



*CTS Management Committee, 14<sup>th</sup> November 2007*

## CTS Celebrates 30 years of Service to the Community

November 2007 marks the 30<sup>th</sup> Anniversary celebrations of the Station. The Station was established in Nov 1977 shortly after Cyclones Althea (1971) and Tracy (1974). Foundation Station Director, Emeritus Prof. Hugh Trollope visited Townsville on 14<sup>th</sup> November to celebrate this occasion.

At the CTS 30<sup>th</sup> anniversary dinner Hugh, for his drive to establish the Station, was presented with an Outstanding Vision Award by former CTS Technical Director Greg Reardon.



*Hugh Trollope receiving his award from Greg Reardon*

The other awards presented on the night were to Dr Kevin Macks for Outstanding Contribution and to Mr Nev Keating for Outstanding Service.

The celebrations included a tour of the Research and Testing Facilities, AirBox Facility, Wind Tunnel and Air Cannon.



*Tour of research/testing facilities for Anniversary*

To coincide with the celebrations a 30 Year Commemorative Report was produced. The report can be downloaded from our web site.

## New Benefactor and New Sponsor for CTS.

The Station extends a warm welcome to Willis Re, the latest benefactor of the CTS. Willis Re joins the Queensland Government Dept of Public Works, BlueScope Steel, BlueScope Lysaght, Stramit Building Products, IAG and the Townsville City Council as a CTS Benefactor.

This year we also welcomed the Queensland Master Builders Association as a new Sponsor.

The Cyclone Testing Station is grateful for the ongoing support from its benefactors and sponsors. This untied research funding allows the CTS to continue its work in a number of ways, including: building community awareness, standards development, fundamental research and support in post disaster damage investigations.

## Construction Issues

### *As strong as the weakest link*

Damage surveys following events like Tropical Cyclones Ingrid, Larry and George show the majority of contemporary construction (built since the early 80s) remained structurally sound, that is, remained intact and protected the occupants. However, the vast majority of houses suffered water ingress and the Station did note with alarm a small percentage of newer houses and light industrial sheds had significant structural damage due to errors in the design and/or poor construction.

Errors in design have included the use of low design site wind speed by not accounting for nearby open terrain or wind speed up on slopes, or not considering to allow for full internal pressure, following a failed door or broken window. The misinterpretation of these design criteria results in the use of components and connections of inadequate strength to withstand the design wind loads and consequently leads to a higher probability of failure.

Inspections of houses under construction in both cyclonic and non-cyclonic regions have revealed common construction faults that can significantly reduce the capacity of structural elements, leading to the failure of the structure. Typical faults were missing framing anchors, misalignment of truss cleats, minimal fixings for windows and incorrect truss spacings and poor fixing installations. A missing or poorly installed fastener can result in the failure of a building, as adjacent fixings are overloaded and fail in a cascading process. Design standards and manufacturers data do not account for these types of faults or poor construction practices.

Remember, we are all a part of disaster mitigation. The resilience of our communities is up to all of us.



Failure of shed following Cyclone Larry



Roofing screws missed top hat batten



Gun nails over driven in bracing panel

## Technical Alerts

The Station has issued two Technical Alerts this year:

- Technical Alert No. 07/1 dated 25 May 07 on Light Gauge Metal roof Battens in Cyclonic Areas.
- Technical Alert No. 07/2 dated 1 October 07 on Low-High-Low, a Standardized Cyclic Test Method for Cyclonic Areas.

Copies of Technical Alerts can be downloaded from our website.



## Display & Tour at 12 ICWE Conference

The Twelfth International Conference on Wind Engineering was held on July 1-6 2007 at the Cairns International Hotel, Australia. It is one of a series of meetings held every four years that started in 1963 to promote and facilitate cooperation and exchange of ideas among researchers and engineers worldwide in Wind Engineering and related fields of study. Over the years, ICWE has made considerable progress in providing an international forum for highlighting individual and national accomplishments and future research directions.

Four Station Engineers presented papers at the conference. Cam in conjunction with a prominent local builder, also organised a site tour of residential building construction in cyclonic regions for about 40 delegates from both Australia and overseas.

Feedback from the delegates who attended was very positive and many of the international delegates remarked that they were very impressed with Australian cyclonic wind resistant construction.



*Conference delegates on site tour in Cairns.*

## Staff Changes 2007

At the November Management Committee Meeting (picture on Page 1) our long standing Chairman Mr Neville Keating retiring as Chair. The Deputy Chair Mr Doug Meecham was unanimously elected as the incoming Chairman.

### *“Thoughts from the new Chair”*

"As incoming chairmen of the CTS Management follow in the footsteps of the three former chairmen: the late Mr Theo Wilkinson, Dr Kevin Macks and our outgoing chairman Mr Neville Keating, it is my hope we, as the new management committee, can build on their fine legacy and leave the station in as good as a position as we have inherited. Our role is to offer guidance to the station's excellent staff and operations in the University environment and I look forward to establishing and maintaining contact with many interested colleagues who have a genuine interest in the field of wind engineering and its application to the building and other industries." Doug Meecham.

Our Research Director, Dr John Ginger is on 6 months study leave at the UWO Wind Tunnel Facility in London, Ontario, Canada. John took his family on leave and is due to return to JCU in February 2008.

Cam Leitch, Acting Manager for the Station welcomes Roger Kiely as a new CTS Technical Officer to assist Don Braddick in providing testing services.

Peter Kim and Ulrich Frye are working as Research Engineers.

As this newsletter goes to print we are conducting interviews for a new Research Engineer.

Our former Manager, David Henderson, is continuing his PhD studies in Wind Research at James Cook University and continues to assist the Station as a part-time Research Engineer.

## Words from Cam Leitch, Acting Manager

It has been a busy year for the Station. We had a strong presence at the 12<sup>th</sup> International Wind Conference, held in Cairns in early July where we presented five research papers and organized a site tour of new cyclone resistant housing for interested conference delegates.

As reported elsewhere, a highlight of the year was our 30<sup>th</sup> Anniversary celebrations, it was pleasing to have many of the Station's friends and eminent people, formerly involved with the Station, attend the 30<sup>th</sup> Dinner.

John Ginger is relishing his time on 6 months Special Studies Leave; he is undertaking research at the University of Western Ontario in Canada. It is a great opportunity for John and I am sure that he will return all enthused, ready to lead the Station's research in 2008.

The Station had a visit from a National Association of Testing Authorities (NATA) accreditation team in August and we anticipate achieving NATA accreditation by March next year.

Next year promises to be even more exciting. There is a very strong demand for testing services, especially airbox testing using the new Low-High-Low test, required for metal roofing in cyclonic areas. We are in the process of modifying our airbox so that we can set-up a second test-bed to increase our test throughput.

In another development, the Station is liaising with the state government building departments of the three cyclone states (Qld, NT and WA) for funding assistance for a proposed three year program involving research, education and training and up skilling of the construction industry, relevant to community protection during extreme wind events.

Another significant change for next year is the retirement of our Chairman, Mr. Nev Keating. I will take this opportunity to thank Nev for his 20 years of service to the CTS Management Committee, especially for the last seven years in his role as Chairman. I also want to extend a warm welcome to our new Chairman, Mr. Doug Meecham and our two new patrons, Prof Sandra Harding (Vice Chancellor of JCU) and Mr. Don Fry, the Chairman of Aimtek Pty Ltd.

## Christmas Greetings



The Staff of the Station Wish you and your family a very Happy and Safe Christmas season and look forward to working with you in 2008.



*Don, Jeff (HoS), Cam, Peter, Ulrich, David, Andrew, John & Gail.*

## Newsletter online

The colour newsletter is available from our web site as a pdf on [our website](http://our website) To receive future colour newsletters via email please subscribe at [www.jcu.edu.au/cts](http://www.jcu.edu.au/cts)