

## SUSTAINABILITY AND SLAG CONFERENCE HITS THE SPOT

**AFTER MORE THAN 18 MONTHS IN THE PLANNING**, the Australasian (iron and steel) Slag Association's conference held in Sydney on May 4th proved to be the right conference for the right moment. Over the last 6 months, issues of sustainability have escalated to the top of community and political agendas.

It is of significance that the conference was opened by the Hon Bob Baldwin, Parliamentary Secretary to the Minister for Industry, Tourism and Resources who in opening the conference, challenged delegates to learn from international experience.

Some 130 delegates heard from an array of top Australian and International speakers from areas of Government, construction, design, philosophy and Sustainability; informing and at times

calling delegates to action.

Philosopher Dr Glen Albrecht from the University of Newcastle challenged delegates that survival on our planet lies in giving appropriate weightings to the three legs of ecology, society and economy.

Evan Weiner, Executive Vice President, Chief Operating Officer Edw. C Levy Co in providing a US perspective stated that since 1918, over 2 billion tonnes of slag products have been sold in Canada and the US. He also pointed out that many of the solutions towards meeting greenhouse reduction and climate change are already known.

Speakers from the NSW RTA, Australian Government Architects Office, ARUP Engineers, Bovis Lend Lease and Readymix Ltd., addressed issues of sustainability in the construction chain in Session 2.

In the afternoon session, delegates participated in one of the three interactive workshops: Sustainability and the Bottom Line (3A), Alternative Raw Materials Use in the Construction sector (3B) or Slag Pavements Workshop. All three workshops were well attended, with session 3B discussing the legal/regulatory impediments to the use of alternate raw materials in the manufacture of Cement and Concrete.

Adjunct RMIT Professor and Director Sustainable Solutions, Prof Alan Pears in bringing a most successful conference to a close summed up the Ecologically Sustainable Development Paradigm.

The Conference Dinner provided opportunity for continued networking and discussion sparked by the day's conference.

## AUSTRALASIAN SLAG ASSOCIATION CONFERENCE CHAIR SETS THE AGENDA – SUSTAINABILITY, CONSTRUCTION MATERIALS & YOUR BOTTOM LINE.

**IN WELCOMING DELEGATES TO THE AUSTRALASIAN SLAG ASSOCIATION'S MAY 2007 conference**, at the Shangri La Hotel in Sydney, Association and Conference Chair Andrew Wilson clearly set forward the conference objective.

Mr Wilson stated: By the end of this conference, each of our speakers, in their own way will have articulated a simple four-point proposition – this 4 point proposition goes to the heart of our objective today:

That the use of alternative materials such

as supplementary cementitious materials, and especially slag based products are good for your bottom line and are good for the Australian economy.

That the use of supplementary cementitious materials and especially slags are good for the environment and are genuinely cost and value effective with other alternative options.

That the use of these materials will reduce greenhouse gas emissions in a cost and value effective manner – ladies &

gentlemen – let me repeat that – use of the materials will reduce greenhouse emissions – and, finally...

That the use of these materials will contribute to the sustainable development of vibrant and uniquely Australian construction, engineering, architecture and design industries.

That would seem to be a win, win, win, →



Andrew Wilson

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Connections is published by ASA

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Publisher ASA inc. Executive Director Craig Heidrich Editor David E. Jones

Art Director Martin Costanzo Design & Print Martin Costanzo

Connections is a quarterly publication with a circulation of 2,000 copies

# FEDERAL MP OPENS CONFERENCE AND COMMENDS ASSOCIATION FOR EXPLORING SUCH TABOO SUBJECT OF CLIMATE CHANGE

**THE HONOURABLE BOB BALDWIN MP – FEDERAL MEMBER** for Paterson & Parliamentary Secretary to the Minister for Industry, Tourism & Resources, opened the conference, acknowledging the work of the Association in contributing to the Cement Action Agenda and for having the courage to focus the conference on climate change, sustainability and the part products such as iron and steel making slags can play.

The choice for industry and the community is do you get the maximum use out of each and every product or do you park it? Mr Baldwin highlighted the need to continue to learn from international experience and see the value in using materials from other sources. He cited the example of the Chinese who will waste almost nothing. They know the value added proposition.

It is possible to learn from prior experiences around the world and indeed from other states and other business sectors. That learning will influence policy generation and it is possible to contribute to that policy generation. In addressing the 130 delegates from areas of Government, construction, design, philosophy and Sustainability; Mr. Baldwin stated the Conference and its program shows that the Association and its constituency are prepared to embrace change. There is however the ongoing need to prosecute the case for change with the community and government.

Philosopher Glen Albrecht (Professor, University of Newcastle) reminded delegates of Aldo Leopold's 1933 statement; Civilisation is a state of mutual and interdependent cooperation between human animals, other animals, plants and soils which may be disrupted at any

moment by the failure of any of them.

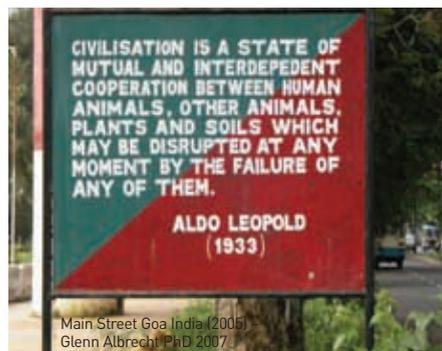
Slag for iron and steel manufacture needs to be redefined according to its true structure as an industrial glass Professor Albrecht said. Considering it in this way enables us to see the contribution that these materials are able to make to improving industrial ecology. Given the true finiteness of our world and its resources, we need to recognise that the business as usual paradigm is no longer sustainable if indeed it ever was.

The business as usual paradigm, in Prof Albrecht's view, is to deny the limits to growth, declare no problem unsolvable, adopt an essentially economic bottom line and give lip service to the triple bottom line. It is typified by the attitude lets do or get away with what we can.

Its not just the climate! Prof. Albrecht stated that Approximately 60 percent of the ecosystem services that support life on Earth – such as fresh water, capture fisheries, air and water regulation, and the regulation of regional climate, natural hazards and pests – are being degraded or used unsustainably.

The Laws of Ecology (Barry Commoner 1971) state; Everything is connected to everything else, Everything must go somewhere, Nature knows best and there is no such thing as a free lunch.

It is time for the new Industrial Revolution requiring: A need to apply the principles of sustainability to all forms of industrial activity. Included in this is the need for industrial systems to eliminate all forms of waste (not just CO2). Industrial systems must be symbiotically connected to societies and ecosystems Corporations who move in this direction will be internationally competitive while at the same time acting in ways that are socially and environmentally responsible. Professor Albrecht proposes that Sustainability is the master concept of the 21st Century.



The Hon Bob Baldwin MP



Glenn Albrecht PhD



James Trezona – Senior Project Engineer, Bovis Lendlease

win situation Mr Wilson said.

On behalf of the Association, Mr Wilson thanked Platinum Sponsors – Steelstone, a division of South Coast Equipment and the federal government's Department of Industry, Tourism and Resources, Silver sponsors – Westrac and Dillenger Hutte, and Bronze Sponsors – the NSW RTA, Coastwide Engineering, Cement Industry Federation and the Edward C Levy Co of USA.

The Australasian Slag association has pursued its vision for almost 2 decades, to increase community, business and government awareness of the superior construction properties, durability and sustainability benefits from the use of various iron, steel furnace slags and their contribution to the construction industry bottom line.



## TECHNICAL SEMINARS

To arrange a technical presentation for your workplace contact [info@asa-inc.org.au](mailto:info@asa-inc.org.au)



# SLAG CONTRIBUTES TO RTA SUSTAINABILITY FOCUS



**JUSTIN MOSS, MATERIALS TECHNOLOGIST, PAVEMENTS SECTION** – Roads and Traffic Authority NSW outlined the RTA’s approach to sustainability in the Owner’s Issues – Sustainability in the Construction Chain session of the conference:

Sustainability for the RTA and Government Departments is driven by the NSW Government definition:

“...the idea that future generations inherit

a world at least as bountiful as the one we inhabit.” (NSW Premiers Department).

In achieving this, all aspects of the business need to be examined for their social, economic and environmental sustainability. This takes in sustainable development, consumption, cultural and businesses decisions. All agencies report to the NSW Department of Environment and Conservation on purchases and waste.

The NSW Government greenhouse plan is to reduce emissions by example and to use the purchasing power of Government to promote action.

For the RTA, balancing social, economic and environmental factors requires:

- maximising reuse/recycling of materials
- avoiding resource consumption
- reducing greenhouse emissions
- reducing toxicity of materials

The RTA is a significant user directly and indirectly of slag pavements such use supporting the RTA’s sustainability goals and contributes to durability of state road infrastructure. Principal uses are in pavement, asphalt and in concrete.

Slag products are used within economic haulage distance of Newcastle particularly as heavy bound pavement and within economic haulage distance of Port Kembla in a range of pavement types and as asphalt aggregate.

There is still opportunity for further use of slag materials by the RTA in the area of cement use by setting minimum levels of GGBFS in concrete pavements and the use of GGBS as a fine sand in rigid pavements.

## ONE MAN’S WASTE ANOTHER’S TREASURE

**SINCE 1918, 2 BILLION TONNES OF SLAG PRODUCT HAS BEEN SOLD IN CANADA AND THE US** reported Edward C Levy Co Executive Vice President Evan Weiner. Founded in Detroit as a service company to Henry Ford’s

fledgling Automobile Company, the dictum one man’s waste another treasure has guided the Levy Company’s growth through to the current, with Levy now servicing 20 steel mills in USA, Australia, Thailand and France.

The Levy Company has diversified to include quarries and other construction and mill service related businesses but maintains that it has never discounted the purchase price of slag products, recognising their full market value. In the USA, 4 of the 23 blast furnaces produce annually 2.8 million tonne of Granulated Slag for cement with a further 800,000 tonne per annum being imported.

Sustainability issues are a priority in USA,

with the USEPA seeking to bring about change through the Resource Conservation Challenge (RCC) involving 100 full-time employees and university support. This gives the EPA the opportunity to: work on national problems, leverage outside partnerships, create sustainable projects provide measurable environmental outcomes.

In conclusion, Mr. Weiner stated that there are many initiatives being taken in advance off Government regulation. He stated that sustainability can be fun and many solutions are currently accessible, showing a number of energy efficient and alternate energy sports cars all made by small innovative companies.

# SLAG AGGREGATE NOW ACCEPTED FOR GREEN CREDITS



Peter Poulet – Assistant Government Architect, NSW Government Architect’s Office describes Architect’s role in moving public opinion.

In a project engaging with Industry, the Cement Concrete and Aggregates Association, a standard project house was redesigned to maximise thermal efficiency. The resulting design was similar in construction cost to the original project house without the need for air conditioning.



**THE CURRENT PUSH FOR BUILDING DESIGN** and construction that minimises greenhouse impact at the construction and operation stage has given rise to a new designs and material selection.

Projects are evaluated against eight environmental impact categories, plus innovation. Within each category, points are awarded for initiatives that demonstrate that a project has met the overall objectives of Green Star and the specific criteria of the relevant rating tool credits.

Up to three points are awarded for ‘significant recycled content’; that is made up of...

Two points awarded where the average quantity of Portland cement has been

substantially reduced as a result of substitution with industrial waste products:

- **1 point** = 30% for in-situ concrete, 20% for pre-cast concrete and 15% for stressed concrete; and
- **2 points** = 60% for in-situ concrete, 40% for pre-cast concrete and 30% for stressed concrete;

An additional point awarded where 20% of all aggregate used for structural purposes is recycled (Class 1 RCA) or slag aggregate AND no natural aggregates are used in non-structural uses.

Melbourne Council House 2 is benchmark 6 star design as assessed by Greenstar.

## Company Members

A primary role of our Association is to bring together Slag Producers, Processors, Customers and Suppliers to the Slag industry. Our activities cover Technical Developments, Plant Operations and Processes, Education and Promotion. If you would like more information on the Association and how you can become involved, just complete the information section at the end of this newsletter. Current membership is as listed below.

- Australian Steel Mill Services Pty
- BlueScope Steel Ltd (Port Kembla)
- Concrete Pty Ltd
- CSIRO CMIT
- EcoCem Pty Ltd
- Fractum ApS
- HiSmelt Ltd
- Holcim NZ Ltd
- Hunter Mill Services Pty Ltd
- Komatsu Australia Ltd
- MultiServ Australasia Pty Ltd
- MultiServ (UK)
- University of Newcastle
- University of Wollongong

- Premium Tyre Service Pty Ltd
- Readymix Holdings Pty Ltd
- Roads & Traffic Authority of NSW
- Smorgon Steel Ltd (Melbourne)
- Smorgon Steel Ltd (Newcastle)
- Steel Cement Ltd
- SteelServ Ltd (NZ)
- Steelstone Services
- Sunstate Cement Ltd

## Personal Members

- Anderson, L
- Dobson, G
- Gregory, G

- Hanley, P (Hon.)
- Hinczak, Dr, I (Hon.)
- James, W (Hon.)
- Jones, D E (Hon.)
- Heaton, B (Hon.)
- Maric, M
- Prosser, S D (Hon.)
- Venour, M (Hon)

## Related Associations

- National Slag Association (US)
- Nippon Slag Association (Japan)
- European Slag Association (EU)

# DELEGATES ENGAGE WITH SUSTAINABILITY SOLUTIONS IN WORKSHOP SESSIONS

**DURING THE AFTERNOON SESSION OF THE ASA CONFERENCE**, three concurrent workshops were held. The alternative Raw Materials Use in Construction Section: Legal/Regulatory Issues Workshop. This workshop was a practical follow on to the Cement Industry Action Agenda in which the Association played a significant part. Sponsorship of this segment of the conference came from the federal government's Department of Industry, Tourism and Resources.

The intention of the workshop was to "explore the legal/regulatory impediments to the use of alternative raw materials (ARM's) in the manufacture of cement and concrete, a key issue identified by the Cement Industry Action Agenda (CIAA)". The specific objective being to "identify pathways for government and industry actions that can lead to the removal of legal or regulatory barriers for utilisation, thus

increasing the uptake of alternative raw materials and supplementary cementitious materials (SCMs) such as iron and steel slags".

The vibrant discussions during the group sessions indicated the keen interest by industry personnel relative to the issues.

Further innovative approaches will be needed to gain the attention of the relevant personnel within government jurisdictions who have the power to act so that appropriate changes can be made to legislation to ensure environmental and social imperatives are met and industry is able to responsibly manage the alternative resources they have available.

To this end the ASA may need to explore and champion the formation of a multi industry driven working group bringing together affected industry co-products thus giving weight to the issue and gain traction within government jurisdictions.



Andrew Wilson



Alan Pears

**The intention of the workshop was to "explore the legal/regulatory impediments having greatest potential to frustrate the current and ongoing use of alternative raw materials (ARM's)**

## RMIT DIRECTOR OF SUSTAINABLE SOLUTIONS SUMS UP CONFERENCE

### **IN SUMMING UP THE CONFERENCE,**

Professor Alan Pears, Director Sustainable Solutions RMIT declared that the conference was an exciting and stimulating experience.

Glenn Albrecht outlined a very powerful and important sustainability framework. A key thing for industry will be to develop a strategic approach to sustainability.

Evan Weiner opened my eyes as to the amazing range of things going on in this field in the USA. He highlighted the many ways slag can be used – I had not previously heard about feeding slag into cement kilns and getting 7% CO2 reduction. He also highlighted the major issue of rationalising regulation. Lastly, his encouragement that we can be sustainable and have fun was great.

Justin Moss from RTA NSW highlighted that it is important to translate the broad sustainability principles into practical actions. He showed how RTA is using slag

in many ways.

Peter Poulet showed us how we can learn from the past to build creative futures.

David Moorhead stressed the importance of getting Standards right, and the need for RD&D investment to underpin them.

James Trezona showed the limitations of some green building rating schemes in regard to concrete, and argued for more sophisticated approaches based on performance rather than prescription.

Daksh Barwega reminded us that we do have a lot of practical experience with slag-based materials extending over many decades: we can learn from this experience, and don't have to wait. In particular he emphasised that applying compressive strength as a key criterion constrains innovation.

The workshops brought out a number of significant issues: there is rapid change. The market share of green buildings and

products is growing.

- we need to build in mechanisms to learn from experience
- we also need to educate and build awareness in the community, with customers, and with regulators
- regulations around Australia superficially look similar, but different jurisdictions vary their interpretation and application, adding to costs and complexity
- the need to clarify definitions of 'waste' – maybe only when it is going to disposal
- the need to educate and benchmark against best practice
- the need to recognise potential for slag use
- recognising there is a lack of awareness of the benefits of slag use

The best way of doing this is to look at the fundamental services that are being provided and how much and which material is really needed to deliver that service.

## AUSTRALASIAN NEWS

**SUNSTATE CEMENT IN QUEENSLAND** has a new management team; Gareth Ward, Khiet Tran and Todd McGurgan.

**GENERAL MANAGER GARETH WARD** joined



Sunstate us from Adelaide Brighton Ltd where he has held the role of National Operations Manager, Cement and Lime for the last two years. Prior to

that Gareth was the Operations Manager for Cockburn Cement in Western Australia. Gareth has a Bachelor of Engineering and 20 years operational experience in both the United Kingdom and Australia, the bulk of which has been gained in the cement industry.



**Khiet Tran** joined Sunstate Cement in March this year as the Technical Manager. Prior to joining Sunstate I was working with Adelaide Brighton Cement at

Birkenhead in South Australia as the Process Engineer – Cement.



**Todd McGurgan** is the Technical Services manager. He has worked within the construction industry for the past 22 years, and have held a variety of positions within that time for the past 3 years held the role of providing customer technical support working within the cement industry.

## INTERNATIONAL

**THE 5TH EUROPEAN SLAG CONFERENCE ORGANISED BY EUROSLAG** – The European Slag Association, will be held from September, 19th to 21st 2007 in Luxembourg-city. As a country with a strong steel industry background, Luxembourg has been elected to be the European Capital of Culture in 2007, implying that a lot of international events will happen there.

Key points will be the development of the European legislation and standards, along with a consistent involvement in environment protection.

24 papers will be presented by recognised specialists from Europe, USA and Japan, distributed in four sessions:

1. Legislation and standardisation
2. Quality management systems
3. Applications
4. Environmental affairs

In addition to the papers, EUROSLAG has organised an attractive visit to the Arcelor-Mittal steel plant in Belval and to the modern and powerful slag processing facility of Cloos S.A. in Differdange.

Contact [www.euroslag.org](http://www.euroslag.org)

### 3RD GLOBAL SLAG CONFERENCE, 19-20 NOVEMBER 2007, ISTANBUL

The main themes for the 3rd Global Slag conference and exhibition will be: Adding Value To Slag. Subject considered will be: Global slag production: markets & buyers Global slag overview, Current status of the global iron and steel industry, Opportunities for profits in the Middle East Emissions trading. Status of the global cement industry Chemical and mineralogical optimisation of slag.

For more information and an updated version of the conference programme visit [www.globalslag.com](http://www.globalslag.com)

## SLAG – “THE ULTIMATE RENEWABLE MINERAL RESOURCE”

The video has proved to be very useful to many members. New additional footage has been incorporated demonstrating the beneficial properties of slag in various large-scale projects completed in recent years. The video (15 minutes duration) outlines slag’s historical beginnings through to the various types of slag produced in a



modern production process today.

Copies are available to members at a cost of \$15.00 each and to non-members \$20.00 plus postage and handling.

## CD TECHNICAL RESOURCES

ASA produces a number of high quality technical guides (i.e. the new – “A Guide to the use of Iron and Steel Slag in Roads” and the “Guide to the Use of Steel Furnace Slag in Asphalt and Thin Bituminous Surfacing”) bulletins, newsletters and general industry information on current issues. The Education and Promotion

Committee has developed a Technical Compendium on CD; an invaluable readily accessible reference tool for engineers, specifiers, consultants, government authorities, and slag users: *A limited number of hard copies are also available.* Copies are available to members at a cost of \$15.00 each, non members \$20.00 – plus postage and handling. Updated CD’s will be available for registered users as new material is added.



## Subscription Form: Connections

*I received connections via a third party, please:*

Add me to your mailing list    Send me only electronic copies via email    Send me hard copies only

**I WISH TO PURCHASE:**  ASA Video @ \$15.00\* x \_\_\_\_ Qty    ASA CD @ \$15.00\* x \_\_\_\_ Qty

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\*Plus postage and handling • Inclusive of GST.