

GENERAL INFORMATION

NZNSSEE HOME PAGE ON THE INTERNET

The Society's home page address is:
<http://www.branz.org.nz/nznsee>

Three special theme sessions will be organised by a Co-ordinator who is a member of the Scientific Committee:

EARTHQUAKE HAZARD CENTRE NEWSLETTER

The latest *Earthquake Hazard Centre Newsletter*, Vol. 1, No. 4 is enclosed with this Bulletin.

A brief article describing the Centre is in the General Information section of the Bulletin Vol. 30, No. 2 June 1997, and a full paper outlining the progress and activities of the Centre is contained in the Proceedings of the *NZNSSEE Technical Conference, 27-29 March 1998, Wairakei*, pp 145-147.

The Centre would appreciate hearing from any members who could contribute articles relevant to the seismic needs of developing countries.

Eurocode 8 and national applications
 Seismic risk in the Mediterranean Basin
 Post-earthquake investigations and feedback experience

Further details are available from:
XI th European Conference on Earthquake Engineering, AFPS Secretariat, 4 Avenue du Recteur Poincare, 75782 PARIS CEDEX 16, France
 Tel: +33 (1) 4050 2834
 Fax: +33 (1) 4525 6151

COMING CONFERENCES AND SYMPOSIA

NOVEMBER 1998

SEPTEMBER 1998

September 6 -11 1998

On behalf of the European Association for Earthquake Engineering, the *French Association for Earthquake Engineering (AFPS)* announces that the next **European Conference on Earthquake Engineering** will be held in Paris-La Defense, France at the Congress Center of CNIT.

The technical programme will cover:

- Engineering seismology: seismicity, strong ground motion
- Soils, rocks, construction materials: experimental aspects
- Constitutive relations - Linear and non-linear modelling, computational aspects for materials, structures and soil-structure interaction
- Civil engineering projects
- Active and passive isolation
- Industrial facilities, lifelines, equipment
- Vulnerability, seismic risk, strengthening
- Site effects, spatial variability of seismic motion
- Reliability analysis - probabilistic aspects
- State of practice: seismic capacity design, design criteria, codes and standards

November 4-5 1998

Australian Earthquake Engineering Society AGM and Conference will be held at The University of Western Australia, Perth.

Topics to include:

- Engineering aspects including retrofitting and upgrade
- Unreinforced masonry- risks, design practice
- Seismology hazard related topics
- Disaster management- responding to an earthquake.

Details can be obtained from :

Mrs B. Butler
 PO Box 829
 Parkville, Victoria 3052
 Australia
 Fax: (613) 9348 1524

November 25-27 1998

The *10th Japan Earthquake Engineering Symposium* will be held in Yokohama, Japan, with expected emphasis on recent research into the **1995 Hyogo-ken Nanbu (Kobe) earthquake, its associated disasters and disaster mitigation.**

Papers will be presented on the following topics:

- Earthquake damage
- Seismicity and seismic hazard
- Ground motion and site effects
- Dynamic properties and stability of soils
- Soil-structure interaction

Experimental methods of structures and structural elements
 Response of structures and industrial facilities
 Seismic isolation and response control
 Seismic design methodology and codes
 Lifeline systems
 Seismic capacity assessment, repair and strengthening of structures
 Urban seismic risk mitigation and socio-economic issues
 Human responses and post-disaster activities.

For more details contact:

The 10th JEES, c/o Architectural Institute of Japan, 26-20 Shiba 5-chome, Minato-ku Tokyo 108 Japan.
 Fax: (813) 3456 2058

APRIL 1999

April 20-21 1999

Concrete Committee of Japan Society of Civil Engineers (JSCE) International Seminar on *Comparative Performances of Seismic Design Codes for Concrete Structures* will be held in Tokyo, Japan.

- The main events at the Seminar are to include
- Principal lectures and comments from code writers in Japan, USA, Europe & New Zealand
- Reports on comparative designs of highway and railway bridges
- Report on numerical comparison on the performance of designed bridges
- Discussion and comments on design results and numerical comparison

Abstracts from authors wishing to contribute to the working sessions should be sent to the Committee Secretariat by 31 July, 1998.

Address:

Prof. Hidetaka Umehara
 Dept. of Civil Engineering
 Nagoya Institute of Technology
 Gokiso-cho, Showa-ku,
 Nagoya 466-8555 Japan.
 Fax: +81-52-735-5503
 email: umehara@conc2.ace.nitech.ac.jp

JUNE 1999

June 13-16 1999

The 8th Canadian Conference on Earthquake Engineering will be held in Vancouver, British Columbia.

The Conference topics include:

1. Microzonation and seismic hazard
2. Strong and weak ground motions

3. Soil dynamics including site and foundation response
4. Seismic design, response and retrofit of structures
5. Seismic response and retrofit of bridges
6. Experimental studies, large scale shake table tests and instrumented response of full scale structures
7. Base isolation and energy dissipating devices
8. Seismic design codes: new developments and future directions
9. Seismic behaviour of industrial facilities
10. Seismic behaviour of lifelines
11. Lessons from recent earthquakes
12. Risk and reliability assessment
13. Emergency preparedness and response/insurance issues.

Further information can be found on the web site:

<http://www.civil.ubc.ca/home/eq/conference/> or contact

8th CCEE Conference Secretariat
 C/- Department of Civil Engineering
 University of British Columbia
 2324 Main Mall, Vancouver, B.C. Canada V6T 1Z4

email: 8CCEE@civil.ubc.ca

Fax: (604) 822-6901

JANUARY-FEBRUARY 2000

January 29- February 5 2000

The Society will host the 12th World Conference on Earthquake Engineering on behalf of the International Association for Earthquake Engineering. The Conference will be held in the Aotea Centre and the Town Hall in Auckland, New Zealand.

The Conference Organising Committee comprises: Prof. Bob Park (Chairman), Prof. Ian Buckle, Dr Barry Davidson, Mr Andrew King (President NZNSE), Mr Les Megget, Dr Ivan Skinner, Prof. Euan Smith and Mr Michael Brice (Secretary).

The *second announcement and call for abstracts* was sent out in May 1998.

The technical sessions of the Conference will include the following topics:

1. Earthquake risk reduction in developing countries
2. Earthquake engineering in practice: recent notable projects, design and construction...
3. International issues in earthquake engineering
4. Engineering Seismology: seismicity, ground and site effects, seismic hazard and risk analysis...
5. Geotechnical engineering: foundations, liquefaction, slope retaining structures, constitutive modelling...

6. Structural engineering: materials, elements, structural systems, structural response, active and passive control, evaluation and retrofit, - buildings, bridges, industrial and special structures...
7. Lifeline systems: design and analysis, risk assessment, mitigation...
8. Design criteria and methods: seismic codes and standards
9. Social and economic issues: human behaviour, preparedness, recovery, loss modelling, insurance, urban planning and risk analysis...
10. Lessons from recent earthquakes
11. Other issues: architectural, industrial facilities, building services and contents, tsunamis, fire and forensic engineering...

Abstracts must be typed single-spaced in English. The minimum length of the abstracts must be 300 words and a maximum of one page. Do not send longer abstracts. Abstracts must include: a) Title of the paper in CAPITAL LETTERS. b) Name of the author(s) (use the following: Family Name *clearly identified*, Given Name, Middle Initials). Underline the name of the presenting author. c) Affiliation, address (street, city, state, zip code, country, telephone, fax, email) of the contact author. d) Number of the most appropriate topic related to the paper (to be selected from the list of 11 topics above).

The abstract must be self-contained and organised as follows: Purpose, Outcomes, Conclusions.

The abstract may be sent by mail, fax or email to the
Secretary, 12WCEE Technical Programme Committee,
C/- Department of Civil Engineering,
University of Canterbury,
Private Bag 4800,
Christchurch,
NEW ZEALAND.
 email: 12wcee@civil.canterbury.ac.nz
 facsimile +64-3-3642758

Because of the limited time available at the Conference, a strict paper acceptance policy has been established. Prospective authors may submit more than one abstract, but only **one paper as presenting author**.

The deadline for receiving abstracts is **15 October 1998**.

Acceptance communication to authors and instructions for preparation of papers will be by **31 March, 1999** and the deadline for receiving the papers will be **24 July, 1999**. Advice of acceptance of papers will be by **30 September, 1999**.

Please refer to the more detailed summary of the Conference Programme and committees by Prof. Bob Park in this issue.

PEOPLE

New Members.

The following have recently been admitted as members of the Society:

Bell, D.K.	Auckland
Gillon, M.	Wellington
Kono, U.	Japan
Lin, X.	Christchurch
Ng, J.T.K.	Auckland
Satyarno, I.	Christchurch
To, N.H.T.	Auckland
Wilcox, D.M.	Ingleburn, Australia

Fellow.

The following has recently been elected as a Fellow of the Society:

Charleson, A.W.	Wellington
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Life Member.

Michael Brice (Waikanae) was elected as a Life Member of the Society at the recent AGM at Wairakei. At the AGM the President referred to Michael's total dedication to the Society, the Management Committee and the Society's membership since appointed Administrative Secretary in 1989.

Otto Glogau Award

The 1998 Award has been made to **J.X. Zhao, D.J. Dowrick** and **G.H. McVerry** for their paper "Attenuation of Peak Ground Acceleration in New Zealand Earthquakes".

Student Participation Award

This newly constituted award was presented at the end of the Annual Technical Conference to **Kevin Doherty** from the University of Adelaide.

EARTHQUAKE ENGINEERING RESEARCH SCHOLARSHIPS

The New Zealand National Society for Earthquake Engineering (NZNSEE) provides annual scholarships of up to \$4000 to

suitably qualified persons to assist research activities related to earthquake engineering. Suitable research areas include most aspects of earthquakes and their effects. The total number of Scholarships awarded in any one year is at the discretion of the NZNSEE Management Committee. Applications are welcomed from individuals fulfilling the following criteria:

- Undertaking post-graduate research related to earthquake engineering that is consistent with the objectives of the NZNSEE;
- Enrolled at the time of application at a New Zealand university or, **in exceptional circumstances**, New Zealand citizens enrolled in post-graduate studies at foreign universities. Applicants from New Zealand universities do not require New Zealand citizenship and;
- A current member of the New Zealand National Society for Earthquake Engineering.

No application form is required. Applicants are requested to outline in detail the nature, purpose and probable outcomes of their proposed research. A detailed work plan and budget indicating the amount requested for the Earthquake Engineering research Scholarship, and other sources of financial support of the proposed research, is required. Applications must be accompanied by a confidential letter of support from a university staff member involved with the research project. A brief curriculum vitae will assist in selecting successful applicants.

Suitably qualified applicants will be awarded an Earthquake Engineering Research Scholarship under the following conditions:

- 1). The subject of study and the applicant are considered suitable by the Management Committee of the NZNSEE. All applications must be completed by the person who will undertake the research;
- 2). Only one Scholarship will be awarded to any applicant in any given financial year;
- 3). The Scholarship is awarded for twelve months. Multi-year applications will not be considered, but all applicants can reapply each year;
- 4). On completion of the research project, a research paper is presented that is suitable for publication in the *Bulletin of the New Zealand National Society for Earthquake Engineering*. It is normal practice to withhold part of the Scholarship until this condition is fulfilled.

31st January is the annual closing date for applications which should be sent to:

The Administrative Secretary,
New Zealand National Society for Earthquake Engineering,
P O Box 48-046,
Silverstream,
Upper Hutt.

PUBLICATIONS

Copies of the *Proceedings of the 1995 Pacific Conference on Earthquake Engineering* are now available and may be ordered by writing to Mr Graham Quirke, Administrative Secretary NZNSEE, P O Box 48-086, Silverstream, Upper Hutt. Costs are \$150 plus GST post free within NZ and \$185 post free overseas. Copies of the *Proceedings of both the 1987 and 1991 Pacific Conferences on Earthquake Engineering* are also available at a price of \$50 plus postage, while stocks last.

Also available is *Seismic Design and Retrofitting of Reinforced Concrete Bridges* edited by **R Park** being the **Proceedings of the Second International Workshop held in Queenstown, New Zealand, 9-12 August 1994, 794p.**

Copies are available from Professor R Park, Department of Civil Engineering, University of Canterbury, Private Bag 4800, Christchurch, at a cost of \$70 US (NZ\$100) including packaging and postage. Professor MJN Priestley (USA) and Professor G Michele Calvi (Italy) are also holding copies for sale and will be advertising in their countries.

New Zealand Strong-Motion Data on CD-ROM.

Strong-motion data recorded in New Zealand is now available on CD-ROM from the Institute of Geological & Nuclear Sciences. The Institute, an predecessor groups in the DSIR, have operated a NZ wide network of accelerographs and acceleroscopes since the mid-1960's. Currently there are 266 recording sites in a blend of ground and structural recording locations. Thirty percent of the accelerographs in the network are digital and the remainder are film-recording mechanical-optical units designed and manufactured in NZ.

More than 4000 recordings have been obtained during the 30+ years of recording. The 600 largest have been fully processed to give instrument-corrected and filtered time histories (accelerations, velocities, displacements) and response spectra.

For each of the 600 processed records, three 3-component data files containing:

- raw acceleration time-histories
- fully processed time-histories (accelerations, velocities and displacements)
- response spectra

Support files giving information on the formats of the processed data files, locations of recorded events, locations, site information and ground class classifications for the recording sites, a listing of peak accelerations for all recordings and a list of related publications.

The cost of the CD-ROM is NZ\$300 (includes GST, p & p). The CD is available from Jim Cousins, IGNS, PO Box 30 368, Lower Hutt, New Zealand.
Fax: +64 4 570-1440
email: j.cousins@gns.cri.nz

**WORLD EARTHQUAKES OF MAGNITUDE 6.0 AND
GREATER
February 1998 to April 1998.**

Data from the U.S. National Earthquake Information Service.

Date	Lat	Long	Depth (km)	Mag							
Feb 03	16.0N	96.2W	33	6.3	Oaxaca, Mexico. Moderate damage at San Agustin, San Francisco and Santa Maria Huatulco. Minor damage at Bahias de Huatulco, Oaxaca City, Puerto Angel and Puerto Escondido. Landslides occurred on the highway between San Pedro Pochulta and Santa Maria Tonameca. Felt in much of Southern Mexico, including Mexico City.	Feb 20	36.4N	71.1E	238	6.3	Afghanistan-Tajikistan border region One person killed and three injured at Yar Husain, six injured at Rawalpindi and two injured at Peshawar, Pakistan. An earthquake-induced avalanche destroyed 35 houses, including a mosque, left three hundred people homeless and killed several dozen cattle and sheep in the Astor area, Kashmir. Damage occurred from Chitral to Swabi, Pakistan, in western Kashmir and in the Rostaq area, Afghanistan. Felt in much of northern Pakistan as far south as Lahore and in northeastern Afghanistan as far south as Kabul and Mazar-e Sharif. Also felt in parts of Tajikistan.
Feb 04	37.1N	70.1E	33	6.0	Afghanistan-Tajikistan border region Between 3,000 and 5,000 people killed, thousands injured and homeless, extensive damage and landslides in the Rostaq area, Afganistan. Felt at Dushanbe, Tajikistan.	Mar 03	14.3N	91.5W	76	6.1	Guatemala. Landslides blocked some highways and cable damage occurred in the Nahuala, Santa Maria de Jesus and Zunil areas. Felt strongly in Quezaltenango, San Marcos and Solala. Also felt at Mazatenango and Guatemala City. Felt at Mexico City, Mexico.
Feb 07	24.8N	141.7E	526	6.4	Volcano Islands region. Felt (II JMA) in southern Chiba Prefecture and in the Tokyo area; (I JMA) in parts of Chiba, Fukushima, Gumma, Ibaraki, Kanagawa, Saitama, Tochigi and Tokyo Prefectures, Honshu. Also felt (I JMA) on Hachijo-jima and Miyake-jima.	Mar 14	30.1N	57.5E	9	6.6	Northern Iran. Five people killed, 50 injured, 2000 homes destroyed and 10,000 people left homeless in the Golbaf area.
Feb 16	52.6N	33.6W	10	6.8	North Atlantic Ocean.	Mar 20	50.1S	163.0E	10	6.7	Auckland Islands region.
Feb 19	10.6S	74.5W	155	6.0	Central Peru.	Mar 21	80.0N	1.7E	10	6.2	North of Svalbard. This event is followed by a larger subevent about 4 seconds later.
Feb 19	4.5S	129.1E	33	6.5	Banda Sea. Felt strongly on Ambon.						

The 6.1 magnitude is computed from the later event.

**SIGNIFICANT NEW ZEALAND EARTHQUAKES
February 1998 to April 1998.**

The locations of these earthquakes are preliminary as final analyses have not been completed.

Date	Lat	Long	Depth (km)	Mag	Location
Mar 22	11.3S	66.2E	10	6.1	Mid-Indian ridge.
Mar 25	62.8S	149.7E	10	8.1	Balleney Islands region.
Mar 25	63.5S	147.8E	10	6.5	South of Australia.
Mar 29	0.3S	17.8W	10	6.1	North of Ascension Island.
Mar 29	17.5S	179.1W	537	7.2	Fiji Islands region.
Mar 20	50.1S	163.0E	10	6.7	Auckland Islands region.
Apr 01	0.5S	99.3E	33	7.0	Southern Sumatera, Indonesia. Felt strongly at Padang; also felt in many areas along the southwest Coast of Sumatera. Felt in the Kuala Lumpur area, Malaysia.
Apr 01	39.8S	75.2W	9	6.7	Off Coast of Central Chile. Felt (V) at Futrono, Panguipilli and Valdivia; (IV) at Castro, Osorno, Puerto Montt and Ranco de Chihuio.
Apr 03	8.1S	74.8W	165	6.6	Peru-Brazil border region. Felt (II) at Lima; Also felt in many parts of northern Peru. Probably two events about 5 seconds apart.
Apr 10	1.5S	15.6W	10	6.2	North of Ascension Island.
Apr 10	33.4S	179.6W	46	6.0	South of Kermadec Islands.
Apr 11	23.6S	176.2W	33	6.2	South of Fiji Islands.
Apr 12	15.6S	71.8W	33	6.1	Southern Peru.
Apr 14	23.7S	179.9W	494	6.1	South of Fiji Islands.
Apr 27	2.9S	136.3E	33	6.2	Irian Jaya region, Indonesia Felt in Irian Jaya.
Feb 02	39.9S	77.1E	33	4.5	31 km southeast of Hastings Felt in Napier.
Feb 03	39.2S	175.0E	30	4.3	32 km west of National Park Felt in Wanganui.
Feb 03	40.0S	177.2E	33	4.5	38 km south of Cape Kidnappers Felt in Napier and Hastings.
Feb 08	45.1S	170.5E	12	5.3	39 km west of Oamaru Felt strongly at Dansey's Pass. Felt widely from Christchurch to Dunedin.
Feb 16	39.5S	175.6E	5	4.8	7 km WSW of Waiouru Felt in the Waiouru area and as far south as Sanson.
Feb 19	41.3S	175.2E	26	4.3	20 km SSW of Featherston Felt widely in the Wellington area.
Feb 24	41.9S	174.2E	21	5.4	30 km SSE of Seddon Felt in the Wellington area and in Blenheim. Aftershocks followed, the largest being a magnitude 4.2 on Feb 25 at 0006UT.
Feb 25	44.9S	167.7E	97	4.7	29 km SW of Milford Sound Felt in Queenstown and Manapouri.
Mar 09	45.2S	170.7E	12	4.3	24 km WSW of Oamaru Felt in Oamaru.
Mar 13	41.9S	173.4E	16	4.2	57 km NNW of Kaikoura

Mar 22	45.1S	166.9E	12	4.8	76 km WNW of Te Anau Felt in Te Anau and Manapouri.
Mar 25	38.2S	176.3E	5	4.9	13 km SSE of Rotorua Felt in Ngakuru, Reporoa and Rotorua. The largest of a swarm of about 80 earthquakes, at least 10 of which were felt in Rotorua.
Mar 31	45.1S	170.4E	12	4.3	41 km west of Oamaru Felt in Ranfurly, Dunedin and Oamaru. The location is similar to the magnitude 5.3 earthquake recorded on February 8.
Apr 02	38.1S	176.5E	5	4.7	18 km WSW of Kawerau Felt at Ngakuru and Rotorua. The largest of a swarm of earthquakes.
Apr 05	42.6S	171.1E	33	4.5	14 km NNE of Hokitika Felt in Greymouth.
Apr 06	44.9S	167.9E	33	4.9	25 km south of Milford Sound Felt widely from Arrowtown and Te Anau to Dunedin and Invercargill.
Apr 06	41.2S	174.2E	43	4.2	22 km ENE of Picton Felt in Picton and Tawa.
Apr 20	39.0S	174.9E	245	6.3	33 km WSW of Taumarunui Felt widely from Christchurch to Taranaki and Hawke's Bay.
Apr 22	39.5S	178.1E	82	4.8	73 km SE of Wairoa Felt in Gisborne, Marumaru and Patoka.

1998 MANAGEMENT COMMITTEE

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