unwavering commitment to this project. The Handbook is now available to purchase from the ADAA website via: <http://www.adaa.asn.au/store/>

Over the course of the latter half of the year, various members undertook a range of projects incorporating the use of CCPs in research and practical applications. New member, Coal Reuse, secured a lucrative contract for the removal of ash products from Stanwell's Tarong and Stanwell Power Stations to aid the development of 'new solutions for the management and reuse of CCPs that are pro-competitive, promote development of local industry and provide environmentally friendly applications for the reuse of the highest possible level of CCPs.' Additionally, Latrobe Magnesium commenced the testing phase of their magnesium-production project by sending CCP samples to China, with their Australian plant due for completion in 2016.



Educational events were also in abundance this year with a number of conferences available for Association members and industry stakeholders to attend. Conference reports are provided later in this edition for the Israel National Coal Ash Board (WACAU) Conference and the Construction Materials Industry Conference 2014 (CMIC14), both of which the Association attended in some form. Additionally, Coal Ash Asia took place in September 2014 with the World of Coal Ash 2015 (WOCA) and Concrete 2015 scheduled next year.

On a final note, the Association would like to wish its members a safe and happy Christmas and New Year. We look forward to continuing our work with you in 2015 to further the use of CCPs.



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Membership

COMPANY MEMBERS

A primary role of the ADAA is to bring together producers and marketers of coal combustion products (CCPs). Our activities cover research and development into CCP usage, advocacy and technical assistance to CCP producers and users, as well as a forum for the exchange and publication of CCP information.

For more information on the Association, visit us at www.adaa.asn.au

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- Adbri Masonry
- AGL Loy Yang
- Alinta Energy
- Boral Quarries & Recycling
- Bulk Flyash Grouts
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RECIPROCAL MEMBERSHIPS

- CSIRO www.cmit.csiro.au
- Association of Canadian Industries Recycling Coal Ash (CIRCA) www.circainfo.ca
- European Coal Combustion Products Association (ECOPA) www.ecoba.org
- UK Quality Ash Association www.ukqaa.org.uk
- American Coal Ash Association www.aaaa-usa.org
- World Wide Coal Combustion Products Network (WWCCPN) www.wwccpn.org

Peter Nelson: The Fly Ash Pioneer.

By Dr. Daksh Baweja.

I first met Peter Nelson at the Electricity Commission of New South Wales in 1983 when he was Supervising Engineer, Structural Design for the Civil Design Group. At that point in my life, I had no idea what fly ash was. Through Peter, I first learnt about this wonderful material that was going to play a big part in my life. In his career, Peter had over 45 years of civil engineering experience and commenced research into the use of fly ash in concrete in 1960 before most others in Australia. He was responsible for site supervision, structural design and contract administration for NSW power station works for over 30 years and had wide knowledge of specification preparation. He had served on several committees of the Standards Association of Australia including BD031 on Fly Ash in Concrete.

Like his love of cricket, wine and good foods, Peter had an extraordinary passion for the use (and not waste) of fly ash. Peter was a highly skilled civil engineer who was visionary since the 1960s in looking at partially replacing cement with fly ash in concrete. Knowing that we do this routinely in construction today, this was certainly not the case back in the 1960s and 1970s and not a lot of research had been done on this topic at that point. Peter was way ahead of his time considering sustainability principles in the 1960s and 1970s where environmental issues were as far away as flat screen TV's, iPhones and coloured clothing on the cricket field.

Peter was a visionary who saw an opportunity working at the Electricity Commission of New South Wales, one of the biggest producers of fly ash in Australia, of trialling this material in the construction of key sections of Vales Point and Munmorah Power Stations amongst other things. As a young engineer in 1983, I was introduced to this work by Peter. A key platform for the acceptance of new materials into construction is research done on the material as well as actual trialling on construction projects. In a time where it would have been difficult to introduce new concepts into construction for fear of risk and possible cost exposure, Peter had the ability to convince the powers that be to go with his vision of trialling fly ash concretes in the Outfall Canal at Munmorah Power Station and the Coal Conveyor Support Slabs at Vales Point Power Station. These structures remained in service for some 20 years before I became involved under Peter's direction in a research project that looked at the long term durability of fly ash in concrete structures. Since 1983 until today, fly ash has become part of my life and I have Peter to thank for that.



I recall Peter to be someone who was very easy going. He was great to work for and a brilliant mentor. He had passions for certain things like leg spin bowling, which he did very well. Peter's work on fly ash was also done very well. All the studies undertaken by the CSIRO, the Ash Development Association of Australia, Pacific Power and others found the concretes and civil engineering work done by Peter to be of the highest standards. I recall when first working for Peter to be in the opposite camp to the then CSIRO who were advocating for the use of cement based concretes without fly ash. After many years of research much of which was guided by Peter and a few restructures in various organisations, by the early 1990s, the CSIRO became strong advocates for fly ash concretes and promoted technologies relating to the material. Peter was in my view, instrumental in making that happen. This was followed by concrete companies in NSW and other parts of Australia routinely using the material in standard concretes, something Peter was passionate about. Peter published

many articles on fly ash in the American Concrete Institute and in Engineers Australia journals to name a few. After retirement from the Electricity Commission in the 1990s, he became the Administrator of the Ash Development Association of Australia. Peter left his wonderful mark on me, the civil engineering profession and a legacy in support of the wide use of fly ash in commercial concretes in Australia and other parts of the world. Peter, we salute you, the **Fly Ash Pioneer**.

A Tribute to Geoff Youdale

By Gavin Donald

Geoffrey Paul Youdale graduated from Sydney University as a Civil Engineer, specialising in Roads. After some years, his specialty within road engineering became pavement structures, including materials technology. This specialty is closely allied to geotechnical science and ground engineering.

Geoff was my colleague and friend for 36 years; in the old DMR (Department of Main Roads) and the RTA (Roads and Traffic Authority) and later in private sector consulting practice. He was a brilliant Road Pavement Structural Engineer, a strategic thinker, a creative innovator, a careful researcher, a superb manager, a genial people person and a loyal friend. He was also an excellent educator and advisor, willing to share his knowledge widely and generously. Geoff shone as a multidisciplinary team leader, pulling together different resources and perspectives to produce a culture of cohesion and synergy. I cannot speak too highly of Geoff's competency, capability and down-to-earth mindset. I will support my assessment with the words of some other colleagues.

Ken Porter says – in terms of practical design improvements and innovations, Geoff was always 8-10 years ahead of the average professional road engineer or technician. He was probably 15 years ahead of the road users, in the perception of safer and more efficient road infrastructure. He was 20-25 years ahead of the politicians that needed to facilitate these improvements. An excellent tutor and communicator, Geoff was a mentor to numerous young engineers in the RTA as well as interstate and internationally.

Greg Won says – I remember when the RTA was getting many construction contract claims over earthworks compaction. Consequently, with R&D funding, we developed the automated laboratory compactor. While walking out the back door of the lab I asked Geoff, "What are we going to call this compactor?" He immediately replied, "Let's call it PAVPAC" – such was Geoff's quick thinking. We put a copyright on the name PAVPAC and this lab equipment was marketed all over Australia, designed and built by our own central workshops.

Geoff Ayton says – one never had a shadow of doubt about Geoff's honesty, integrity and trustworthiness. He was a real "seeker of truth". Geoff Ayton also passed on a comment from the young **Justin Moss** whose comment is an indication of the depth of Geoff's contribution to the road pavement industry. Justin said: "Though I never knew Geoff Youdale personally, his name is in some way attached to everything I have learnt of pavements."

David Pratt told a colourful story from Geoff's early career at Orange – after his crew had just finished some road resurfacing, Geoff encountered a puzzled man searching for a gravel pile. He was reprocessing gold tailings with a new method to retrieve further gold, but unfortunately his tailings pile had been mistaken for a DMR stockpile. So Geoff could boast that he had paved the road with gold.

Another story from that era concerns the troubled Apollo 13 mission. The Dish at Parkes was one of the few tracking stations in the world that could receive signals from the Apollo spacecraft when behind the moon. The communications cable from the Dish was buried close to the road where Geoff's crew was working. As a safety precaution, Geoff stopped the digging and got the crew painting guide posts instead.

Ron Ferguson says – Geoff had considerable technical involvement and collaboration with Austroads and ARRB Group throughout his career. I shed tears on hearing of his death. Geoff Youdale you will be remembered.

From ARRB Group, **Dr Peter Kadar says** – I have known Geoff since 1983; he was a supporter and driving force behind the full-scale wheel load testing program for pavements. Many of the current pavement design features were initiated and supported by him. We remained in touch after his retirement and shared experience and passion for our profession. Living close to each other, we met quite frequently in the shopping centre and kept up the friendship. I will miss him as a colleague and friend. Geoff understood the importance of finding common ground to communicate with and educate people. He excelled not only as an engineer, but also as a communicator. His enthusiasm was contagious and his professional approach was exemplary.

Kieran Sharp (who was the initiating proponent for the Australian AM Honour awarded to Geoff) reflected – Geoff's contributions to road technology have had a significant beneficial effect on both the development and maintenance of Australia's road network. He played vital roles in Austroads research including the Australian segment of the US Strategic Highway Research Program, the World Roads Association (based in Paris) and the Global Road Knowledge Exchange Network.

After his retirement from RTA, he continued to contribute to the industry as a consultant and also to the establishment of and teaching for the Centre for Pavement Engineering Education (CPEE).

In 1996 Geoff was awarded the Australian Road Federation's John Shaw Medal in recognition of his meritorious contribution to road technology. In 1999, he was awarded the AusIndustry Innovation Award as part of the National Engineering Excellence Awards as a member of the RTA/CSIRO team that developed the RoadCrack high speed measuring vehicle.

After Geoff's retirement he suggested we meet regularly and work together on some projects, which we did. Our regular lunches soon grew larger, and several of the old gang have been meeting quarterly for 15 years now. This group was a product of Geoff's driving energy and personal touch.

To sum up, Geoff was perhaps the most eminent Australian Road Pavement Engineer of the last 30 years, and he will be missed and remembered fondly by many professional colleagues, friends and acquaintances around the world.

Coal Combustion Products Handbook: Second Edition

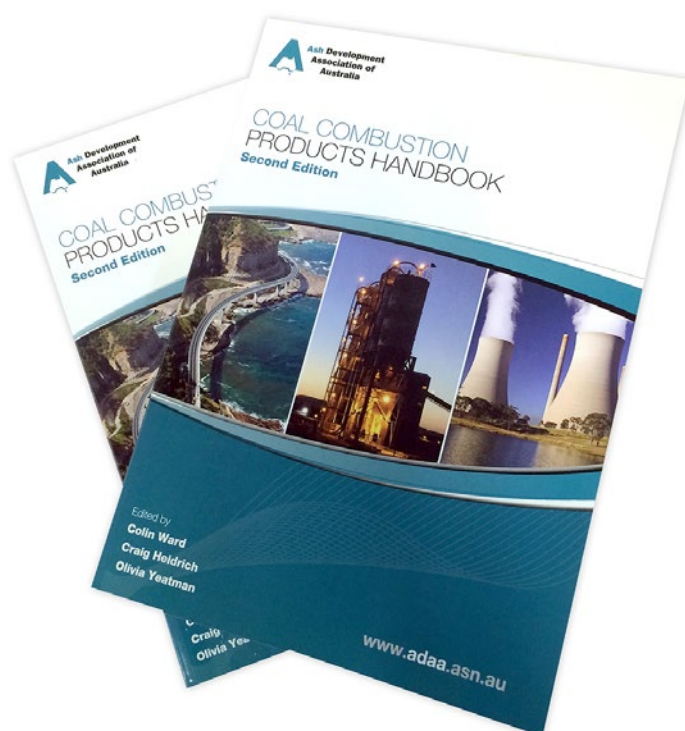
The Ash Development Association of Australia (ADAA) is excited to announce the launch of the *Coal Combustion Products Handbook: Second Edition*.

Despite the long process, the original aims of the update were to ensure that any existing information as well as new information on the CCP industry was timely and relevant to current applications. This coupled with market development and the distillation of trends has demonstrated that the use of CCP products is still a growth area with many more applications yet to be discovered. This new research also incorporates legislative changes in the form of exemptions that give regulatory certainty to the usage of these materials in the long-term.

The Launch took place on Monday 25 August 2014 at the Stamford Plaza, Sydney Airport with 50 attendees. It was clear that the *Second Edition* was highly anticipated and special thanks goes to our speakers, Frank Van Schagen, Roy Butcher, Colin Ward and Craig Heidrich.

Editor-in-Chief, Colin Ward, provided some interesting comparisons between the *Second Edition* and *First Edition* which was originally produced by the Cooperative Research Centre for Coal in Sustainable Development (CCSD):

Number	First Edition	Second Edition
Chapters	12	14
Authors	17	31
Pages	414	484
Weight	0.97 kg	1.73 kg



This has clearly been a mammoth effort and many thanks go to the CCSD, authors, editors and other contributors, including Stephanie Butcher and 101 Design, for their hard work.

Copies of the new edition are available to purchase on the ADAA website: <http://www.adaa.asn.au/store/>

Game changer for CCPs

Coal Reuse, Association member and Australia's newest CCP management provider has recently been working with Stanwell Corporation, a Queensland based energy company, and other international power generators to develop an innovative site removal system for coal combustion products (CCPs).

The two companies recently signed an agreement, appointing Coal Reuse to manage the beneficial reuse of CCPs from Stanwell's Tarong and Stanwell Power Stations until 2024. Essentially, this agreement seeks to aid the development of 'new solutions for the management and reuse of CCPs that are pro-competitive, promote development of local industry and provide environmentally friendly applications for the reuse of the highest possible level of CCPs.'

Importantly, the market demand for CCPs continues to grow with the introduction of innovative products such as green concrete as well as its incorporation in building materials, road base and agricultural products. Therefore, agreements such as this help to build the reputation of the industry as being confident, consistent and certain.

For more information, please visit the Coal Reuse website: www.coalreuse.com



Barangaroo 2023

Commenced in 2011 and due for completion in 2023, Barangaroo, in Sydney's north-west CBD, is currently undergoing an AUS\$6B upgrade and is Sydney's largest re-development project this century. Featuring a collage of skyscrapers, restaurants and boardwalks, the development is said to transform Sydney into a traveler's oasis, which, if estimates are accurate, will bring an additional 12 million visitors to the city each year.

With every large scale construction site comes even larger statistics. The creation of the towers will see 430,000 cubic meters of concrete used per day (the equivalent of 170 olympic size swimming pools). As movement of this much building material through the bustling Sydney streets would be highly expensive, the developers, Lend Lease, have agreed on the construction of a Batch Plant to create the concrete on site to save transport, time and money.

Boral has been contracted by Lend Lease to be the main supplier of concrete until mid 2016 when the contract expires. Boral is using their lower-carbon concrete Envisia at the site. Envisia uses fly ash, with less carbon, lower shrinkage and creep performance than regular concrete, giving it a 5 Green Star Rating from the Green Building Council of Australia.

The Ash Development Association of Australia will continue to inform members and other keen readers about the project in coming editions of Coal Ash Matters.



CONFERENCE REPORT

Conference of the Combined Australian Materials Societies

The Australian Ceramic Society, in conjunction with Materials Australia hosted the 3rd biennial conference of the Combined Australia Materials Societies (CAMS2014) from Wednesday 26 - Friday 28 November 2014.



This conference sought to bring together specialists in materials science, engineering and technology as Australia's largest interdisciplinary meeting in this field. The program included a range of international speakers with the Association's very own CEO, Craig Heidrich, who spoke about the potential use of coal combustion products (CCPs) in geopolymers based on the work undertaken by the CRC for Low Carbon Living.

For more information, please visit: <http://www.cams2014.com.au>

Cooperative Research Centre for Low Carbon Living allocates \$3.1 million of project funding for next three years to low carbon concretes

In September 2014, Project Leader, Professor Stephen Foster, UNSW announced during the 'kick off' meeting of industry partners that the Cooperative Research Centre for Low Carbon Living had granted approval for the \$3.1 million project over the next three (3) years; *RP1004: Performance Based Criteria for Concretes - Creating Pathways for Low Carbon Concrete Manufacture with Existing Standards*.

Prof Foster said 'this project is a significant one, building on the foundations of our initial project findings which need to address the current gaps in Standards to provide clear pathways for designers and engineers towards low carbon concretes.'

In particular the major project focuses on alternative pathways to the carbon emissions arising from the manufacture of Portland cement in Australia, which is estimated as eight million tonnes/year. Industrial by-products, such as coal combustion products (CCPs) and iron and steel slags (ISS) which are not effectively utilised can potentially replace a significant amount of Portland cement use in concrete structures.

The main barrier identified by the research committee to utilisation of these by-products is due to gaps in Australian standards, which do not recognise concretes without Portland cement. This project will explore alternate pathways for low carbon concretes to be used with existing standards by developing a performance based criteria for concrete, which may not contain Portland cement.

To view more information on the Project Partners, please see links below:

[Swinburne University of Technology](#)
[University of New South Wales](#)
[Ash Development Association of Australia](#)
[Australasian Slag Association](#)



New research opportunities for the use of stockpile fly ash in the UK

The UK Quality Ash Association (UKQAA) is currently sponsoring new research into innovative uses for stockpile fly ash at the University of Dunedin, Scotland.

With over 50 million tonnes of fly ash estimated to be currently in storage in the UK, there has been no other study to date into the use of fly ash recovered from storage facilities for use in construction. Specifically, samples from the various ash dams across the UK will be collected and tested to determine the performance of the pozzolans as a potential partial replacement in concrete.

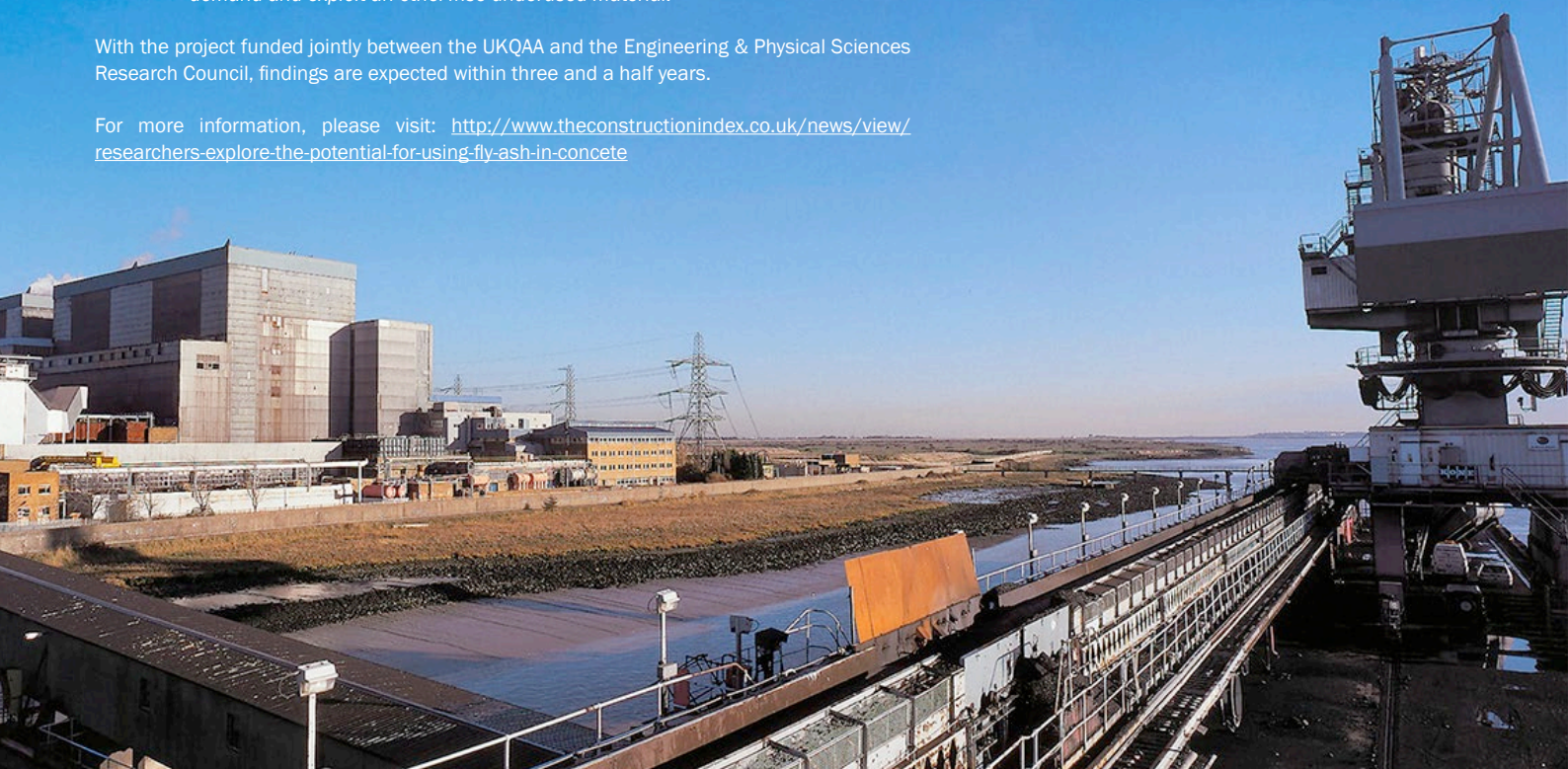
By increasing supplies of CCPs for utilisation in the construction sector in addition to that which is already sourced directly from the generator, the industry will be better able to utilise this sustainable resource and meet demand whilst reducing carbon emissions.

Technical Director of the UKQAA, Robert Carroll stated:

"Fly ash demand continues to rise to keep pace with a growing construction sector, but availability is dependent on our use of coal power. Unlocking the potential of stockpiled ash in ashfields across the UK could increase supply, meet construction demand and exploit an otherwise underused material."

With the project funded jointly between the UKQAA and the Engineering & Physical Sciences Research Council, findings are expected within three and a half years.

For more information, please visit: <http://www.theconstructionindex.co.uk/news/view/researchers-explore-the-potential-for-using-fly-ash-in-concrete>



CONFERENCE REPORT Coal Ash Asia 2014



This year the Asian Coal Ash Association held their Coal Ash Asia conference from the 23-27 September in Shouzhou, Shanxi Province, China. Over 500 delegates from over 15 countries attended the conference including researchers, managers, technology providers/buyers, power producers and government officials.

The conference focused on three main topics being high-value utilisation of fly ash, cement, concrete and geopolymers and scrubber materials. On this basis, the main objective was to provide an environment to facilitate knowledge sharing and the development of high-value utilisation solutions for CCPs.

For more information, please visit: <http://www.asiancoalash.org/caa-2014-introduction/>

CONFERENCE REPORT

Construction Materials Industry Conference (CMIC14)



The Construction Materials Industry Conference (CMIC) 2014 took place at the Brisbane Convention and Exhibition Centre, South Bank, Brisbane from Wednesday 3rd September to Saturday 7th September 2014. Once again the Institute of Quarrying Australia (IQA) and Cement Concrete Aggregates Australia (CCAA) joined forces to present this signature conference for the construction materials industry with the theme being *Building Productivity*, exploring Australia's changing business environment.



The Ash Development Association of Australia (ADAA) was represented during the conference in the Exhibition Hall where members and interested parties took advantage of the valuable networking opportunities available with suppliers, peers, customers and friends on a global scale.

- The Conference highlights included:
- 14 Keynote Speakers, 10 plenary sessions and numerous industry awards
- 500+ Delegates networking, listening and learning from the best in the field
- 51 Exhibiting Companies
- 20 Sponsors Companies

The Komatsu Gala dinner took place that evening and was attended by over 800 participants. This was an outstanding social event where the Plaza Ballroom provided an excellent venue for the live entertainment and formal dining.

The technical program theme of *Building Productivity* was of value to key industry stakeholders including civil and structural engineers, academics, manufacturers, contractors, developers, Government Departments and Local Councils. Whether it was efficiencies in processes, improved offerings to customers, or support tools and business systems for frontline services, every aspect of the business model was challenged.

Overall, CMIC14 once again provided a platform to showcase the Association and connect with many leading industry specialists. In particular, the ADAA was provided with the opportunity to promote the Association, further educate industry personnel and increase key industry contacts.



*The team from HBM Group
Craig, Carol & Olivia*

NSW ENVIRONMENTAL PROTECTION AGENCY

New Waste Regulations and Impacts on Coal Combustion Products

As of the 17th October 2014, the Protection of the Environment Operations (Waste) Regulation 2014 (PoEOWR) was published, coming into effect retrospectively on the 1st November 2014.

This new Regulation focuses on a range of measures to strengthen environmental controls, ensure a level playing field for industry and breaks the business model of rogue operators in NSW. However, this focus also required changes to the existing *Coal Ash Exemption* for coal combustion products (CCPs) used in NSW.

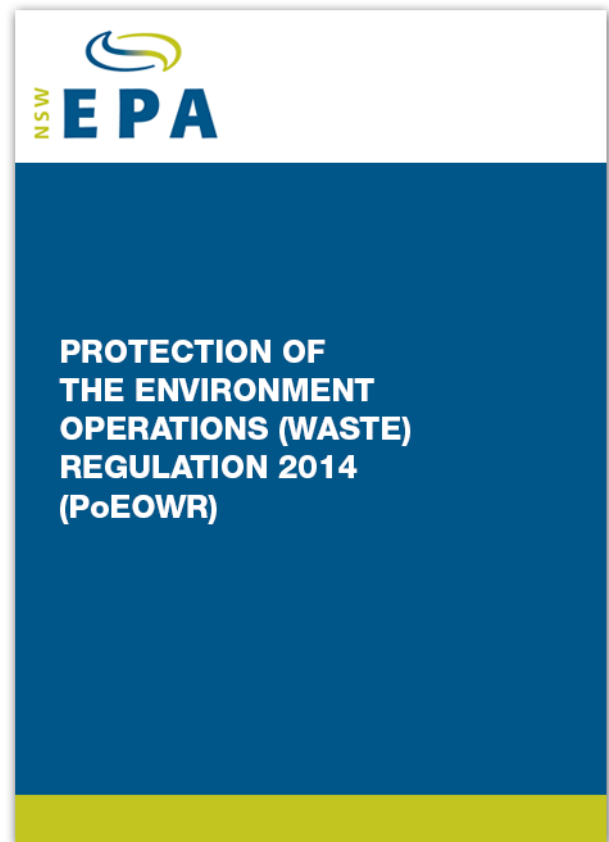
On the release of the PoEOWR, the Association has been involved in consultation, review and comment on the re-draft of the resource recovery exemption which will replace the existing framework. Due to restrictive deadlines, consultation time was limited.

Under the re-draft of the exemption, it will now be split into two separate documents: a Coal Ash Order and a Coal Ash Exemption. The Order establishes the conditions for supply by the generator or processor of CCPs whilst the Exemption is held by the user/consumer who buys and uses CCPs.

From the Association's point-of-view, we are of the understanding that these documents work in the same manner with the intent being that they have been separated out of legal necessity to align with the recently gazetted PoEOWR terminology.

Overall, the ADAA is satisfied that the revised documents reflect the key elements of the previous Exemption, whilst complying with the EPA legal drafting requirements.

The EPA has issued two separate documents, a Resource Recovery Order and a Resource Recovery Exemption to replace the current general exemption: <http://www.epa.nsw.gov.au>



UPDATE

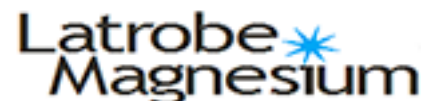
Latrobe Magnesium

Association member, Latrobe Magnesium, is currently in the process of developing a magnesium plant situated in Victoria's Latrobe Valley using its world-first, patented extraction process. With production expected to begin in June 2016 and Australia currently importing 100% of the 10,000 tonnes of magnesium annually consumed, Latrobe plans on selling the initial product to Australian and American contracts.

Magnesium is popular in Australian industries given its strength-to-weight ratio in comparison to other common structural metals where it is used in the manufacture of car parts, laptop computers, mobile phones and power tools. It's applicability to coal combustion products (CCPs) comes from Latrobe's extraction process which seeks to use the magnesium contained in fly ash from brown coal generation which currently remains under-utilised.

On this basis, earlier this year, a 600 kilogram sample of treated fly ash was sent to China for processing through a commercially operating magnesium plant. This process was facilitated in conjunction with Association members, Engineering Material Solutions (EMS). The magnesium and resulting cementitious material produced from this sample will then be sent back to Australia for further cement-related testing by EMS to determine the exact properties of the material.

This new application for CCPs demonstrates the potential opportunities available for further innovation in the industry. For more regular information, please visit: <http://www.latrobemagnesium.com/default.asp?id=87>



CONFERENCE REPORT

International Workshop on Agricultural Coal Ash Uses (WACAU)

In May 2014, the Israel National Coal Ash Board (NCAB) hosted representatives from Australia, Greece, South Africa, India, The Netherlands and the United States of America to discuss the use of coal combustion products (CCPs) in agriculture. The workshop program provided an opportunity to review and expand on the current uses for CCPs in agriculture. Australia was represented through the Ash Development Association of Australia (ADAA) by Dr. Jane T. Aiken to incorporate our Australian experience within an international context.

The current Israel position is an excellent example of commercial risk from the supply side of CCP production. In Europe and Israel, the coal is imported into the power station directly from a shipping terminal. In these cases, the lack of long term storage for coal ash at the power station site is a critical transfer point that can lead to problems of coal ash over-supply or under-supply, operating with short term storage facilities. For Israel, their current level of ash use is through the construction sector consuming 98% of current production with the construction industry typically linked to the financial sector. The long term uncertainty of this strategy is that the construction industry might continue to utilise the current volumes of coal ash. To ensure stability in the event of low demand in construction, the option discussed throughout the workshop proceedings was the use of fly ash as a carrier to improve the mixing properties of a municipal bio-solids fertiliser applied to fodder crops of wheat and corn.

Australia's commitment to CCP use in agriculture remains in the research realm and feasibility projects. South Africa use their CCPs via direct incorporation into highly acidic soils, as an integral part of open cut coal mine-site landscape rehabilitation returning mined lands back to agricultural capability. India is the nation with prolific use of CCP fly ashes for agriculture in attempting to solve their 230 Mt annual production volumes, with use at 775 sites throughout the country achieved. For Greece, their match of alkaline soils and alkaline ashes precludes a commercial option for agriculture with CCP use primarily by the construction sector. In America, the agricultural market for CCPs is directly associated with the main coal ash by-product of flue gas desulfurization (FGD) gypsum, being the only option for agriculture, and with limited approval for general use to land and agriculture. Additionally, the Netherlands also use their coal ash for construction.

For Israel, the perception is that use of the coal fly ash material for food production is still a high-risk undertaking, due to the wide range of different chemical properties and compositions that coal ashes may possess, which creates uncertainty. Consequently the workshop also focussed on a methodology to assess material suitability and performance. This specifically covered discussion about the traditional leaching testing called the Toxicity Characteristic Leaching Procedure (TCLP) method and validity of determinations on the basis of total elemental concentration. The alternative to this is a pH dependent method of geochemical speciation modelling to assess phyto-availability called the Leaching Environmental Assessment Framework (LEAF), with direct assessment for the bio-solids fertiliser applications. Used in conjunction with agronomic analyses adopting the LEAF will benefit Australian interests.

For additional information and links to the papers presented at the workshop access proceedings through the following link: Professional Materials Program and Presentations uploaded to National Coal Ash Board's website http://coal-ash.co.il/wordpress/?page_id=1141



NEWS UPDATE

Coal Reuse Launches World's First Open Online Marketplace for Coal Combustion Products

On 5th December 2014, Association Member, Coal Reuse, launched a world-first online marketplace for coal combustion products (CCPs).

With a mission to improve outcomes for power stations, industry and the environment by making access easier for the reuse of CCPs, the Open CCP Marketplace will provide an open forum for producers of CCPs. This method ensures that a safe, fair, simple and pro-competitive environment is facilitated.

Coal Reuse Executive Chairman, Rodney Hudspeth stated: 'Our CCP Marketplace represents a change to the industry but one that will result in us delivering on our promises.'

For more information, visit the Coal Reuse website: <http://www.coalreuse.com>



COMING UP World of Coal Ash (WOCA) 2015

The 6th biennial World of Coal Ash Conference will take place from 4-7 May 2015 in Nashville, Tennessee, USA. This international conference is organised by the American Coal Ash Association (ACAA) in conjunction with the University of Kentucky Centre for Applied Energy Research (CAER) and seeks to focus on the science, application and sustainable use of coal ash globally.

With organisers seeking to improve on the 600 participants and 50 vendors from 2013, presentations will include the utilisation of coal ash and flue gas desulfurisation, as well as:

- Sustainable projects using CCPs
- Emerging Technologies
- General ash management and disposal
- Mercury-related topics
- Research and case studies
- International updates and regulatory topics

As part of the Association's knowledge exchange objectives with other coal combustion product (CCP) producers globally, Craig Heidrich will attend on behalf of our members to deliver a paper focusing on aspects of the Australian industry.

Early bird registration opens on 1 April 2015 via <http://www.worldofcoalash.org> and we encourage our members to attend given the substantial business exposure and networking opportunities.

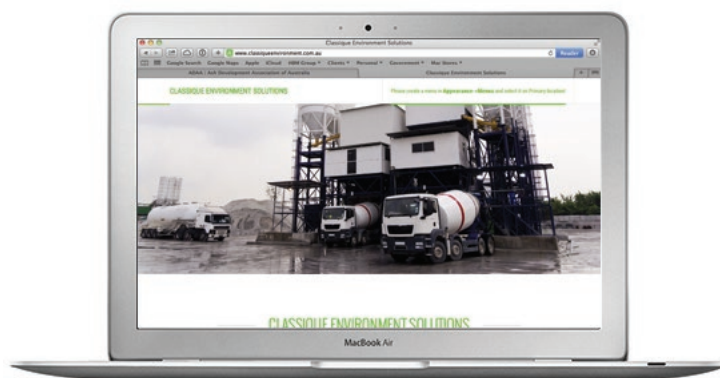


NEW MEMBER Classique Environment Solutions

Classique Environment Solutions (CES) is an Australian owned and operated company specifically set up to provide a marketable solution for the usage of waste products created by coal mining, through the use of the Ash Utilisation Development Program.

In implementing the Ash Utilisation Development Program, CES aims to create a range of marketable products which offer cost savings to both the manufacturers and end users. The Project has the potential to be adapted into any Power Station across Australia, enabling industry, economic and employment growth to be taken further afield once established.

For more information contact
Melissa Cuturich, Classique Environment Solutions Pty Ltd
m: +61 4 0410 4104 or via email: melissa@classiqueenvironment.com.au



COMING UP

Concrete 2015

The 27th Biennial National Conference, hosted by the Concrete Institute of Australia, is scheduled for 30 August - 2 September 2015 at the Pullman, Albert Park, Melbourne.

The theme, *Research into Practice*, seeks to bring together industry leaders on a global scale and will focus on concrete design improvements, research, construction, maintenance and repair of concrete projects.

This conference will also run alongside the 69th RILEM Week Conference. Interestingly, RILEM is the International Union of Laboratories and Experts in Construction Materials, Systems and Structures. Their mission is to advance scientific knowledge in relation to the construction industry and to encourage its use and application worldwide.

The Call for Abstracts is currently open for potential attendees wishing to present on experimental work, R&D, practice and industry applications, case studies and innovations which may be of interest to delegates with registration opening in February 2015.

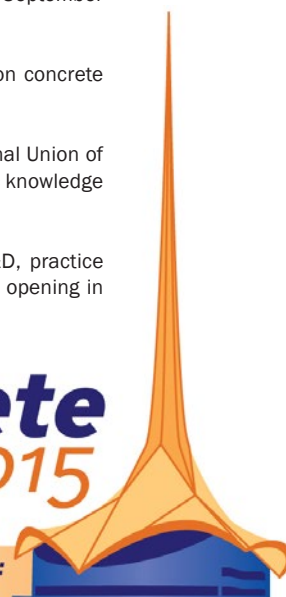
Importantly, the Association will be in attendance in the Exhibitor's Hall and encourages members to attend given the valuable opportunities available for knowledge exchange and networking with fellow colleagues.

We look forward to seeing you there in support of your industry!

For more information, please visit: <http://www.concrete2015.com.au>

concrete
30 August – 2 September 2015
Melbourne, Australia

construction innovations:
RESEARCH INTO PRACTICE



Get writing for Coal Ash Matters!



Coal Ash Matters is the Association's main educational publication that is produced twice a year for the benefit of ADAA members and to also create further understanding in other industry stakeholders and the community. Before each publication is drafted, an email is sent out to all members, urging them to contribute stories that they think are of interest. The types of content we are looking for include:

- **New developments or technologies**
- **New projects**
- **New employees**

We also have a Member Profile section which is open to all member companies for contributions on behalf of the business in general or a specific employee.

So, if you have an idea or even some content that you think might make an interesting article for our readers, get in contact with Editor Olivia Yeatman today!: research@hbmgroup.com.au

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