

## In This Issue

<b>ALCAS Committee News</b> The latest news from the ALCAS Committee	p1
<b>ALCAS Roundtable</b> Summary of the latest ALCAS Roundtable	p2
<b>AusLCI</b> An update on the AusLCI database	p3
<b>Construction Materials and AusLCI</b> An analysis of AusLCI and the construction industry	p5
<b>Recycling the Life Cycle</b> The 'real' application of LCA	p6
<b>Sustainability: Putting the Pieces Together</b> Sustainability frameworks at the WSAA	p7
<b>Corporate Licensing</b> World first licensing for Victorian businesses	p8
<b>2008 Conferences &amp; Events</b> Information on the latest industry events	p9
<b>Membership Application</b> Become an ALCAS member or renew your current membership	p10

## ALCAS Committee News

Welcome to the December edition of the ALCAS Newsletter.

As this is our last publication for 2007, the ALCAS committee would like to wish all members and their families a happy and enjoyable festive season.

### ALCAS Annual General Meeting

ALCAS held its Annual General Meeting on the 30th of October 2007. A new committee was elected, and the officers were elected at the first Committee meeting directly following. The new ALCAS Committee of Management is:

Greg Peters	(President)	(02) 9385-5097
Nigel Howard	(Vice-President)	(02) 9938-6011
Alastair Woodard	(Secretary)	(03) 9611-9058
Lisa Opray	(Treasurer)	(03) 9514-1582
Tim Grant		
Paul Koltun		
Sean Shiels		
Jean Wiegard		

Attendees at the AGM also discussed the timing for the next ALCAS LCA Conference. As a number of significant related conferences were scheduled for 2008 it was decided the best date for the Next ALCAS conference would be February 2009. Tim Grant volunteered to facilitate a conference steering committee to commence the planning and organisational process.

Attendees at the AGM also voted on a proposed Rule change which would expand the current Committee of Management from eight to ten members and allow for the secondment of special expertise when needed. The proposed change was carried unanimously.

### ALCAS Roundtable

The latest ALCAS Roundtable was also held on 30th October 2007, examining progress in LCA tools for buildings. The international keynote speaker was Dr Harry van Ewijk from IVAM in the Netherlands who developed a building LCA tool called Ecoquantum.

For a full run down of the Roundtable, see the article on page 2.

## About ALCAS & LCA

**The Australian Life Cycle Assessment Society (ALCAS) is a professional organisation for people interested in the practice, use, development and interpretation of Life Cycle Assessment (LCA).**

**The society is a not for profit organisation with individual and corporate members.**

**The purpose of the society is to promote and foster the responsible development and application of LCA methodology in Australia and internationally, and to represent the Australian LCA community in the international arena.**

**The society is also aimed at making a positive contribution to Ecologically Sustainable Development (ESD).**

**For further information visit: [www.alcas.asn.au](http://www.alcas.asn.au)**

## ALCAS Roundtable: Progress in LCA Tools for Buildings Tim Grant

A roundtable workshop was held by ALCAS on the 30th October to look at progress in LCA tools for buildings. The international keynote speaker was Dr Harry van Ewijk from IVAM in the Netherlands who developed a building LCA tool called Ecoquantum. Harry presented many of the strengths and weaknesses of the tool which was developed nearly 10 years ago.

The tension between simplicity and details was brought out, and the evolution of the tool involved learning from detailed tools and generating more simple tools which could be used for broader applications by non-expert users.

The focus of the roundtable then shifted to Australian tools. Rob Rouwette from RMIT Centre for Design presented data on a Building and Material Assessment Scorecard (BAMS) project. This project aims to produce comparative scorecards for building assemblages based on common functional description. BAMS has some similarities to the UK Green Guide on specification but also takes an Environmental Product Declaration Approach, particularly for individual building materials.

The first stage of the BAMS project is due for completion at the end of 2007, when RMIT will have developed the framework and proved the concept with a small group of assemblages. The next stage of the project is to operationalise the framework with more assemblages and materials and a national focus.

The second presentation was by Stephen Egan and Delwyn Jones from the Collaborative Research Centre for Construction Innovation on 'LCADesign', a CAD-linked LCA tool for the construction sector. The tool has been under

development for a number of years and is now in a prototype, having been trialed on building projects in Europe, the United States and Australia. The tool has great potential as it forms part of the overall Building Information Management (BIM) system that can help with specifying, costing and design-checking buildings. The link between operational energy models and materials assessment is still to be developed for the tool, meaning that currently whole-of-building assessment is only possible with separate operational energy modelling.

The third presentation was by Nigel Howard from BRANZ, and it described a government and industry funded project to facilitate the building and construction sectors participation in the AusLCI. This support will include training and consensus-building around issues in LCA, the development of a database on building component service lives and the production of a weighting procedure for environmental impact areas in Australia, similar to that used in the BRE tool in the United Kingdom.

Tim Grant then presented on the Australian Life Cycle Database initiative (AusLCI) project in terms of its structure, current progress and plans for the future. The technical committees are currently actively seeking consensus on the data guidelines and allocation approaches for the database. Working groups have begun to meet on water and are set to begin to meet on construction materials. For participation and to keep up to data on the AusLCI project visit the wiki site at [www.auslci.alcas.asu.au](http://www.auslci.alcas.asu.au).

There was discussion through the day as to the need for these initiatives to lever off each other rather than be in competition. All the tools presented play a different role in the decision-support chain, yet the underlying basis for most of the assessment is LCA data, so the completion of this inventory project was a major priority for participants.

## Membership

The benefits of ALCAS membership include:

Discounted access to ALCAS events such as conferences and roundtables

50% discount on subscriptions to the International Journal of Life Cycle Assessment, where ALCAS has a column

Quarterly ALCAS newsletter with information on ICA developments, events and committee news.

As an ALCAS member you can:

Be part of the Australian LCA community to keep abreast of, and have input into national and international issues in LCA and related environmental tools and methods.

Help in the advancement and appropriate application of LCA and associated tools to create a more sustainable society.

## AusLCI Update

Alastair Woodard & Sean Shiels



Activities under the AusLCI initiative to develop a national Life Cycle Inventory database are well underway with the AusLCI Interim Steering Committee (ISC) and the Technical Sub-committees meeting regularly.

### AusLCI Interim Steering Committee (ISC)

The main focus for the ISC has been in setting up the structure and frameworks for the project development and the engagement of stakeholders. The aim is to have as wide an involvement as possible from all Australian industry sectors, ie: water, transport, energy, building & construction, manufacturing, mining, agriculture, etc.

To date there has been significant interest by state and federal government departments and the building & construction sector who have recently secured grant funding from AusIndustry (see article on page 5).

A major focus for the ISC over the next few months will be in bringing other sectors

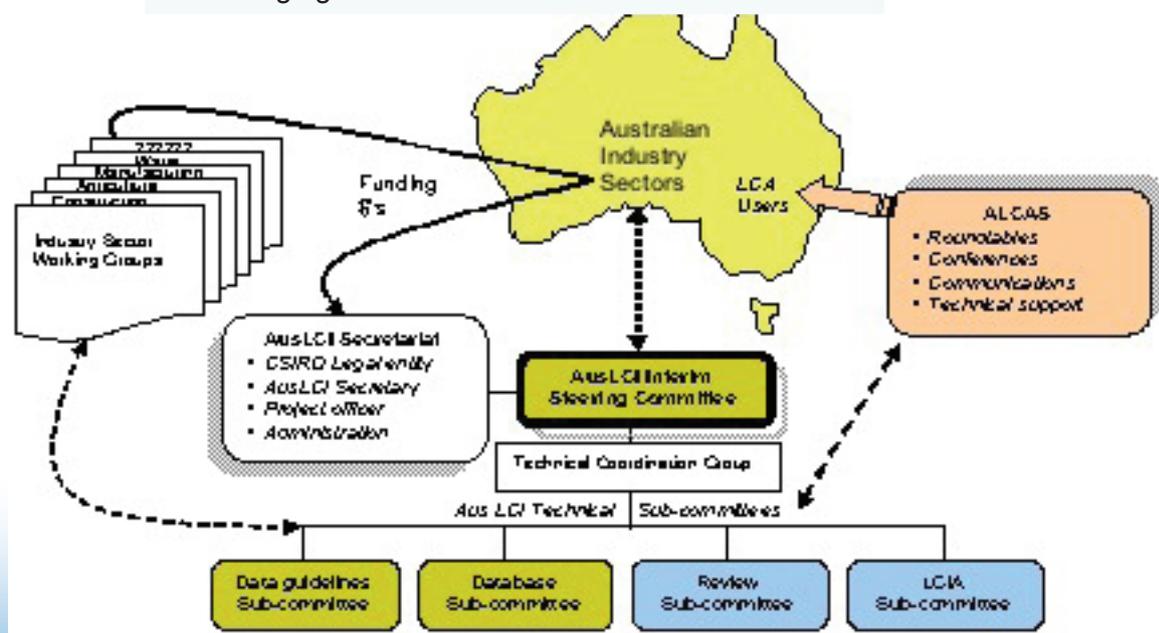
on board and securing further funding to ensure that the required activities are undertaken in a timely manner.

The ISC has also commissioned Deloitte to develop a Business Plan and a range of framework and funding options that propose how the AusLCI database might be governed, managed and maintained into the future. A stakeholder workshop on this issue is planned for the 12th of December and the final report is due from Deloitte at the end of January 2008.

### AusLCI Technical Sub-Committees

The AusLCI technical sub-committees have now convened and are meeting regularly. A major focus at present involves the planning of activities and outputs for 2008. The current technical sub-committees and their Chairman are:

- Data Guidelines  
Mr Tim Grant 0408 104 97
- Allocation  
Mr Rob Rouwette 03 9925 9082
- Quality Assurance  
Dr Rajah Tharumarajah 03 9252 6000
- Database Development  
Dr Rajah Tharumarajah 03 9252 6000
- Inventory Review  
Dr Paul Koltun 03 9252 6000
- Life Cycle Impact  
Dr Greg Peters 02 9385-5097



## Our Objectives

### The specific objectives of ALCAS are:

To promote and foster the appropriate of LCA in Australia

To promote and foster the responsible development of LCA methodology in Australia with consideration of international initiatives and commensurate with local conditions

To foster links with the international LCA community

To organise a regular LCA Roundtable to facilitate information exchange and discussion

To contribute to national policies, positions and approaches on LCA

To increase awareness of LCA among stakeholders including industry, academia, government, practitioners and the public.

*from previous page...*

If you are interested in finding out more about any of the technical sub-committees or participating in their activities, then please feel free to contact the relevant Chairman to find out how you can become involved.

A new Technical Coordination Group (TCG) has also recently been formed comprising the Chairs of the various Technical Sub-Committees. The TCG is responsible for the coordination of the various project groups and the support and exchange of technical information between these groups and the ISC.

### Industry Sector Working Groups (ISWGs)

A number Industry Sector Working Groups (ISWGs) have also been established. Whereas the Technical Committees are responsible for the overall generic technical and methodological aspects of the AusLCI database, the ISWGs are responsible for the collation of specific sector inventory information.

This information will be used to populate the inventory which will allow the development of environmental profiles of the Australian products and services included in the initiative.

At present there are 11 ISWGs, which are currently awaiting sign off by the ISC:

- Agriculture
- Chemical Industries
- Construction
- Energy
- Metals (sub-groups: ferrous, non-ferrous)
- Mining & Quarrying
- Plastics
- Transport
- Waste Management
- Water Services
- Wood

There is a great deal of enthusiasm in the AusLCI Initiative from industry sectors, however the project has limited resources and is unable to address all industrial sectors at this stage, and a rational and coordinated approach must be adopted.

It has therefore been decided that there will be a minimum of three members in any of the ISWGs and the commencement of any group's activities must be signed off by the TCG. This will ensure that the ISWGs adopt a consistent approach to their working activities and the TCG and ISC are kept abreast of developments in each sector.

It is expected that the membership numbers of each of the ISWG will reach a point where they become unmanageable and a number of subgroups will be required under each of the primary ISWGs headings (e.g. agriculture, construction, energy, etc). When this is the case the management of the ISWG subgroups will be carried out by the primary ISWGs, which will consist of the chairs of the subgroups. The chair of the primary ISWG will report directly to the TCG.

It is envisaged that as the AusLCI Initiative project develops and initial ISWG's disband, their expertise will be utilised in the development of new ISWGs. For example, those members of the ferrous metals ISWG could be utilised in the Mining and Quarrying ISWG (e.g. ferrous metal mining) or Waste Management ISWG (e.g. ferrous metal recycling).

This will ensure a consistent approach continues and will minimise the demand on resources and management.

*For further information about the ISWGs contact Dr Sean Shiels (sean.shiels@epa.vic.gov.au).*

## International Conferences

**SETAC Europe  
 14th LCA Case  
 Studies Symposium,  
 Sweden, 3 - 4  
 December 2007**

**6th Workshop  
 on LCA for  
 APEC Members  
 Economies, Japan, 6  
 - 7 March 2008**

**2nd OECD  
 Workshop on  
 Sustainable  
 Materials  
 Management Israel,  
 7 - 9 April 2008**

**2nd International  
 Seminar on Society  
 and Materials,  
 France, 24 - 25 April  
 2008**

**SETAC Europe 18th  
 Annual Meeting,  
 Warsaw, Poland, 25  
 - 29 May 2008**

**5th SETAC World  
 Congress, Sydney,  
 Australia, 3 - 7  
 August 2008**

**Development  
 including Product  
 Life Cycle  
 Management,  
 Chengdu, China, 4  
 - 6 August 2008.**

## Construction Materials and AusLCI

Nigel Howard



It is generally acknowledged that the procurement of materials and products for the construction and fit-out of buildings is currently being driven by overly simplistic considerations and claims like “recycled”, “recyclable”, “carbon neutral”, “low ecological impact”, “low embodied energy”, “renewable”, “low VOC”, “locally sourced”.

These single issues may all contribute to the overall benefits of any particular material or product choice, but on their own may be misleading. In addition, choices may be made inappropriately if products with the same functional performance are not being compared.

Furthermore, the operational implications of a product choice can often prove to dominate the impacts of a product – for example, a higher impact smooth bore pipe at installation might reduce the pumping energy needed compared to a lower impact rough bore pipe at installation.

The materials and products industries are keen to move toward a full LCA based assessment of materials and products on a “Level Playing Field” basis. The construction sector is particularly motivated due to the fact that buildings have such long lives with many replacements of some materials and products, but with others lasting the life of the building.

The Building Products Innovation Council (BPIC) and Aus-Industry (through the Cooperative Innovation Program (ICIP)) have approved funding to the tune of \$1.6M over 3 years in support and supplementation of the ALCAS/CSIRO

AusLCI project.

This funding will assure the comprehensive engagement of the construction materials and products industries in the AusLCI project.

The funding will be used to facilitate understanding of and contribution to the development of the Life Cycle Inventory and Impact Assessment methodologies, and will ensure that good LCI data is provided from the construction materials and products industries into the AusLCI database.

In addition, the funding will be used to generate weighting factors for the relative importance of different environmental impacts across different climate zones, also taking account of different cultural perspectives.

These weighting factors will provide a basis for Australian eco-points or eco-indicator scores, which will combine the many impacts from a Life Cycle Assessment into a single score.

The weighting factors will also be available more broadly to policy makers and to those developing environmental assessment and rating tools such as Green Star, NABERS, Steps, SDS or regulatory tools such as BASIX.

The project will also research the replacement lives of materials and products in buildings. Often data on the durability or warranty period is taken as the life of a product or material, whereas in practice structural components often have much longer average lives than the warranty period (buildings last on average over 100 years). In contrast, many other products are replaced at much shorter intervals than their durability life – carpet designed to last 10-15 years may frequently be replaced after 3-5 years because of fashion changes or business churn.

*continued next page...*

## International Conferences

**Conference on Advances in Product Development and Reliability including Product Life Cycle Management, China, 4 - 6 August 2008**

**SETAC North America 29th Annual Meeting, Florida, USA, 16 - 20 November 2008**

**LCM 2009, Cape Town, South Africa, 6 - 9 September, 2009**

**6th International Conference on Life Cycle Assessment in the Agri-Food Sector, Zurich, 12 - 14 November, 2008**

**SETAC North America 30th Annual Meeting, Louisiana, USA, 20 - 24 November 2009**

**CILCA 2009, Santiago, Chile, 2009**

**ALCAS LCA Conference Australia February 2009**

This project will try to see past these apparent replacement intervals to understand the real replacement (obsolescence) periods. The data will be available to those developing life cycle costing (LCC) tools as well as those conducting LCA studies or developing LCA tools and methods.

Once in place, the consistently compiled LCI data, the impact assessment methodology, the replacement lives data and the common set of weightings for different locations in Australia will provide the toolbox of basic information for comprehensive LCA based assessment of materials, products, elements, buildings

and infrastructure.

These can in-turn be used in LCA based tools and methods for buildings (e.g. LCA Design), for elements of buildings (e.g. BAMS), for products, for services including for environmental product declarations or eco-labels.

### Recycling the Life Cycle

The most unfair thing about life is the way it ends.  
 I mean, life is tough. It takes up a lot of your time - and what do you get at the end of it?  
 Death.  
 What's that, a bonus?  
 I think the life cycle is all backwards.  
 You should start out dead. Get it out of the way.  
 You wake up in an old age home, feeling better every day.  
 You eventually get kicked out for being too healthy and go collect your pension.  
 When you're too young to be retired anymore, you get a job - and on your first day they give you a gold watch.  
 You work 40 years until you're young enough to enjoy your retirement.  
 You're promiscuous, you drink alcohol, you party - so you'll know all the pitfalls and can be more responsible when you get to high school.  
 You end high school as a freshman and get to make fun of all the seniors who are just starting.  
 You go to primary school, you become a kid, you play, you have no responsibilities.  
 You become a baby, and then get to spend your last nine months floating peacefully with all the luxuries of a five-star hotel - central heating, spa, room service on tap, and larger quarters every day.  
 And finally, you finish your life as an orgasm.  
 Doesn't this make more sense?

*Attributed to comedian Sean Morey*

## Recent Events

**LCA Tools for Buildings Roundtable**  
 October 2007

**ALCAS AGM**  
 October 2007

**ALCAS Committee Meetings**  
 February, March, May, July, October 2007

## Upcoming Events

**CIRP-LCE 2008**  
 17-19 March 2008  
[www.cirp.net](http://www.cirp.net)

**AIP National Conference**  
 12-13 June 2008  
[aipack.com.au](http://aipack.com.au)

**SB Melbourne 08**  
 21-25 September 2008  
[www.sb08.org](http://www.sb08.org)

## Current Projects

**ALCAS is working with the CSIRO to develop an Australian Life Cycle Inventory Database.**

**For more information about this project visit the AusLCI wiki at:**

[www.auslci.alcas.asn.au](http://www.auslci.alcas.asn.au)

## Sustainability: Putting the Pieces Together

Greg Peters

Sometimes the challenge in getting better environmental outcomes is not ensuring an LCA gets done, but connecting it with the overall decision process. Through a collaboration between the Centre for Water and Waste Technology at UNSW, the Sustainable Water Division of the NSW Department of Commerce and Chalmers Industriteknik in Sweden, a framework was developed to help the Australian water industry enhance the sustainability of its operations.

An ARC linkage grant with the Water Service Association of Australia (WSAA) enabled the team to develop a "Sustainability Framework" for evaluating alternative options for urban water systems. This includes large-scale options for cities as well as configurations of water sensitive urban developments or single high rise developments.

This methodology for evaluating overall sustainability of alternative options reflects the range in alternative tools and approaches currently being used. These tools include things like levelised cost calculation, life cycle assessment and quantitative risk assessment. We all know sustainability includes a consideration of environmental, economic, and also social aspects.

So while it is important to apply such holistic tools, their incorporation in a dialogue with the stakeholders is critical to avoiding the old "decide, announce, defend" debacle in infrastructure development.

Since completion of the initial project, WSAA and UNSW have continued this work, with the aim of extending the application of the Framework. UNSW reviewed the technical and consultative process used by Gold Coast Water to develop its strategic plan for the future

of water services. The Board of WSAA endorsed the Framework in August and WSAA is in the process of turning the paper and the case study into an Occasional Paper for public release in early 2008.



The Framework has also become the basis for teaching sustainable planning to a new generation of engineers. Students in a fourth-year elective subject at UNSW apply the Framework as part of a project that hones their practical engineering skills in a simulated professional consulting environment.

Thinking globally but acting locally, students in 2007 prepared an analysis of alternative rainwater tank designs for the Randwick City Council (RCC) Administration Building. This is facilitated by RCC's Sustainable Cities Initiative, an innovative agreement that fosters collaboration between UNSW and the Council. Now in its third year, the agreement facilitates the sharing of ideas, projects and research between the two organisations.

In this case it is giving the students the chance to use the Administrative Building as a practical basis for learning to employ the sustainability framework, and giving the Council the possibility of broadening their investigation of water cycle management options.

*Photo: Randwick City Council Administration Building. (Photo courtesy of Randwick City Council Library and Information Service)*

## For More Information

Looking for further information on Australian and international LCA issues and developments?

The following journals provide interesting and relevant articles on LCA and related fields.

**International Journal of LCA**

**Journal of Cleaner Production**

**Journal of Industrial Ecology**

Remember, ALCAS members are entitled to a 50% discount on subscriptions to the International Journal of Life Cycle Assessment.

For links to these journals, along with other relevant resources, log on to the ALCAS website at [www.alcas.asn.au](http://www.alcas.asn.au) and click on 'weblinks'.

## Corporate Licensing: World-first for Victorian Businesses

Sean Shiels

EPA Victoria is taking licensing in a new direction. Companies holding two or more EPA licences can now voluntarily amalgamate these into a single 'corporate licence'. A corporate licence does not remove compliance requirements, but streamlines all operating and site discharge limits and waste acceptance conditions into a single document. This provides businesses with a consolidated understanding of their environmental requirements, reduces the administrative burden and simplifies compliance reporting into a single 'performance statement'.

EPA licenses industrial and commercial activities that are scheduled in State regulation. Scheduled activities include those that produce waste discharges or emissions, or those that handle waste or substances that present a danger to the quality of the environment. There are approximately 1000 EPA-licensed sites in Victoria and more than 100 businesses hold more than one EPA licence. Water authorities, milk processing factories and food and beverage plants represent a large portion of these multiple licence holders.

Traditionally, licences have been driven by a primary focus on managing the impact of emissions. While emissions control will continue to be a core objective of the licensing program, Corporate Licences can also include non-regulatory projects developed in partnership between EPA and business to deliver greater outcomes for the environment and business at the same time.

This offers the prospect to take account of all a licensee's potential impacts on the environment and opportunities to improve environmental performance cost-effectively, including the use of resources such as energy, water and materials, and, operational activities encompassing those environmental impacts not traditionally

captured in a licence; for example, working on trade waste with customers, or investigating the procurement of supplies or distribution of products.

The new Corporate Licence framework will build in objectives and measures for reductions in these additional areas of environmental impact, and could include the use of tools and mechanisms such as life cycle approaches (e.g. Life Cycle Assessment) and offsets. These projects are developed cooperatively with all levels of the business involved in identifying risks and opportunities to ensure long-term business sustainability.

In this way, the new licensing approach provides a means for EPA to achieve its strategic objectives of increasing resource efficiency, reducing emission impacts and benefiting the economy. Corporate licences will significantly reduce compliance costs. We expect they will generate an annual saving of \$15 million to Victorian industry and reduce the number EPA licences by up to 30 per cent.

Goulburn Valley Water (GVW) has been issued the world's first Corporate Licence. GVW is a regional water business, managing water supply and wastewater treatment in Victoria's food bowl – the Goulburn Valley. Prior to amalgamation, GVW held 26 EPA licences, totalling 226 pages of licence requirements. Its new corporate licence is an eight-page document that will save the business \$50,000 a year in administration. It includes a range of projects to cut costs for the business and benefit the environment, including:

- a carbon neutral strategy;
- projects to reduce water use and trade waste by GVW customers; and,
- assessment of existing ways of working to identify resource efficiency and offset opportunities.

For further information please contact the EPA Victoria Life Cycle Unit on (03) 9695 2589 or [corporate.licence@epa.vic.gov.au](mailto:corporate.licence@epa.vic.gov.au).

## 2008 Conferences

### LCE 2008 17-19 March 2008

ALCAS is a supporter of the 15th CIRP International Conference on Life Cycle Engineering: LCE2008. This conference, hosted by the University of NSW and the Institution of Engineers, Australia, will cover topics in life cycle assessment, life cycle engineering, manufacturing, waste management, agricultural products, energy management and other topics of relevance to the advancement of LCA methodology and its application in Australia. This series of conferences generally attracts over 150 local and international experts. Early bird registration is about to open. The latest information is available at [www.lce2008.com](http://www.lce2008.com)



### AIP National Conference 12-13 June 2008

The Australian Institute of Packaging's National Conference will be held at Luna Park, Sydney from the 12th to the 13th of June 2008. Following a number of highly successful topical seminars over the past few years, the AIP will approach the 2008 National Conference to deliver a holistic program about the latest packaging technology related issues in the delivery of products to consumers with the theme of Climate of Change: Towards a sustainable packaging industry.

The 2008 AIP National Conference will be advancing discussions in sustainable packaging and looking at continuous improvement in the environmental performance of products through the entire life cycle from raw materials to landfill.

### SB08 21-25 September 2008

SB08 Melbourne will be an international meeting on sustainable building strategies, vision, practices and policies. More than 2,500 delegates from around the world will convene in Melbourne, creating opportunities for exchange, business and professional development for the many professionals with an interest in a sustainable built environment. ([www.sb08.org/](http://www.sb08.org/))

SB08 has a multifaceted program that builds strong and effective linkages across stakeholder groups to advance sustainability knowledge and practice through market and industry transformation. SB08 Melbourne will continue a traditional focus on technical developments and case studies. Site visits of leading-edge Australian commercial, residential and industrial developments are planned.



**For details of international conferences in 2008 & 2009, see pages 5 and 6.**

## **Application for membership to the AUSTRALIAN LIFE CYCLE ASSESSMENT SOCIETY**

I \_\_\_\_\_  
(name and occupation)

of \_\_\_\_\_  
(address)

desire to become a member of the Australian Life Cycle Assessment Society

on behalf of \_\_\_\_\_  
(organisation - for organisational membership only)

In the event of my admission as a member, I agree to be bound by the rules of the Society for the time being in force.

Signature of Applicant \_\_\_\_\_

Date \_\_\_\_\_

Tick membership type:      Organisational   
   Individual

I \_\_\_\_\_ a member of the society,

nominate the applicant, who is personally known to me, for membership of the society.

Signature of Proposer \_\_\_\_\_

Date \_\_\_\_\_

**POST TO ALCAS, PO BOX 304, BALWYN, VICTORIA 3103**