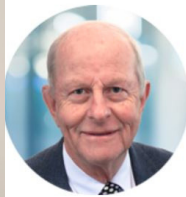




Kestrel- New Staff, New Product



From left to right: Dave Brunsdon, Michelle Isaac, Karen Stephens, John Hamilton, Sandra Pedersen and David Middleton



Mike Stannard

Kestrel Group has been established for 15 years successfully providing planning, support and training needs for organisations to ensure their business functions well in any emergency or crisis situation. Combined with this is Kestrel's expertise in building engineering and disaster insurance. With Karen and Sandy's expertise and many years of experience, Kestrel developed a process for organisations to create their own business continuity plans. In recent years, Kestrel has developed more creative and contemporary exercises, so companies can practice how to respond to realistic scenarios. Michelle Isaac joined the Kestrel team to assist with the development and management of 'Talon' a mobile crisis management app which is seeing steady success. Kestrel's reputation as leaders in resilience planning has attracted some of New Zealand's most experienced and respected people in their fields. David Middleton, John Hamilton and Alisha Kidd have joined the Kestrel team and are contributing to the high-quality work we do. More recently Mike Stannard has joined Dave Brunsdon on the building engineering side of the practice. Kestrel is now the largest private company delivering crisis management consultancy services in New Zealand. Dave continues to participate in international forums devoted to natural hazard risk reduction and preparedness.

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- Indonesia Initiatives
- Richard Sharpe, Beca
- SNAPSHOTS
- Prof. Andrew Charleson Vic Uni.
- UPCOMING EVENTS

Massey Uni - Joint Centre for Disaster Research

As of 2018, Joint Centre for Disaster Research has been supporting 24 international students and researchers completing internships, PhD's and research projects alike. These visitors are from the USA, Canada, Mexico, Nepal, Pakistan and Switzerland. Studying visitors are also from Pacific regions such as Australia, Philippines, Samoa, Tonga and Vanuatu. JCDR has been seeing a lot of success in the provision of the new Masters of Emergency Management and the Postgraduate Diploma of Emergency Management. Both courses run by Massey University JCDR are led by director David Johnston. These tertiary education options have been acknowledged as unique and effective at international conferences.



For more information on Massey Uni and JCDR:

Email: jcdr.enquiry@massey.ac.nz

Tel: (04) 979 3613 or ext 63613

<http://disasters.massey.ac.nz>

For more information about Kestrel :

David Middleton - Ph: +64 21 1896 176 E:dm@kestrel.co.nz

David Brunsdon- Ph: +64 21 679 338 E: db@ketrel.co.nz

Nepal NSET- 25 Years of Earthquake Education

.Through 1992-94 Richard Sharpe led a team in Kathmandu from Beca, Golder Associates and Nepalese specialists in drafting an innovative building code for the Government of Nepal. The final incentive for this competitively-bid project was the 1988 Bihar earthquake which had caused extensive damage and the deaths of more than 700. Kathmandu itself was devastated by an Magnitude 8 earthquake in 1934.

Towards the end of the project, Richard urged his highly-motivated and highly-performing Nepalese team leaders to form an earthquake engineering society to continue the impetus amongst the professionals in Nepal. He suggested they model such a society on the NZSEE, and showed them its constitution.

Within a year such a society (www.nset.org.np) was formed, and soon attracted the interest of USAid who asked it undertake some seismic resilience projects in Nepal. So successful were they in delivering these projects that the leaders left their full-time employment and the society morphed into a not-for-profit organisation that has progressively won and delivered more and more projects both in Nepal and in surrounding countries. By the time of the devastating 2015 earthquakes in Nepal, NSET-Nepal had more than 50 permanent staff and an equal number of contractors with a history of amazing initiatives in seismic resilience ranging from the strengthening of schools to the preparation and training for post-earthquake assessment.

In June NSET celebrated 25 years of work with a conference and festive activities to which Richard and his wife were invited. Although Richard has returned a number of times to Nepal, including after the first 2015 earthquake in time to experience the second one, he found it extremely gratifying how often the founders of NSET mentioned during this visit how their professional lives had been changed forever by their participation in the Building Code project.

This organisation has been tireless in pushing the agenda for seismic code compliance and resilience in Nepal. It is now in partnership with the new government in training young government engineers resident in remote locations assisting villagers to access government funds for re-building back better to Building Code-compliant standard designs which NSET has helped prepare. NSET employees spoke enthusiastically to Richard about their roles, participation, commitment and satisfaction. NSET has been able to retain and provide careers in their own country for some of their most promising best engineers and disaster mitigation specialists – including offering opportunities for advanced training internationally. The original leaders, including the inspirational and acclaimed Amod Dixit, have activated their succession plans by transferring their leadership roles to excellently-prepared younger colleagues.

What an amazing and unexpected outcome directly attributable to this Building Code project more than 25 years ago. NSET's inspirational website is worth a visit.



Picture – the late Sir Edmund Hillary visiting the Building Code team in 1993:

For more information Richard Sharpe -Technical Director of Earthquake Engineering, Beca
Ph +64 44 715 506

Richard.Sharpe@beca.com www.beca.com

Pacific Projects

Calibre Group

Calibre is currently working on a range of development projects through the Pacific, both aid funded and direct for partner Government agencies. These projects require a broad range of skills and expertise to plan and deliver as our work on the often remote islands brings special challenges of mobilisation and procurement, as well as the need to work with the local communities and to utilise their local knowledge. Recent projects include: **Tuvalu borrow pits rehabilitation** – a NZ aid funded project to fill the borrow pits excavated during WWII to win construction material to build an airfield. This involved dredging material from the lagoon and filling the pits around and under the houses that were constructed on stilts in the pits and while families were living in them. A challenging project that required a lengthy period of consultation, environmental and social reporting and risk management, together with addressing land ownership issues. **Tonga Ha'apai schools reconstruction** – a number of schools in the Ha'apai were damaged during Tropical Cyclone Ian in 2014 and children could not attend classes. MFAT agreed to support an ADB initiative to design and construct 10 new schools, and Calibre was engaged to provide technical assistance to the project.

Tokelau reef channel and wharf improvements – the three islands making up Tokelau are remote with no airports or ports/harbours. All travel to and from Tokelau is via a 26 hour boat trip from Apia in Samoa, and on arrival passengers are transferred by small lighter through an exposed reef channel on to each island. Calibre was engaged by MFAT to upgrade the channels to improve the safety of the ship-to-shore operation and our team worked closely with NIWA in the initial stages to complete the consultation and environmental assessments. Each of these projects presented the challenge of understanding the local climate change and natural hazard environment of the work, and preparing a tailored and appropriate solution.



Calibre helps with projects underway in the Pacific

To find out more about Calibre:

Peter Ollivier -Senior Project Director

Ph: +64 4 384 2029

Peter.Ollivier@calibregroup.com

www.calibrelimited.com

GNS Science With UGM Indonesia

GNS Science continues to lead the MFAT funded StiRRRD initiative partnered with Gadjah Mada University in Yogyakarta, Indonesia. There have been visits multiple times this year to engage with locals and update communities on how best to protect themselves against disasters such as a Tsunami. With the assistance of Indonesian partners BPBD (Emergency Management Agency), Seluma and Bengkulu University the StiRRRD team visited the community of Rawa Indah in April. The community development trip was a multilevel success with the villagers receiving tsunami protection posters and calanders and a meeting being held by the StiRRRD team and the District OPD's.

www.stirrrd.org



Group of school children partake in a tsunami safety presentation.

Preparedness for super volcanoes

GNS Science is involved in an \$8 Million super volcano preparedness project funded by the MBIE. Graham Leonard from GNS Science as well as Colin Wilson from Victoria University have been leading a team of International and New Zealand based volcanologists looking into New Zealand's Taupo volcano region and other volcanic regions such as Vanuatu, Indonesia, Hawaii and South America. The aim is to gain much more insight and preparedness into the instability of the active volcano and further educate the region on the potential affects of minor eruptions.



A Volcano in the Taupo volcanic region

For more information on GNS Science: Lower Hutt Office:
Ph: +64 4 570 1444
E: www.gns.cri.nz/



Indonesia- NZ Disaster Risk Management- Padang City collaboration with Wellington City

'Strengthening Indonesian Resilience' Workshop Attendees

In March this year Concrete Structure Investigations had the pleasure of joining Robinson Seismic Ltd. among several other Natural Hazard Inc. members to welcome both Indonesian Delegates and Indonesian Padang City Council and Wellington Council to a workshop which marked the growing relationship between the two nations as part of the 60th anniversary of diplomatic relations between Indonesia and New Zealand. Organised by GNS Science and Wellington City Council the workshop drew lots of interest. Concrete Structure Investigations noted in their blog that they are looking forward to assisting in Indo-New Zealand relationships in the future. The Workshop also saw the first international agreement between Padang City and Wellington City, with the signing of a Memorandum of Cooperation on Disaster Risk



Wellington City and Padang City Officials

Pacific PARTnER Project

Initiative involving NIWA, JDCR- Massey University and GNS Science

Funded through the New Zealand Ministry of Foreign Affairs and Trade (MFAT), the Pacific Risk Tool for Resilience (PARTnER) project works with Pacific communities to predict, plan and prepare for the impact of disasters, using RiskScape, a software program which estimates impacts and losses from natural hazards. Built around case-studies and developed collaboratively with its Pacific country partners, PARTnER commenced with a review of current stakeholders needs for disaster information and modelling. In Vanuatu, ashfall on the island of Tanna was considered by stakeholders as the most frequent damaging hazard from the volcano that directly and indirectly impacts livelihoods. However, very little information was available to quantify ashfall impacts across Vanuatu. Therefore, PARTnER has collected ashfall loss and damage impact data directly from the exposed communities: on 23-26 January 2018, 23 interviews with chiefs and authorities in 13 villages located in the three ashfall zones were conducted. Valuable insights were gained into the impacts of ongoing ash emissions on buildings, crops, health, livestock and infrastructure such as road and power supplies and villagers' coping capacity. The resulting draft ashfall vulnerability and impact models are verified in Vanuatu through an expert elicitation workshop to ensure accuracy. Once completed, the ashfall case study models will be delivered to Government of Vanuatu to strengthen risk management and enhance emergency response.

For more information about the PARTnER project please contact:

Paula Holland:
Paula.Holland@niwa.co.nz
www.niwa.co.nz



RiskScape Assists Pacific

Successful software seeing international growth

NIWA and GNS Science have collaborated in recent years to bring about the redevelopment of RiskScape, an innovation software intended to model risks associated with natural hazards to various populations, homes, infrastructure networks etc. Though RiskScape has existed in some capacity for several years, the current redevelopment of the engine (dubbed RiskScape 2.0) is intended to create a more flexible, user friendly framework which various parties can employ in conducting risk assessments with whatever data they have available. RiskScape has been used in multiple areas to assist with loss calculations. Some areas include Greymouth, Fiji and Christchurch. More recently RiskScape has been tailoring itself to support development in the Pacific region, specifically Samoa and Vanuatu. The RiskScape project titled PARTnER which has many contributors (NIWA, GNS Science, Massey University) aims to educate individuals in the Pacific region on how to effectively use the RiskScape software and on risk modelling and disaster risk management in general. RiskScape notes that 'This project not only provides an opportunity to share and apply New Zealand's cutting edge Disaster Risk Reduction tools in the Pacific but also achieve the project goal to improve socio-economic resilience of Pacific Island Countries through sound disaster risk management.'

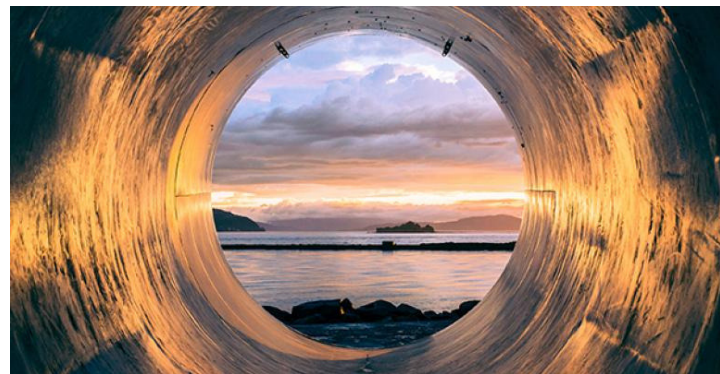


Individuals from risk management get trained

To learn more about **RISKScape** you can visit www.riskscape.org.nz or contact Hannah Brackley GNS Science: H.Brackley@gns.cri.nz
Ph: +64-4-570 4564

Climate Change Study for International Use

Infometrics, NIWA and Tonkin & Taylor in New Research project



Storm water drain looks out to the ocean. Tonkin & Taylor, NIWA and Infometrics to take part in year long climate change study.

To learn more about this Deep South Project and others visit:
<http://www.deepsouthchallenge.co.nz/contact-us>

The impacts and challenges initiative which is a part of the Deep South program has recently funded a year long project which looks into the effects of climate change. Led by Tonkin & Taylor the research project titled 'Stormwater, waste water, climate change: impacts on our economy, environment, culture and society' consists of a research team with a multifaceted range of expertise. This includes members of councils and government, University representatives and members representing the iwi community. Along with this broad range of insight are NIWA and Infometrics brings in their effective economic insight. The aim of the year long project will be to look at the risks to water ways and identify the extent of impact it will have on New Zealand providing a detailed 'theory of change' report to conclude the project. This report also has a strong potential to impact the international community by offering a framework for climate change management

Beacon System Success!

Beca

BECA has been recognised for its recent innovation known as the Beacon System that has been developed in response to national earthquakes since 2013 and International studies on earthquakes in regions such as Nepal. The Beacon System is technology that enables BECA clients to measure the structural integrity and stability of their workplace buildings using a more time efficient and safe process. The Beacon System has recently been awarded the 2018 Most Innovative Hi-Tech Service Award at the New Zealand Hi-Tech awards. The Beacon System is still in its early days on the hazard management market and with such early success the future is looking very bright for this creation as well as its creators at BECA!



Members of the BECA team and creators of the Beacon System

For more information on Beca and the Beacon System contact Tony Pettigrew: tony.pettigrew@beca.com



RMI training- Marshall Islands stakeholders are trained in the RiskScape water resource model

NIWA

Modelling Water Resources in the Marshall Islands



Project stakeholder in the Marshall Islands presents the Water Resource Summary Report

NIWA has released a new water shortage model for Pacific atoll countries. Incorporated as a module in the RiskScape Natural Hazard software programme, the model helps Pacific atoll countries to estimate water resources due to various rainfall and water consumption scenarios. Tested and developed for the Republic of the Marshall Islands (RMI) and trialed in Tuvalu, the model will help atoll countries to better prepare for water shortages and drought.

The approach was co-developed as a proof-of-concept with RMI stakeholders focusing on three RMI atolls. The completed module was presented to the Government of RMI in June this year, and key stakeholders trained in its use. Following positive feedback, the Marshall Islands government has requested assistance from NIWA to extend the tool to include nine additional atolls. This will allow the Marshallese government to use the model to plan ahead, target and respond to atolls with the most pressing water shortages. This additional work will take place over the next six months, and will be supplemented with additional training, including establishing key focal points in the Marshall Islands National Disaster Management Office (NDMO). Other Pacific countries have also expressed an interest in using this model in the near future.

The Modelling Drought for Atolls project is being delivered through NIWA in partnership with Marshall Islands NDMO, and has been funded by the New Zealand Ministry of Foreign Affairs and Trade (MFAT). The MFAT funded and NIWA implemented PARTneR project (<https://www.niwa.co.nz/natural-hazards/research-projects/partner>) is contributing to the expansion of the model beyond the initial proof-of-concept.

For further information, please contact NIWA Climate Scientist Juli Ungaro (juli.ungaro@niwa.co.nz) ph: +64-4-382-1617

SNAPSHOTS

Survive-it + Disaster Prepare

www.survive-it.co.nz
www.disasterprepare.co.nz



Survive It Ltd and partner Disaster Prepare Ltd. continue to provide disaster prepare kits and education for any situation. Survive-It and Disaster Prepare cater for all aspects of disaster prevention and management. Grab and go kits, Spill kits and emergency food and water kits are just some of the many options they are offering.

StIRRRD

www.stirrrd.org



StIRRRD team members travelled to Palu, Central Sulawesi from the 5th-9th of March to launch Indonesia's first Seismometers in schools (SIS) programme. SIS involves installing seismometers in schools as tools to increase awareness of seismic hazards and risks. Information on seismometers can be analysed by mathematics, physics or geography students to assess earthquakes recorded locally from around the world.

Bloxam Burnett and Olliver Ltd and Tonkin & Taylor

www.tonkintaylor.co.nz
<http://bbo.co.nz/>



Both Bloxam Burnett and Olliver (BBO) and Tonkin & Taylor have been involved in the construction of six bridges throughout Fiji. This project involved collaboration with Fulton Hogan and was completed for the Fiji Roads Authority (FRA).

Aon

Earlier this month Aon's global headquarters released a report regarding the rise in natural disasters around the world throughout June 2018. The report detailed volcanic eruptions in both Japan and Guatemala resulting in loss of life and environmental destruction. Rising water levels from heavy seasonal rain in many parts of Asia and non-seasonal flooding in Ghana, Nigeria and nationally here in New Zealand. Aon continues to release these natural disaster records each month and summaries as well as the full pdf can be found on the global website.

Clendon Burns and Park Ltd.

<http://www.cbp.co.nz/>

Consulting Engineers Clendon Burns and Park Ltd. have been completing multiple projects from St Marys Church, Amesbury school and Te Hopia Rest Home and Hospital in Wellington. Director Phillip Yong recently gave a presentation at a Natural Hazards Inc. meeting on their international projects.



www.aon.co.nz

Robinson Seismic Ltd.

Robinson Seismic Ltd. who began supplying materials for the Jakarta LRT project in March 2017 and are now involved in another Indonesian project. Robinson Seismic Ltd have been assisting in the Jakarta based Cikampek Elevated Toll Road project. With construction nearly underway Robinson Seismic Ltd are involved with the production of 654 Lead Rubber Bearing SD Units and 946 Lead Rubber Bearing SE units with the potential for more to be confirmed as construction moves forward. Robinson Seismic Ltd. is continuing to broaden the business through international projects much like the Cikampek Elevated Toll Road project

www.robinsonseismic.com/



Ph +64 21 1482140
kate.canderle@robinsonseismic.com

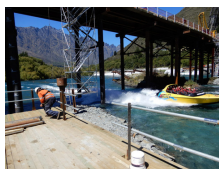
Silvester Clark Consulting Engineers

Silvester Clark had the honor of hosting a Natural Hazards Inc. business cluster meeting in June this year. The meeting featured a presentation by Silvester Clark Consulting Engineers Managing Director/Principle Scott Miller. The presentation focused on Scott's experiences in Earthquake devastated zones and the important factors surrounding Search and Rescue procedures. Scott has worked in Earthquake zones in Japan, Indonesia and New Zealand's Christchurch earthquake as part of the New Zealand Urban Search and Rescue taskforce (NZUSAR). Scott continues to represent the efforts of Silvester Clark Consulting Engineers with his engineering expertise on disaster prevention and repair, the work of NZUSAR.

Scott Miller - Scott.Miller@silvesterclark.co.nz

<http://www.silvesterclark.co.nz/>

Jeff Bryant Geoconsulting Ltd.



Jeff Bryant geoconsulting specialises in geotech, assists with planning for new subdivisions bridgework, tourism, mountain bike and walking trails. Well placed to provide geotech input to engineering and architectural project teams for international and New Zealand Based work. jeffbryant@ihug.co.nz

Canterbury Seismic Instruments Ltd.

Canterbury Seismic Instruments Ltd. continue to provide world wide support in the area of earthquake resilience through the use of their seismic monitoring instruments. The initial supply of these instruments in 2003 was to New Zealand's national strong motion seismic network Geonet. From here Canterbury Seismic Instruments began developing their CUSP monitoring systems. Canterbury Seismic Instruments Ltd. now have their seismic systems installed in buildings, dams, bridges and tunnels in Asia, Europe, South America, Scandinavia and Iceland.



<http://www.csi.net.nz/>

Earthquake Engineering Education - Bandung Indonesia

Professor Andrew Charleson, Victoria University School of Architecture



Professor Andrew Charleson presenting a guest lecture at the University of Technology Bandung

Associate Professor Andrew Charleson is well known for his knowledge and expertise in the field of earthquake architecture and engineering, having spent 31 years at Victoria University. 35 Years ago Andrew worked in Bandung, Indonesia for 2+ years and in this time helped to introduce the first Indonesian seismic code. He has continued to assist developing communities through his work as an expert in earthquake-resistant structural design. Earlier this year Andrew returned to Bandung, Indonesia for three months for a voluntary professorship at UNPAR University Bandung. It was here he was able to get a better picture of the state of structures within the region and the level of earthquake education being taught to architecture and engineering students, as well as lecturers alike. While in Bandung Andrew visited five other schools of architecture and was surprised after talking to students and fellow teachers to see there was room for much more education in the area of earthquake engineering. Many teachers were enthusiastic about teaching the content. Andrew is hopeful that he can make a positive impact on new initiatives to help educate lecturers through some in-country and or experience in New Zealand which would give fantastic insight into high standards of earthquake-resistant design.

If you would like to know more about Professor Andrew Charleson, Victoria University School of Architecture and potential education initiatives please contact: andrew.charleson@vuw.ac.nz

EVENTS

ISCRAM

5-7 November

Information Systems for Crisis
Response and Management

Conference with Co- chairs
Raj Prasanna and Mahesh
Prakash and international
governance committee co-
chairs Murray Turoff and
Peter Wood

Museum of New Zealand, Te Papa
Tongarewa Wellington, New Zealand

confer.co.nz/iscramasiapacific2018

Pacific Resilience Partnership

1 October

Suva, Fiji. For more
Information [Howard.Markland@m](mailto:Howard.Markland@mfat.govt.nz)
fat.govt.nz

NZ Indonesian Association with Indonesian Embassy

5

September

7.30pm

Special presentations:

Michele Daly, GNS Science - STIRRRD
Project

Professor Andrew Charleson -
Earthquake Architecture Education in
Bandung

For more information contact:

Graeme Carroll

Ph: +64 4 470 5554

E: [Graeme.Carroll@globalreac](mailto:Graeme.Carroll@globalreachassociates.com)
hassociates.com

Natural Hazards Inc. Members' Expertise

- Strategies for disaster risk reduction, readiness, response and recovery.
- Development of organisational frameworks for emergency management.
- Emergency management education.
- Community preparedness for natural disasters.
- Multi-Hazard land use planning.
- Improvement of building controls, standards and codes.
- Seismic retrofit strengthening of buildings, including simple houses.
- Seismic isolation of important buildings such as hospitals, schools, emergency management centres, government buildings, apartment buildings and heritage buildings.
- Tsunami and flood risk assessment, modelling and mitigation strategies.
- Disaster risk insurance strategies and systems

Interesting links

New Zealand Society for Earthquake Engineering -
www.nzsee.org.nz

Pacific Disaster Net- www.gsd.spc.int/pacific-disaster-net

Canterbury Earthquakes Royal Commission-
www.canterbury.royalcommission.govt.nz

natural
hazards inc.



For more Information

natural
hazards inc.



www.naturalhazards.co.nz

New Members Always Welcome!



Co- Chair

Greg Szakats

Miyamoto International NZ Ltd

M +64 27 589 1055

[gszakats@miyamotointernational](mailto:gszakats@miyamotointernational.co.nz)
.co.nz

If you are interested in joining Natural Hazards Inc. we have a range of membership options available. For more information on how to join or to find out more about Natural Hazards Inc. please visit our website www.naturalhazards.co.nz/join-us/ to complete an application form.

You can also contact Co-Chairs **David Johnston, Greg Szakats** or Facilitator **Graeme Carroll** for more details!



Facilitator

Graeme Carroll

Graeme.Carroll@globalreachassociates.com

Ph: +64 4 470 5554



Co- Chair

Prof. David Johnston

Massey University

David.Johnston@gns.cri.nz

Ph: +64 4801 5799

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www.naturalhazards.co.nz