

## Olympics and Skyspan Benefits the Community

Skyspan formed a working partnership between Skyspan and Mirvac/Lend lease for the contract to supply a series of fabric canopies at the Sydney Olympic Village. A key feature of this contract was a buy back clause, which required Skyspan to take ownership of the structures after the Olympics.



All-weather ambulance canopies, transformed an outdoor covered area for a school.

The demountable feature of fabric structures has been used as a key selling point in many temporary applications. This was further enhanced by the open D&C approach that allowed standard products or marketable shapes to be used. All these factors combined to enhance the resale marketability of these structures.

Being associated with the hugely successful Sydney Olympic games ended up being a bonus, meaning that there were no problems finding new homes for all the ex-Olympic Structures.

The use of good quality standard structures highlights the potential cost savings to any client if he wishes to relocate or on-sell them. The choice of



Four posted Gazebo: Walkway covers, transformed to be a cover at local council cricket ground.

a fabric structure adds flexibility to the client's options.

## Shade Structures Birdair - A new force in tensile membrane manufacture and design



Fox Studios, Australia.

Shade Structures Pacific, Australia and South East Asia's leading fabricator of architectural membrane structures has become a member of the Birdair Group of companies.

Birdair are the world's leading and most experienced engineering

designers for tensile membrane structures and they have been at the forefront of this technology since the beginning of their operations over 40 years ago. Birdair is world-renowned for its significant projects such as the Millennium Dome in London, Denver International Airport and the Georgia Dome. Three quarters of the sports domes in the United States of America have also been constructed by Birdair.

Now known as Shade Structures Birdair, the company continues to excel in the tensile membrane industry.

This merger of strengths offers the international architectural community the most complete and experienced team for the design, fabrication and construction of structures ranging from engineered umbrellas through to the largest of Stadiums.



The Millenium Dome, UK.

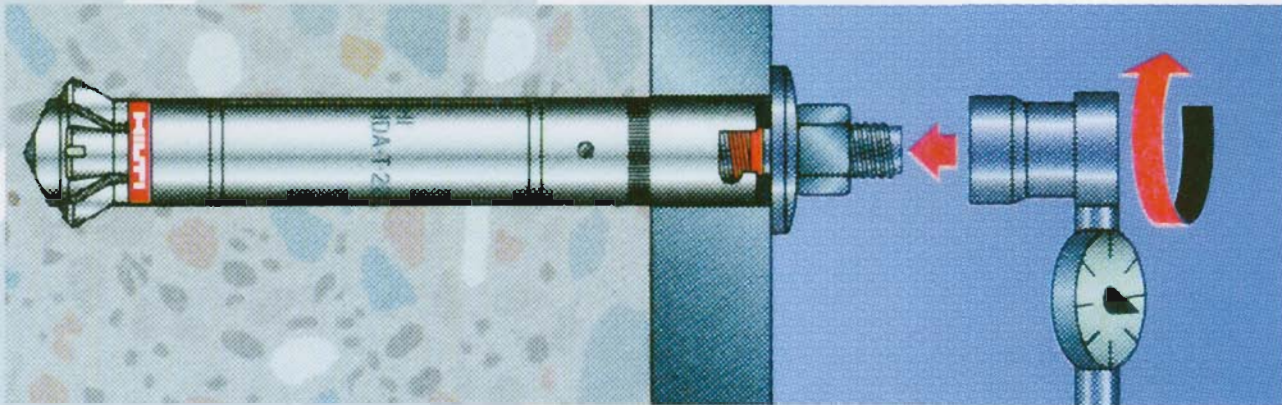


## A New Era: Hilti HDA Design Anchor versus Cast-in

Quick and easy to set, the Hilti HAD Design Anchor can take up extremely high loads but keeps installation work to a minimum. Combining quick installation with maximum security, the Hilti HDA undercut anchor ensures impressive performance under high tensile and shear forces or static and dynamic loads. The Hilti HDA offers load-displacement characteristics

comparable to those of a cast-in headed stud. In contrast to cast-in studs, however, the HDA undercut anchor provides far greater flexibility as it can be set precisely at the point where it is required. The Hilti HDA exerts low expansion pressure and is thus particularly suitable for heavy-duty fastening applications where the anchors are tightly spaced or positioned close to edges. With the new HDA, Hilti has opened

up entirely new possibilities in fastening applications. The setting operation requires little effort and makes use of a simple tool.



Anchor Rod been driven into concrete and then tightened to the specified torque.



Indtex Australia Pty Ltd was founded in 1985 by the current Managing Director, Brian O'Flaherty, with the purpose of supplying high quality coated industrial fabrics to the Australian market. As a result of Brian's previous experience with architectural fabrics, from the outset Indtex specialised in this area, immediately consolidating a long relationship with Haku (subsequently renamed Mehler Haku GmbH), the German coater with the most extensive experience in the Australian pvc architectural fabric market.

Haku had been supplying pvc architectural fabrics to the Australian market since the mid 70's, and there was certainly no substitute for this depth of experience in one of the worlds harshest climates. Some of the oldest standing structures in Australia, e.g. Townsville Soundshell - 1979, were made from Haku fabrics. Well known projects like the Travelling Bicentennial Exhibition, and Expo 88 in Brisbane, were all made from Haku fabric. The technology today has also

An advertisement for Indtex Australia Pty Ltd. The top left features the company logo and contact details: 'INDTEX AUSTRALIA PTY LTD (INDUSTRIAL TEXTILES) Indtex Australia Pty. Ltd. 4 Kembla St. Cheltenham Vic. 3192 Tel: 03 9585 1730 Fax: 03 9585 1737 Email: indtex@ozemail.com.au Website: indtexaust.com'. The main image shows large, tan-colored architectural fabrics stretched over a structure. A diagonal banner across the image reads 'Fabrics that stand the test of time'. In the bottom right corner, there is a logo for 'MEHLER HAKU GMBH TECHNISCHE TEXTILIEN'.

advanced and Mehler Haku's new proprietary weldable pvdf finishes are proving to have exceptional performance. Mehler Haku fabrics have the widest and most extensive long term performance in the

Australian market, proof of their high quality and longevity in the harsh conditions found in this region. Based with a large warehouse in Melbourne, Indtex has distributors in every State.



## Baltimore Pedestrian Bridge



Day view of Baltimore

When architects, Cambridge Seven and engineers, Buro Happold put their team together for the pedestrian bridge to the Baltimore Aquarium in Baltimore, Maryland, they looked no further than Ronstan for the stainless steel cables and rigging required.

Located in the heart of the historic inner harbour precinct, the 40m cable stayed bridge with its two masts and 24 stainless steel 3/4" cables, quickly became a focal point for an area of the city full of bars, restaurants, clubs and boutique stores.

Ronstan service the North American market from their office and warehouse in Largo, Florida.



Night view of Baltimore Aquarium.



3/4" Seafest Turn Buckles.

## The HeatRay Umbrella System

Celmeq International, an Aussie company, has developed a revolutionary World-First, heating and lighting system for outside umbrellas. Established over 20 years ago, Celmeq International, specializes in product design, development and manufacturing of commercial and outdoor heating equipment. The innovative HeatRay Umbrella System offers exciting solutions, meeting the challenges of outdoor leisure and dining with all-weather protection and comfort.

The system employs purpose developed Electric Radiant Panel Heaters, which are designed to form an integral part with the HeatRay Umbrella. The Radiant Panels can also be ceiling suspended, wall mounted and used for endless task heating applications. Unlike conventional Panel Heaters, the HeatRay system operates at a higher surface temperature, utilising a unique and highly efficient radiant heat design.

The HeatRay system provides evenly distributed, soft radiant heat to warm people, without heating empty spaces or the surrounding air which blows away. The warmth of the heatrays is

also absorbed into all solid objects, such as table tops and all implements, which become comfortable to touch, as well as helping to keep the food warm on the table.

The lighting system is also fully integrated with the HeatRay Umbrella. The fabric of the umbrella is illuminated with indirect "warm colour" diffusion. It accentuates the attractive appearance of the umbrella, and provides pleasant general lighting.

The HeatRay Umbrella itself is a foldable permanent structure, purpose built, utilising state of the art tensile membrane technology to enable the final product to withstand all weather conditions, including high wind loads of up to 120 km/hr. Optional modular wind brake side covers and umbrella links are also available.



Alfresco ATS equipped with custom designed Lights and Heaters.

The HeatRay Umbrella System promotes a healthy and warm "Open Dining" environment extending outdoor trading hours in an inviting and relaxes atmosphere, especially when the weather cools down.



## New LSAA Committee



Dr. Kourosh Kayvani

Dr Kourosh Kayvani is an Associate of Connell Mott MacDonald, a leading international consulting firm, and is heading his company's Advance Analysis Group in Australia and New Zealand. He has extensive experience in analysis and design of complex structures of long span and/or high-rise nature, and has authored many articles on these subjects.

His involvement with lightweight structures covers areas such as lightweight canopies made of steel and glass, long-span roofs (often involving cables), cable-stayed bridges and

aircraft hangars.

Kourosh has been involved in design of many lightweight sporting structures, including the cable-supported roofs of the Showground Show-ring and the Hockey Centre both at the Sydney 2000 Homebush site.

Most recently, Kourosh has acted as a technical leader on all aspects of analysis and design of the roof of the new Wembley Stadium in the UK, a toroidal-shaped partially-retractable roof supported by cables hanging from a 300m spanning lattice arch.

## CONFERENCES

### LSAA AGM/SEMINAR

20 September 2001  
Sydney, Australia  
MSAA/LSAA 20th Anniversary  
Dinner

### 3rd INTERNATIONAL SYMPOSIUM CONFERENCE - Earthquake resistant engineering structures

4 September 2001  
Malaga, Spain.

### IFAI Expo 2001

18-20 October 2001  
Nashville, Tennessee USA  
Industrial Fabrics Association  
International.  
Further enquiries: Conference  
Management Department  
1801 County Road B W, Roseville,  
MN 55113-4061 USA  
Ph: 651/222 2508 or  
800/225 4324  
Fax: 651/631 9334  
Email: generalinfo@ifai.com  
Web: www.ifai.com

### LSAA CONFERENCE

October 2002  
Melbourne, Australia.

LSAA Committee		Phone	Fax	Email
Malcolm Barr	President/Co Treasurer	(03) 9555-5711	(03) 9555-1541	malcolm.barr@pacific.skyspan.com
Murray Higgs	Vice-Pres	+64(9)837-235	+64(9)837-2354	structurflex@clear.net.nz
Rowan Murray	Secretary/Co Treasurer	(03) 9598-9588	(03) 9597-0283	rowanmur@ronstan.com.au
Joseph Dean	Committee	(07) 3229-1183	(07) 3221-7088	joseph@wadeconsult.com
Richard Hough	Committee	(02) 9320-9320	(02) 9320-9321	richard.hough@ARUP.com.au
Richard MacDonald	Committee	(02) 9699-8933	(02) 9699-8932	richardm@tensilestructures.com
Kourosh Kayvani	Committee	(02) 9465-5592	(02) 9465-5598	Kayvanik@conwag.com

This newsletter is produced by the Lightweight Structures Association of Australasia.

Please address enquires to:



LSAA Secretary - Rowan Murray  
c/o Ronstan International Pty Ltd  
Tel: +61-(0)3-9598 9588  
Fax: +61-(0)3-9597 0283  
email: rowanmur@ronstan.com.au

Newsletter Editor - Richard MacDonald  
c/o Shade Structures Birdair  
Tel: +61-(0)2-9699 8933  
Fax: +61-(0)2-9699 8932  
email: richardm@tensilestructures.com