

The Editor: Kevin McCue
ASC Canberra ACT 2601
asc@netspeed.com.au
Secretariat: Barbara Butler
b.butler@eng.unimelb.edu.au
fax: 61 (0)3 8344 4616



AEES is a Technical Society of
IEAust The Institution of Engineers
Australia and is affiliated with IAEE

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AEES Newsletter

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President's Column

To all our members, on behalf of the management committee, I! would like to send "Season's Greetings" and wish you all the best! for the new year.! In talking with delegates at our recent annual! seminar and AGM, it struck me as to how everyone (regardless of! where they live and for whom they work) these days seem to have! little time for anything but their "core business".! It makes running! annual conferences and similar activities that rely on the volunteer! extremely difficult.! For that reason, I am even more indebted to! members for their assistance in keeping the Society thriving.! I! hope that everyone has a good chance to "catch their breath" over! the coming holidays and I look forward to next year and! progressing the aims of the society; in particular the issues! highlighted in this year's annual conference.! (For the benefit of! those who were unable to attend this year, I have very briefly! summarised what I think, besides the good fellowship and renewal! of friendships and contacts, were the major outcomes of the! conference.

Till next year, all the best.

Mike Griffith

**Key outcomes of the 2002 Conference
17-18 October 2002**

The theme for the 2002 Conference was "Total Risk Management in the Privatised Era" and was well supported with 33 papers presented including keynote papers by Bruce Esplin (Victoria's 1st Emergency Services Commissioner) and Jonathon Abrahams (Emergency Management Australia) and invited papers by David Brunsten (immediate past president of New Zealand Society for Earthquake Engineering), Bruce Bolt (Professor Emeritus, University of California at Berkeley) and Arch Johnston (Centre for Earthquake Research and Information, Memphis).

Four key findings:

- Emphasis for emergency services managers is shifting from "response" to "mitigation/prevention".
- A working party is being formed to investigate ways in which the earthquake engineering society can better support emergency managers at the national, state and local levels.
- While earthquake risk for individuals and government is relatively small, it is the largest component of risk for the reinsurance industry in Australia.
- Given the small amount of funding available for earthquake engineering research, it should be better coordinated to ensure the public gets the maximum "bang for the buck". Jonathon Abrahams has offered the support of EMA in this regard. The AEES may act as the convenor/coordinator with the EMA as a conduit to the federal government and possibly other funding bodies.

Mike Griffith

Chair, Conference Organising Committee

AGM 2002

Adelaide, 17 October 2002
PRESIDENT'S REPORT

Welcome to the 2002 AGM.

I have been commenting on activities over the course of the year in the newsletters. However, some highlights and recent developments are listed below:

- The Executive, in their first year, has been primarily occupied with the organization and hosting of this year's Conference. In following up the push by the previous executive to establish a national register of earthquake engineers with Emergency Management Australia, the theme for the 2002 AEES Conference was chosen to be in the area of Total Disaster Management. It is hoped that an outcome of the 2002 conference will be in the form of clear directions as to how the Society and its membership can more effectively engage and support the emergency management sector at the national, state and local levels.
- Five applications for the 2002 Research Scholarship were received and assessed by all members of the AEES National Committee and state representatives. On the basis of this assessment, and the fact that none were awarded in 2001, the Executive decided to award 3 scholarships this year for a total of \$5,500.
- I attended the Institution of Engineers' Societies Consultative Committee meeting in Melbourne and have interacted with IEAust headquarters throughout the year with respect to the role and expectation of Societies under the IEAust umbrella. One key issue concerns the potential liability of officeholders, however, it has been decided that all society officeholders, whether members of IEAust or not, will be covered by the Institution's liability insurance. Other issues include accounting procedures (audited books), Society reporting requirements, corporate identity, and membership lists.
- Bill Boyce has continued his involvement with ANCOLD committee looking at earthquake loading of dams.

Finally, I would like to record my thanks to all the members of the National Committee for their contributions during the year, Kevin McCue for his efforts with the newsletter, Vaughan Wesson for the web page and e-mail list, and Barb Butler for managing the Secretariat. I hope that the coming year is an even better one for the Society.

Mike Griffith

Report on the 2002 AEES Conference

Four Seismology Research Centre staff members attended the conference and we all wrote brief reports. I have taken snippets from each of those reports and so acknowledge that this review could best be described as an "SRC perspective".

The conference was by any measure a great success - it was well organised and well attended, with speakers presenting talks on a range of topics. Adelaide's weather was enjoyable - even by Queensland standards! The organising committee should be congratulated - not for the weather, obviously, but for the conference! It was rather incredible that an AEES conference should include both Bruce Bolt and Arch Johnson (compliments to Geoscience Australia).

The conference theme, "Total risk management in the privatised era", was well addressed by the majority of speakers. The keynote address by Bruce Esplin was inspirational and, together with other lectures by Emergency Management Australia staff, showed a dramatic change in emergency management approach. Talks on the seismic retrofit of some of Adelaide's historic buildings and "how to handle the media" were well received.

Some of the research currently being conducted in Australia was presented in the poster display. There was a very interesting display of simple models used by PIRSA to educate school children in aspects of geophysics, seismology and earthquake engineering.

The conference dinner, at Ayers House, was a pleasant evening - with fine food and wine and a string quartet of engineering students. Bruce Bolt gave an interesting talk on his experiences during the early days of Australian seismology.

The AGM saw the announcement of the three recipients of the AEES student scholarships. The production of future conference proceedings on CD, as well as regular joint meetings with NZSEE were also discussed.

Once again Barb Butler has done a magnificent job of producing the Proceedings. I would recommend that anyone who did not attend the Conference contact Barb to get a copy. I would also urge anyone who has photos of the conference to get them scanned and forward them to Vaughan for inclusion into the Society's web page.

Congratulation to the Adelaide committee and hope to see you all next year in Melbourne.

Russell Cuthbertson

**AUSTRALIAN EARTHQUAKE
ENGINEERING SOCIETY
ANNUAL GENERAL MEETING -
ADELAIDE 17 OCTOBER 2002**

Held at Adelaide University

Welcome by President Mike Griffith

Present:

Mike Griffith, Peter McBean, David Love, Jim Wilson, Norm Himsley, Gregg Klopp, Nelson Lam, Doug Jenkins, Bill Boyce, Phil Cummins, Barb Butler, Russell Cuthbertson, Michael Asten, Mike Turnbull, John Schneider, John Wilson, Vaughan Wesson, George Walker, Amy Brown, Gary Gibson, Trevor Allen, David Catley, Yucang Wang.

Apologies:

Kevin McCue, Graham Hutchinson, Col Lynam, Michael Neville, Alton England.

Previous minutes:

Minutes of the 2001 AGM, Canberra were accepted as an accurate record (moved George Walker, accepted Norm Himsley)

Business arising from 2001 minutes

Was conference paper length too restrictive? CD Rom now considered easier, especially for figures with colour. GA experience showed CD to be easier, only drawback being people with low interest did not look. For these paper is better. NZSEE gives delegates choice of CD or hardcopy for their annual conference proceedings. General agreement that hard copy abstracts plus full paper on CD was the way to go. Promotional material can also go on CD.

President's report

Short written report was distributed. Main efforts of committee this year were to organise a conference aimed at a wider cross-section of people involved in the earthquake risk management. Scholarship winners were announced:

Kittiporm Rodsin	University of Melbourne	\$2500
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	Melbourne	
Trevor Allen	Monash University	\$2000
Darren Andrews	University of Tasmania	\$1000

Developments of technical societies in IEAust were reported.

Barbara Butler was thanked for her substantial support.

Treasurer's report

A brief report on the society's finances was presented and attached. Books are currently being audited.

AEES delegate to IAEE

John Wilson will continue as the international delegate to 2004 WCEE. John reported that IAEE has a project tracking earthquake codes.

**Next AEES AGM and
Conference to be held in
Melbourne**

Election of officers

Existing Executive was re-elected unopposed.

Existing state representatives were re-elected except for WA where Mike Griffith will look for a new candidate.

President	Mike Griffith
Secretary	David Love
Treasurer	Peter McBean
Qld	Russell Cuthbertson
NSW	Michael Neville
ACT	Gerhard Horoschun
Vic	John Wilson
Tas	Vagn Jensen
SA	Jim Wilson
WA	tba
Web master	Vaughan Wesson
Editor	Kevin McCue

Other business

Proposal to have biannual conference combined with New Zealand

ANCOLD have triannual conference with NZ. Difficulty would be to get New Zealanders to Australian venue. Australia would benefit from the deeper commitment that NZ engineers have to

Earthquake Engineering. GA staff have difficulty with international travel, but an Australian society conference in NZ would have less problems. Cost effective idea for those that currently go to both conferences. We barely have a critical mass by ourselves. NZ meeting is normally early in year, while ours is late. Offer to have the first joint meeting in NZ in 2004. Australian joint venue (in 2006) should be Melbourne or Sydney only. Cost sharing arrangements may help both societies. Addition of workshops regarding areas of possible exchange or synergies would be valuable. Mike Griffith to approach NZSEE.

Web site listing of services.

GA receive many requests to recommend organisations to do Earthquake Engineering work and would like to see site containing this info so that they can remain independent. List should be by invitation only with signed form for privacy regulations.

Web site maintenance:

Should some money be available to get a student to update site on a regular basis, as Vaughan has limited availability. Executive to pursue this further.

Scholarships:

What is the society trying to achieve? Executive should put some aims and selection criteria together, after approaching Bill Boyce for his previous work on this.

Workshops:

We should strive to arrange some with each conference, especially some on the engineering side. Should not be just on an ad hoc basis.

Vote of thanks was extended to Conference committee and Barbara Butler.

David Love

The Society website/email list

Dear AEES Members,

The AEES web site is at www.aees.org.au. Any contribution from you on the following topics is most welcome

- details of interesting recent publications
- significant research projects in earthquake
- engineering (in Australia?)
- links to other relevant Web sites

Please send me your contributions/suggestions via email.

The AEES email list is operated by the Seismology Research Centre, Melbourne. If you would like to register please notify me at vaughan@seis.com.au

Vaughan Wesson

Earthquakes in Australia Oct - Nov 2002

The following list of earthquakes for October and early November was compiled by Geoscience Australia with information from ES&S and PIRSA. None of the earthquakes caused damage, several were reported felt.

DATE	UTC	LAT	LONG	ML	PLACE
Oct					
01	133347.	30.57	117.10	1.8	Burakin WA.
02	62927.6	32.78	118.31	1.3	Kondinin WA.
03	72900	41.1	144.2	3.3	Off coast of NW Tasmania. 83 km SW Smithton.
03	141216.	31.45	138.66	1.5	Hawker SA.
03	161602.	30.54	117.07	1.6	Burakin WA.
03	170054.	29.16	147.35	2.5	Brewarrina NSW.
03	181542.	31.86	138.44	3.8	Hawker SA.
03	202347.	30.55	117.01	2.6	Burakin WA.
05	163139.	36.16	148.46	1.7	Eucumbene area.
05	163541.	30.72	117.10	1.9	Burakin WA.
06	40657.8	30.59	117.04	1.9	Burakin WA.
06	85205.8	34.76	149.14	1.5	Dalton NSW.
06	145714	22.2	129.2	3.7	Gibson Desert WA
06	145721.	22.19	129.27	3.7	Lake Mackay NT.
08	155452.	25.26	115.50	4.5	Gascoyne Junction WA. Felt Gascoyne Junction and Bidgemia Station.
09	104837.	35.99	148.96	2.3	Adaminaby NSW. Felt Adaminaby.
11	70933.1	28.01	140.70	2.8	Innaminka, SA
11	130226.	32.18	149.80	2.1	Ulan NSW
13	160948.	35.47	138.68	2.2	Victor Harbour SA
14	22028.1	36.05	148.96	1.9	Adaminaby, NSW
15	35906.0	19.05	118.01	4	150 km north Pt Hedland, WA
16	185751.	32.14	149.77	2.3	Ulan NSW.
17	203433.	30.51	118.32	2.5	Bonnie Rock WA.
23	112835.	35.62	148.15	2.6	Batlow, NSW
24	53059.5	37.34	147.83	2.6	Ensay VIC
25	12528.1	30.51	117.07	1.9	Burakin WA
25	42503.2	32.42	126.81	3.5	Gt Australian Bight WA
25	64608.3	15.74	123.11	3.3	Indian Ocean, 183 km North of Derby
29	151925.0	30.49	142.01	3	Packsaddle NSW. Felt Packsaddle.
29	152532.	30.593	142.04	3.5	Packsaddle NSW Felt Packsaddle.
31	225115.	16.81	123.75	2.9	Near Derby WA
Nov					
01	85519.1	11.03	129.97	4.2	Bathurst Is NT
01	192218.	36.28	148.95	1.6	Cooma NSW
04	193401.	34.88	144.43	3.1	57 km SW of Hay NSW

The AEES subscription year is the fiscal year. It is expensive to send each member an individual reminder that fees are due so please help us by sending your subscription for 2001/2002 to AEES if you haven't already done so (attn: Barbara Butler, Civil and Environmental Engineering Dept, Melbourne University Parkville Vic 3052) or renew through IEAust's annual subscription system by marking AEES your preferred Society. If you change address or if you know a member who is not receiving the newsletter please advise the Secretary or Barbara.

Seismicity in Gippsland September 2001 to September 2002

From August 2000 to August 2001 a small, dense seismograph network was operated in the Strzelecki Ranges, Gippsland, Victoria. The network was funded by the Australian Earthquake Engineering Society and was operated by myself with the help of the Seismology Research Centre and Geoscience Australia.

At the 2001 AEES Conference I discussed the seismicity in Gippsland from August 2000 to August 2001. Now, a year later I wanted to revisit the seismicity of Gippsland.

In August 2001 I removed all but two of the stations in the Strzelecki Seismograph Network. The remaining instruments are located at Boolarra and Mt Best. These two stations supplement the permanent seismograph network in the area.

The seismicity in Gippsland from September 2001 to September 2002 is shown in Figure 1. Thirty nine earthquakes were located within Gippsland compared to thirty three for the twelve months previous (Figure 2).

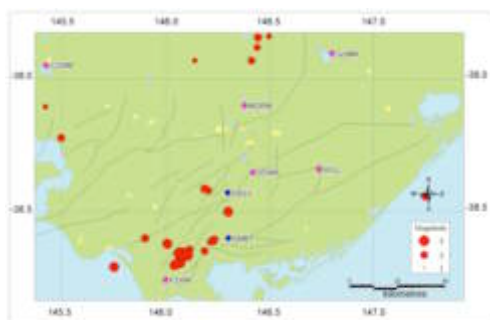


Figure 1 - *Seismographs operating in Gippsland between September 2001 and September 2002 with earthquakes located in the same period*



Figure 2 – *Seismographs operating in Gippsland between August 2000 and August 2001 with earthquakes located in the same period.*

The two observations that I would make about the spatial distribution of the earthquakes between 2000/2001 and 2001/2002 are; the earthquakes were more widely distributed in the 2000/2001 period, and the highest concentration of

earthquakes in both time periods was associated with the occurrence of the largest earthquake in that time period.

While the Strzelecki seismograph network was operating the coverage in Gippsland was improved and this is reflected in the wider distribution of earthquakes located. When the network was removed the smaller earthquakes outside the network could no longer be located, reducing the spatial distribution of located earthquakes.

Earthquakes in the 2001/2002 period shows a greater concentration to the south near Fish Creek. This contrasts with the seismicity in the 2000/2001 period when the greatest concentration of earthquakes was more centrally located, about Boolarra.

The change in spatial concentration can be attributed to the location of the largest events in the respective time periods. In the 2000/2001 period the largest event was the ML 4.6 Boolarra earthquake. In the 2001/2002 period the largest event was the ML 3.8 Fish Creek earthquake. The Boolarra earthquake had foreshocks and aftershocks while the Fish Creek earthquake had a number of aftershocks.

The ML 3.8 Fish Creek earthquake occurred 4 kilometers north of Fish Creek and was felt in Fish Creek, Tarwin, Inverloch, Foster and Leongatha.. It was followed by an ML 1.9 aftershock 19 minutes later, then followed by an ML 3.0 aftershock a minute later. Several more aftershocks were located in the following weeks.

One of the remaining Strzelecki stations will soon be moved from Boolarra South further west. It is hoped that the move will improve the location capability in this area as it will fill a gap in the permanent seismograph network.

Amy Brown

Report: 12th European Conference on Earthquake Engineering, Sept 2002

For personal reasons I was away in Europe during the 12th Australian Conference on Earthquake Engineering, the first annual conference of AEES I have missed. By way of compensation I left Australia early to attend the equivalent European conference held now every 4th year, by coincidence also their 12th. Back in 1972 I was fortunate to be at Imperial College, London when the inaugural European Earthquake Engineering conference was held there. The stimulus for the creation of the EEES was the destruction of Skopje, Macedonia by a large Cadoux-sized earthquake in 1963.

More than 500 delegates attended the 12th ECEE, only the second held in England. The venue was The Barbican Centre in east London, from Monday 9th to Friday 13th September 2002, by far the largest gathering of earthquake engineers and engineering seismologists in Europe outside the World Conferences. Attendants came from most European countries including the Azores, Balkans, England, France, Germany, Iceland, Italy, Japan, Portugal, Scotland and Spain to name but a few. The largest contingent was from Italy. I was the only Australian delegate but there were six from New Zealand including Andrew King current President of the NZSEE.

The format was fairly traditional with keynote speeches, short oral presentations, posters, a dinner and technical display. The Wednesday afternoon was reserved for Special Interest sessions, such a pity one could not be in eight different places at once. The topics included EAEE task force reports, EERI and EEFIT reports on learning from earthquakes, a session on the Bhuj earthquake in India and the one I attended entitled SESAME, EC8 and the way ahead chaired by Roger Musson. SESAME followed IDNDR to improve the GSHAP hazard assessment map of Europe.

With four concurrent oral sessions one misses at least 3/4 of the conference presentations. I chose the topics addressing seismological-hazard-code issues, regretfully having to pass over the structural dynamics and geotechnical sessions.

The single theme format of our own AEES conferences is one of their great strengths and I hope this won't be changed in the future. How else will seismologists ever get an appreciation of the earthquake engineering problems and how they might contribute to their solution, and vice versa for the engineers. Code development is one

of those areas where a significant overlap of expertise and knowledge is required.

There were nine keynote speakers, the last of them Professor Nick Ambraseys who summarised the developments in Engineering Seismology in Europe over the last 40 years from a celebrated vantage point at its centre. His view is that to improve hazard estimates, particularly their uncertainty, we must increase the length of the data sample. Joe Barr talked about bridge design and concluded that codes need to be constantly revised as lessons are learned after each new earthquake. Ian Davis pointed out that despite the impressive increase in knowledge of earthquake engineering principles, more and more people were being needlessly killed in earthquakes. He pointed out however that wars and road accidents accounted for far more fatalities and injuries and suggested there is a strong need for development of a safety culture and protection principles.

Amr Elnashai stressed the importance of integrating experimental testing and computer analysis with field studies. Peter Fajfar reminded us of the inherent inaccuracy of structural response predictions in the light of uncertainties in the ground motion and randomness of structural properties. Back at ground level, Ezio Faccioli focussed on the complexity of the influence of soils and topography on damage severity and its spatial distribution in strong earthquakes. Code developments was Michael Fardis' topic, the final draft of Eurocode 8 was to have been presented on 2 September 2002 after 10 years development. He talked about the cross-fertilisation of ideas with other codes.

Jack Pappin discussed his long experience of designing foundations and lifelines more latterly in Hong Kong and using simplified methods where possible. Haluk Sucuoglu's topic was the legal context and technical challenge of seismic rehabilitation of buildings.

If one word could describe the conference for me that word would be *refreshing*. Not *exciting* in the sense of the early WCEEs when great strides in our understanding of earthquakes and their effects seemed to be announced in every session. Today advances in earthquake engineering and engineering seismology seem to be occurring step by step on many fronts and in many countries so it was very rewarding to meet people confronting the same problems as we in Australia. Issues such as URM and strengthening of existing buildings, ground motion spectra in plate interiors and on oceanic islands, attenuation and response spectra modification on different foundations, including

very soft soils. New strong motion records have been obtained in Iceland and the Azores, both sets characterised by high near-field shaking and more rapid attenuation than in continental crust.

I was surprised to learn that no consideration is given to earthquake loading in the UK for structures other than dams and Nuclear Power stations. Several damaging earthquakes including their largest known earthquake since 1900, a magnitude ML6.2 event in the North Sea in 1959, are well documented. BGS have recently published a colourful brochure on UK seismicity, the map includes a few small events in Ireland!

The dinner venue was rather spectacular. Tables stretched along the flanks of a dinosaur skeleton suspended from the roof, the enormous spareribs highlighted by purple and orange lights. The great hall of the Natural History Museum was a difficult ask for the guest speaker from RedR but there was quiet for the presentation of an award to Nick Ambraseys for a life dedicated to understanding earthquakes and ameliorating their effects.

For once the organisers dispensed with written proceedings, the papers are only available on CD which is more work for the authors but saves on bookshelf space. How we will read them in a few years when the CD becomes obsolete (like the 3.5" diskette) I don't know. The address for correspondence is www.seced.org.uk.

The conference organisers invited me to chair with co-chair Alice Walker the second session on strong motion studies. Ms Walker is head of seismology and geomagnetism at the British Geological Survey. We didn't think at the time that we would watch Alice on TV just a few days later being interviewed by journalists about the recent ML 4.8 damaging Midlands UK earthquake. We were waiting at the Heathrow departure gate heading for Berlin at the time – but therein are a couple of other short stories.

Kevin McCue

News!

Changes to regulation of certifiers in NSW

Deputy NSW premier and minister for planning Dr Andrew Refshauge has announced upcoming changes to the way certification is regulated in the state. These changes will affect the way engineers are accredited and could open greater opportunities for participation in building design and construction supervision.

Some key reforms are:

- Councils and principal certifying authorities will no longer be able to rely on self-certification under section 93 of the Local Government Act
 - The engineering details of buildings (footings, slab and frame for cottages) will require compliance certificates
 - Developers will no longer be able to shop around for construction certificates and will not be able to start work without one
 - An occupation certificate must be issued before a newly constructed home can be sold.
- The IEAust will be involved with the state government in working out the operation of the new system.

(from IEAust enews 1 Nov 2002).

Progress on Revision of the Loading Standard AS1170.4.

A BD/6/4 meeting on 27/28 November considered:

- the remaining public and peer comments
- sign off on the standard
- completion of as much as possible of the commentary.

SNZ and SAIL will sort out any consequential amendment to part 0.

The commentary will be completed by distance working in January 2003.

The draft will be released for "road testing" by SESOC in NZ and in Australia led by Simon Matthews and Rod Johnson (BD/6) for about 6 weeks. At the same time sign off from BD/6 will be sought.

Ballot for publication will occur in April 2003 with publication following in May.

National disaster scheme needed for drought: independent MP

AAP News - 12.11.02

CANBERRA, Nov 12 AAP - A national disaster scheme was needed to cover the impact of the drought, an independent MP said today. Tony Windsor, whose electorate of New England covers some of the drought-ravaged areas of north-western NSW, said such a scheme would also cover the impact of other disasters such as hail storms and earthquakes.

The scheme could be funded by a \$1 a week contribution from each Australia, effectively raising close to \$1 billion, he said.

We should set up a national disaster fund, that not only covers drought but also things like the Newcastle earthquake, he told parliament. A little bit of thinking outside of the square I think can make a dramatic decision. Mr Windsor said there

was no argument with the government spending almost \$2 billion to help the building industry through its first home owners grant. *Col Lynam*

Recent Major Earthquakes Worldwide

This information is provided by the USGS National Earthquake Information Center.

- A magnitude 7.5 earthquake in NORTHERN SUMATRA, INDONESIA occurred at:

3.02N 96.18E Depth 33km Sat Nov 2 01:26:11 2002 UTC

A magnitude 7.9 earthquake in CENTRAL ALASKA has occurred at:

63.74N 147.69W Depth 10km Sun Nov 3 22:12:40 2002 UTC

University of California-Irvine Shakes Up Seismic Research Field With Optical Motion Capture System From Vicon 2/10/02

Researchers Pioneer Use of Visual Transducers to More Accurately Record and Track Earthquake Simulation Data. LAKE FOREST, Calif., Oct. 1 /PRNewswire/. -- Vicon, the leading developer of optical motion capture systems announced that the University of California-Irvine (UCI) is pioneering the use of a Vicon system within the field of earthquake engineering to more accurately evaluate the effects of strong ground motions on structures. In a ground-shaking new approach being tested by researchers in the civil engineering and computer engineering departments, UCI is using a six-camera Vicon system and dozens of ultra low-mass markers to track the motion of structures generated by the school's bi-axial shake table. The breakthrough application, which introduces Vicon's optical sensing technology as an alternative method for measuring earthquake-induced motions, allows a denser array of measurements to be obtained at a high degree of precision.

Perhaps the most challenging problem faced in earthquake engineering research is that traditional motion sensors must be physically attached to a structure and require cumbersome cabling, configurations and substantial set-up time, said Assistant Professor Tara Hutchinson, Department of Civil & Environmental Engineering at UCI. Conventional sensors, or transducers, also add substantial weight and can therefore change the response characteristics of the system. Using an image-based system in this context is highly advantageous because it requires very little physical contact with the

structure-of-interest, is high speed and high resolution and does not introduce additional mass or otherwise modify the properties of the structure. In its recent experiments, UCI used four high-resolution motion capture cameras to track reflective markers discreetly positioned on a scale model five-storey steel frame structure. The structure was mounted on UCI's shake table, where it was subjected to different motions from the 1985 Mexico City and the 1995 Kobe earthquakes. The resulting set of data collected using the visual transducers provides a window into the structure's potential range of motion, such as its yaw, pitch or roll along three positional degrees of freedom, said Assistant Professor Falko Kuester. Using digital signal processing algorithms, the UCI researchers compared inter-story drift and floor level velocities and accelerations to those measured using more conventional sensors (piezometric accelerometers and LVDT positional transducers). Results from this exploratory study show that the non-intrusive approach is extremely promising in terms of its ability to accurately capture the data necessary for characterising global seismic response.

In addition to realizing more precise results more effectively, UCI is also benefiting from the ability to design experiments that track a greater number of objects and object types. In new tests at UCI, Vicon cameras and markers are being used to better predict how the interior contents of expensive laboratory environments such as biological or chemical laboratories might be displaced during an earthquake. This study is funded by the Pacific Earthquake Engineering Research (PEER) Center, one of National Science Foundation's three earthquake engineering research centers. *UCI is demonstrating that high-resolution Vicon cameras and markers can be utilized not only to improve the way in which laboratory and field experiments are conducted, but also to literally take the weight out of the equation to generate more true-to-form results. We are pleased to be helping the university innovate in a field that has a dramatic impact on so many regions of the globe.* A discussion of UCI's recent research was presented at the International Conference on Advances and Challenges in Earthquake Engineering Research (ICANCEER) in Hong Kong in August (Hutchinson and Kuester, 2002).

www.vicon.com.

Col Lynam

Governments agree on proportionate liability

(from IEAust News)

Federal and state treasury ministers have agreed to replace joint and several liability with proportionate liability for economic loss. If implemented in all jurisdictions, the decision will lead to damages payouts for acts of negligence being based on the actual contribution of the respective parties to the damage, rather than on the capacity of individual parties to pay through their insurer for most of or the entire loss.

The Association of Consulting Engineers Australia (ACEA) believes this a significant step forward, as well as the announcement that the federal government will amend the Trade Practices Act to complement state and territory law reform.

An important reform will be the removal of the ability to use provisions of the Act as a means of interpreting errors of judgement made by professionals in good faith as deceptive and misleading conduct, the ACEA said in a statement.

The Association said it is also keen to ensure that the reforms will eventually lead to an easing of PI insurance policy restrictions and costs.

FORTHCOMING CONFERENCES

13 - 15 February 2003 PCEE Pacific Conference on Earthquake Engineering. Christchurch New Zealand,

(closing date for abstracts was April 2002).

www.nzsee.co.nz/pcee

12 - 14 May 2003 SEE4 4th International Conference on Seismology and Earthquake Engineering. Tehran.

www.iiess.ac.ir

22 - 26 June 2003 Soil-Rock 2003, MIT, 12th Panamerican Conference on Soil Mechanics and Geotechnical Engineering, and 39th US Rock Mechanics Symposium.

1 - 6 Aug 2004 13 WCEE Canada

www.13WCEE.com

NEW BOOKS (& OLD) / REPORTS

Australian Seismological Report - 1998 Record
2002/1 Geoscience Australia Sales Centre
ph: 02 6249 9519, fax: 02 6249 9982

Dr Jim Bowler has published a CD titled Lake Mungo Window to Australia's past. The CD contains a large dataset of Quaternary geology and archaeology.
www.mup.com.au/e-showcase/