

## February 2014

This month's edition provides insights into two of our members' recent developments which have come through years of dedication and a passion to help make lives safer in the future, based on personal experiences and a drive to be the best in their field.

2014 promises to be a year of action from meetings Graeme and I have attended recently and we look forward to being part of this as the year moves on.

On the international front, Elliott Kirton from MFAT recently visited the Philippines and advises that discussions are underway which may offer the opportunity for members to be involved in projects over the next 12-18 months. Once we know more details members will be advised.

A new link for the Victoria University Earthquake Hazard Centre January 2014 newsletter is also provided under the links section.

Blair Griffiths, Co-Facilitator

## From the Co-Chairs:

Welcome to the first newsletter of 2014. We thank Graeme and Blair for their continued support and facilitation for Natural Hazards Inc., which we are all aware is only partially funded from membership fees.

We ask that members who are yet to pay their fees please do so in a timely manner, and also remind members that as we are no longer funded by agencies outside the Cluster we rely on your financial support to keep Natural Hazards Inc. functioning.

With this in mind, it is timely to mention that contracts and projects won through introductions by Cluster members or facilitators should be recognised by way of a "voluntary contribution", based on the size of the contract/project. A table is provided at the end of this newsletter for easy reference, and we thank those members who have made contributions in the past 12 months – it is greatly appreciated.

With much of the year ahead of us, we look forward to seeing you at the next meeting on 27<sup>th</sup> February and discussing strategies and opportunities for Natural Hazards Inc. in the coming months.

Greg Szakats & Hannah Brackley, Co-Chairs



## Recent News – Projects Underway by Cluster

### Members:

**Noel Trustrum** of GNS Science, our previous Co-Chair, has launched a Photobook Project celebrating 10 Years of Recovery in Aceh.

Noel is currently in Aceh taking the repeat photography and interviewing researchers, industry, local government officials and tsunami survivors, 10 years since leading with Tan Pham the initial Natural Hazards NZ Business Cluster mission to Aceh following the Indian Ocean Boxing Day Tsunami.

He launched this project in Jakarta with the NZ Ambassador to Indonesia, David Taylor, just prior to Christmas last year. This important project initiative has also been officially endorsed by Dr Kuntoro Mangkusubroto, former Head of the Rehabilitation and Reconstruction Board (BRR – Badan Rehabilitasi dan Rekonstruksi) and now Head of the Indonesian President's Delivery Unit for Development Monitoring and Oversight (UKP4).

You can find the newly established project website at:  
**[www.acehrevives.com](http://www.acehrevives.com)**

And also view the video that outlines this either via the website or youtube: **[http://youtu.be/Wap\\_gGRqx5I](http://youtu.be/Wap_gGRqx5I)**

The first photobook Noel published – “Scars: Life after the Tsunami” – is available from him for \$35 a copy (towards costs).

For the new photobook, he is working closely with Indonesia based publisher Saritaksu Editions, well known for producing artistic and culturally sensitive books.

This new publication is being created as an expression of gratitude and inspiration to the many individuals and their organisations from donor countries, NGO's, the private sector, the United Nations, the Asian Development Bank and the World Bank who assisted the recovery.

Additional sponsors are still needed to help with the costs of producing this new photobook – so any contributions are welcomed. Please refer this on to anyone else who you think may be able to assist.

### For follow up contact:

Dr Noel Trustrum,  
Development specialist, scientist & photographer,  
GNS Science  
[n.trustrum@gns.cri.nz](mailto:n.trustrum@gns.cri.nz)  
Phone: +64 21 242 5287 and +64 4 570 4690

### New Developments:

CSI Ferroskan have over the past 2 years developed and refined their diagnostic tools for concrete structures, to provide a state of the art analysis for building owners wanting to know the current positioning of the building and allowing them to plan for maintenance as required.

CSI Ltd uses two kinds of scanners for reinforced concrete and block wall investigations:

The **Hilti PS 200 Ferros scanner** is a metal detector that detects the magnetic field of metallic objects in the concrete structure or block work. It has a penetration depth of 100 mm. The appropriate Software allows the PS 200 to determine bar sizes and covers. However, this device only detects metallic objects and does not detect plastic conduits, voids and cavities.

The **Hilti PS 1000 X-Scan** is based on ground penetrating radar and allows a much greater penetration into the wall or column, up to 300 mm. It is not possible to determine bar diameter with this scan, but spacing can be determined and cover may be estimated. Furthermore this device allows detection of voids and cavities as well as non-metallic objects in the concrete structure or block wall. An integrated EMsensor allows also the detection of electrical wires under voltage.

**Imagescan (PS 200):**

An Imagescan recorded by the Hilti PS 200 covers a square area up to 600 x 600 mm. A template grid is used to guide the machine and ensure accuracy for a proper scan. This scan provides raw data that is then interpreted by computer software. After analysis using the software, verified bars are shown in blue and probable or possible (not verified) bars are shown in light green. Other shadows on the scan may, or may NOT, be something significant, but cannot be considered for analysis. For further information, additional scans, physical investigation by drilling or removing concrete to physically inspect the bars is required. In this scan also the size (diameter) of the bar as well as the cover (concrete) over the bar can be determined.

**Imagescan (PS 1000 X-Scan):**

Imagescans undertaken by the PS 1000 X-Scan cover an area of 600 x 600 mm up to 1200 x 1200 mm. The PS 1000 X-Scan also uses a template grid to ensure an accurate scan. The reflections of the radar waves caused by objects in the concrete are recorded and are interpreted by computer software. The Imagescan obtained shows a plane view as well as a horizontal and vertical cross view of the scanned section. This allows an exact determination of the reinforcing bars, which may include multi-layer bar configurations. Furthermore, this

scan allows the analysis of a 3-dimensional image of the object under investigation.

**Blockscan (PS 200):**

The Blockscan is a product composed of 3 x 3 Imagescans and it is performed by the PS 200. The Blockscan provides an overall view of an 1800 x 1800mm square area. This scan allows the user to see the general layout of the steel within the scanned area, the single Imagescans will then determine bar diameter and concrete cover of the scanned bars.

**Quickscan (PS 200 and PS 1000 X-Scan):**

Quickscans can be undertaken with both devices, the Hilti PS 200 and the Hilti PS 1000 X-Scan, and allow the fast scanning along a particular distance to locate and record the position of objects over the scanned length (max. 10 m). The recorded scan has a width of 150 mm. This scan may be done top to bottom, or bottom to top to check for horizontal bars. It may also be done left to right, or right to left to determine vertical bars and the location of stirrups.

**For further information** please check the website or phone Michael Roach:

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

Ph: 0800 33 77 67

## 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

For the latest news and events from other organisations:

- CERA (Canterbury Earthquake Recovery Authority): [www.cera.govt.nz](http://www.cera.govt.nz)
- Canterbury Earthquakes Royal Commission: <http://www.canterbury.royalcommission.govt.nz>
- New Zealand Society for Earthquake Engineering: [www.nzsee.org.nz](http://www.nzsee.org.nz)
- NZ Aid Programme: [www.aid.govt.nz/](http://www.aid.govt.nz/)
- Earthquake Hazard Centre – Victoria University: [http://www.victoria.ac.nz/architecture/pdf/Vol\\_17\\_3\\_2014\\_January.pdf](http://www.victoria.ac.nz/architecture/pdf/Vol_17_3_2014_January.pdf)

## Natural Hazards Inc. Key Contacts

### Co-Chairs:



**Dr Hannah Brackley**  
GNS Science  
+64 4 570 4564, +64 21 481 581  
[h.brackley@gns.cri.nz](mailto:h.brackley@gns.cri.nz)



**Greg Szakats**  
URS Limited  
+64 4 496 3760, +64 21 680 387  
[greg.szakats@urs.com](mailto:greg.szakats@urs.com)

### Facilitators:

#### **Graeme Carroll and Blair Griffiths**

Global Reach Associates Limited

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

[Blair.Griffiths@globalreachassociates.com](mailto:Blair.Griffiths@globalreachassociates.com)

PO Box 10681

Wellington 6143

New Zealand

+64 4 470 5554, +64 21 435 401

**Suggested Range of Voluntary Contributions for Project Fee Commissions:**

Job Type	Commission				Examples	
	1st \$20,000	Next \$20,000	Next \$20,000	Remainder to \$700,000	Fee	Commission
<b>A. Direct Award</b>	10%	5%	2%	1%		
Increment	\$2,000	\$1,000	\$400	\$6,400	\$1,000,000	\$9,800
Cumulative	\$2,000	\$3,000	\$3,400	\$9,800		
<b>B. Assisted Award</b>	5%	2.50%	1%	0.50%		
Increment	\$1,000	\$500	\$250	\$3,200	\$1,000,000	\$4,950
Cumulative	\$1,000	\$1,500	\$1,750	\$4,950		
<b>C. Own Initiative and Cost with Cluster Profile Contributing</b>	2%	0.50%	0.25%	0.13%		
Increment	\$400	\$100	\$50	\$832	\$1,000,000	\$1,382
Cumulative	\$400	\$500	\$550	\$1,382		