



International Insurance Conference Catastrophe Events A Challenge

10 - 12 April 2012

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The Catastrophe Challenge in Asia
Karachi, Pakistan

Agenda

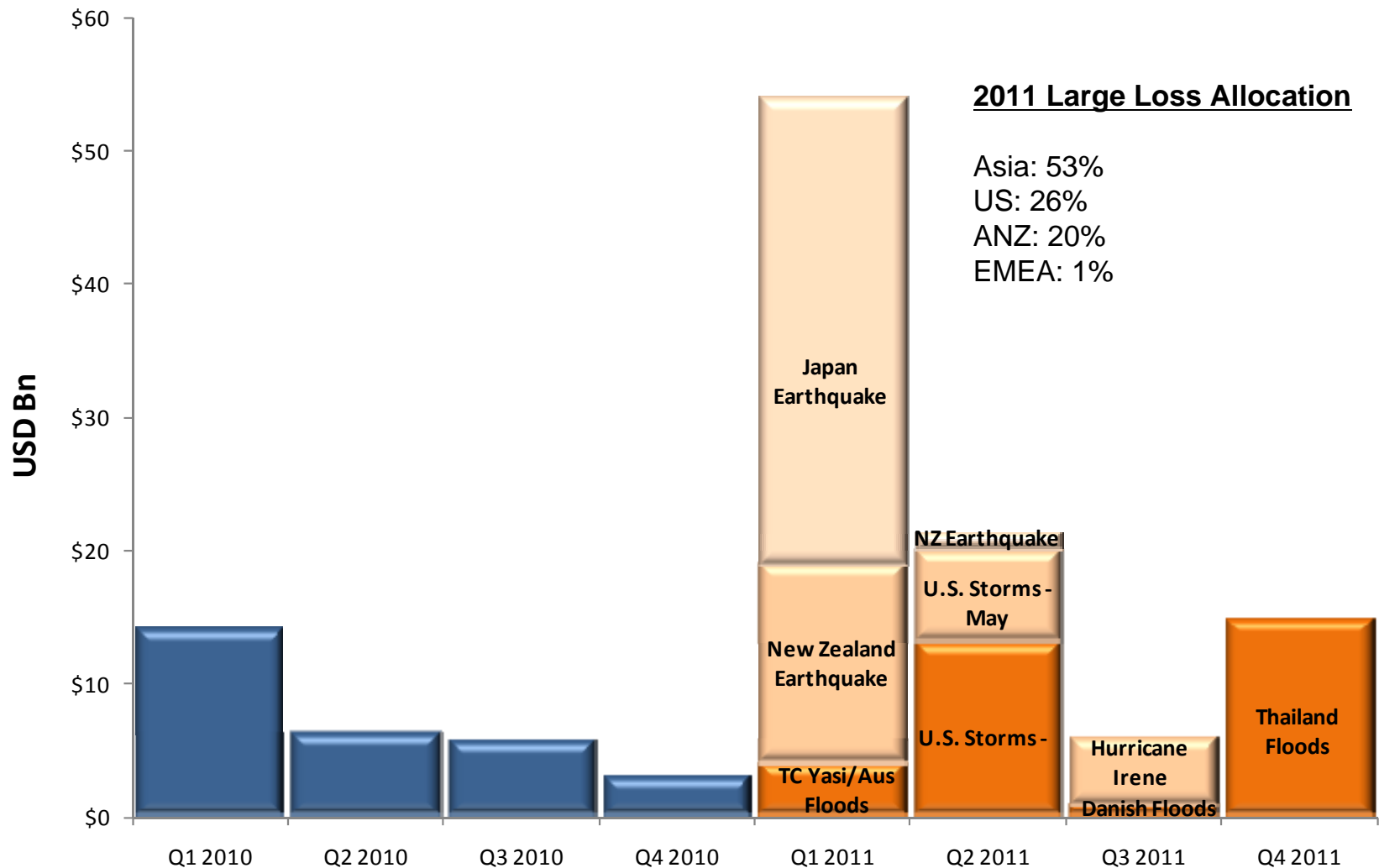
1. Catastrophe Losses / Results
2. Catastrophe Events – what can we learn?
3. Loss Valuation, Mitigation and Reconstruction
4. Conclusion

CATASTROPHE LOSSES / RESULTS

The background of the slide is composed of several horizontal bands of color. At the top is a solid dark blue band. Below it is a medium blue band. The bottom half of the slide features a light blue wavy band that tapers from left to right, set against a teal background that also tapers from left to right.

Significant Catastrophic Losses - 2010 to 2011

Losses over \$1bn Approximately Three Times Higher Than 2010



Insured CAT Losses vs Annual Non-Life Premium

- Thailand Flood 2011: \$12 bn vs \$4.5 bn = > **266%**
- New Zealand EQ 2011: \$14 bn vs \$7.0 bn = > **200%**
- Japan Earthquake 2011: \$35 bn vs \$97 bn = > **36%**
- Hurricanes KRW * 2005: \$65 bn vs \$611 bn = > **11%****

- Thailand Property (Fire+IAR) premium: **\$0.6 bn**

* KRW = Katrina, Rita, Wilma

** at 2005 USD price level

Historical flood losses in perspective

Date	Country	Insured loss, at 2011 prices, in USD m	Insured loss, as a % of country's property premiums	Insured loss, as a % of country's non-life premiums	Insured loss as % of GDP	Economic loss as % of GDP
Jul - Nov 2011	Thailand	12000	2000%	266%	3.4%	8.6%
Aug-02	Germany & Czech Rep	2886	20%	3.0%	0.1%	0.5%
Jun-07	United Kingdom	2697	12%	2.2%	0.1%	0.1%
Aug-05	Switzerland	2444	76%	11.7%	0.6%	0.9%
Jan-11	Australia	2255	24%	5.9%	0.2%	0.4%
Jul - Aug 1997	Poland & Czech Rep	2241	213%	42.3%	0.8%	2.3%
Jul-07	United Kingdom	2158	9%	1.7%	0.1%	0.1%
Dec-10	Australia	2114	27%	5.9%	0.2%	0.4%

➔ Thailand 2011 was the largest insured fresh water flood loss in global history

Cycle – Where Are We Now? The 'Dowling Wheel'



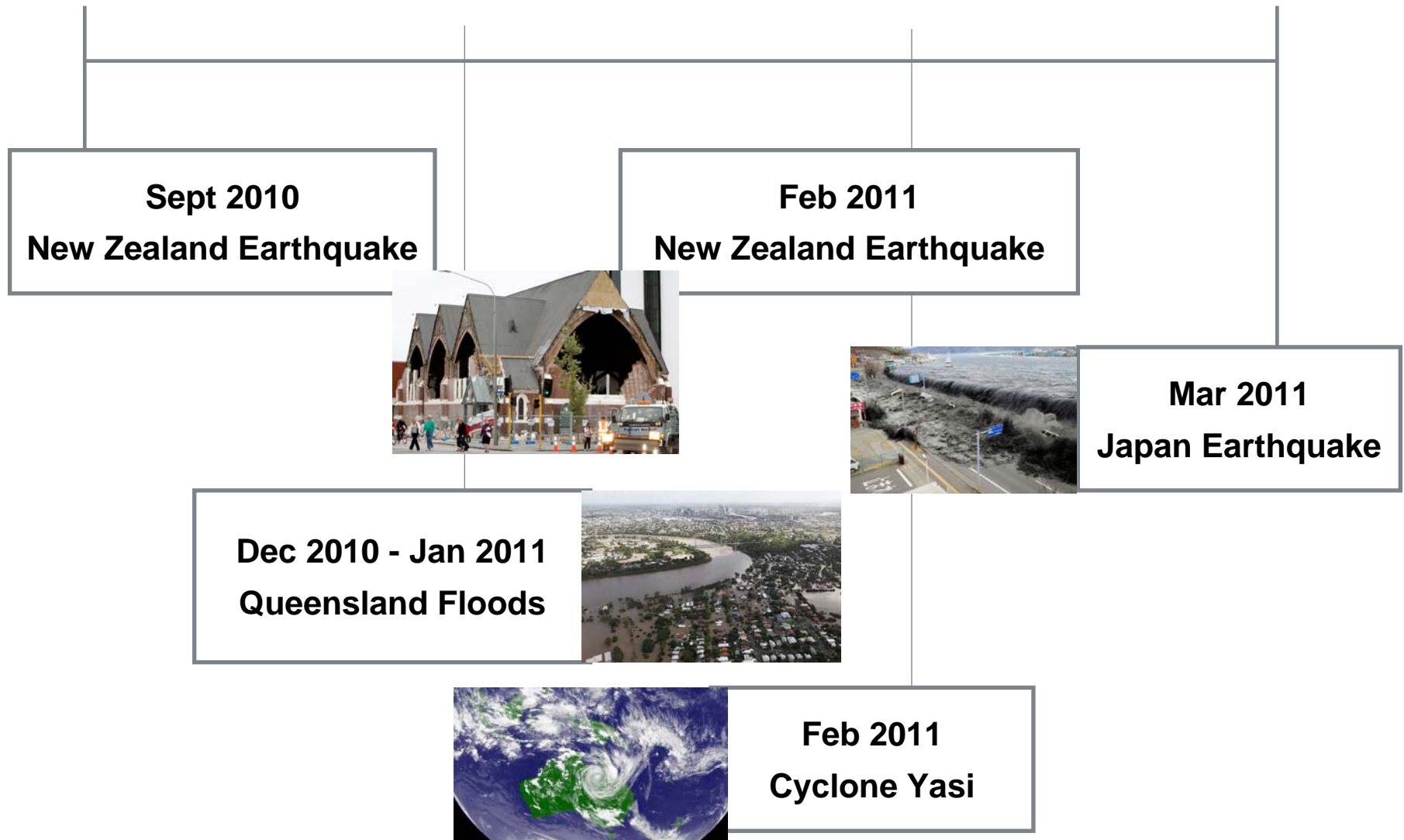
Cycle Drivers

- Capital
- Economic Climate
- External Forces

CATASTROPHE EVENTS - WHAT CAN WE LEARN?

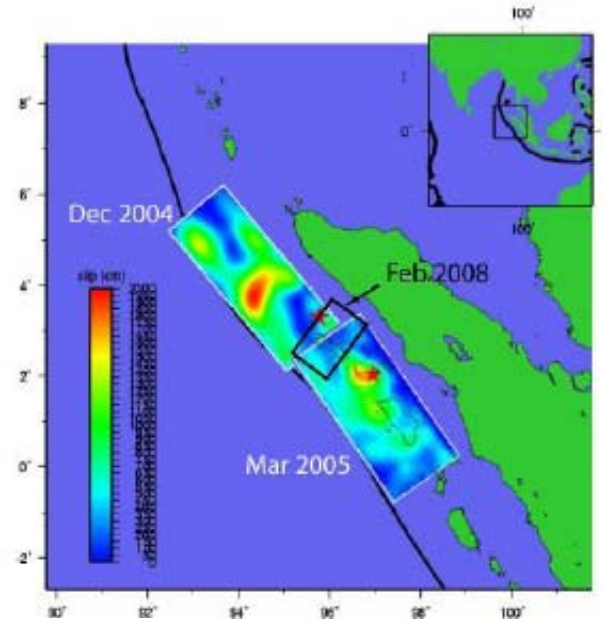
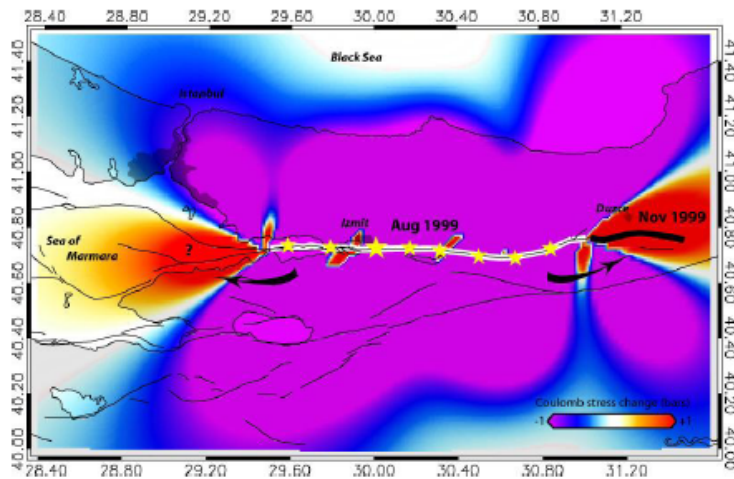
The background of the slide is composed of several overlapping, wavy, horizontal bands of color. At the top is a solid dark blue band. Below it is a medium blue band. The next band is a light blue band with a wavy, undulating top edge. The bottom-most band is a teal or cyan color, also with a wavy top edge. The overall effect is a modern, abstract design.

Catastrophe in Asia – Preparing for the Next One



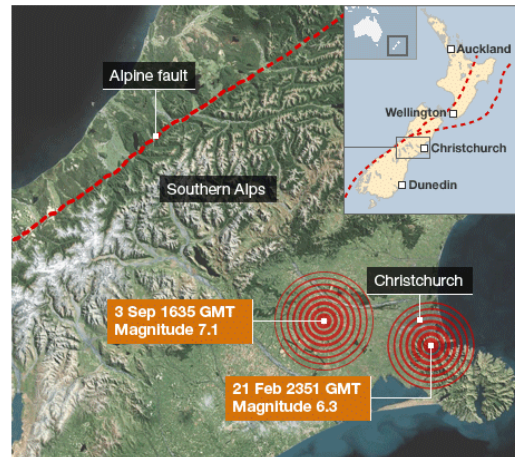
What worries me? – Earthquake Clustering

Turkey



Indonesia

New Zealand



What worries me? - Floods



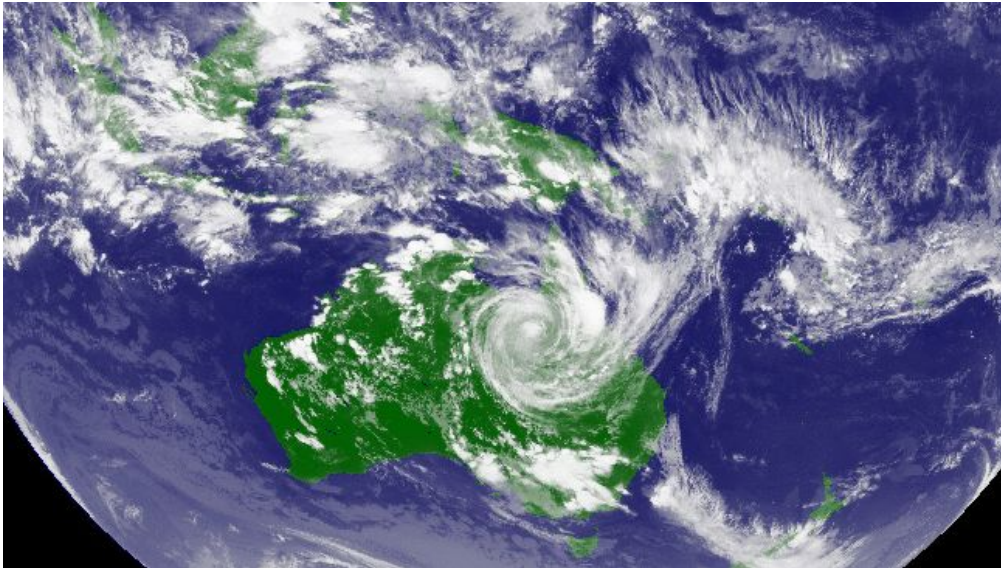
Source: Bangkok Metropolitan Administration's Flood Control Centre.

POSTgraphics

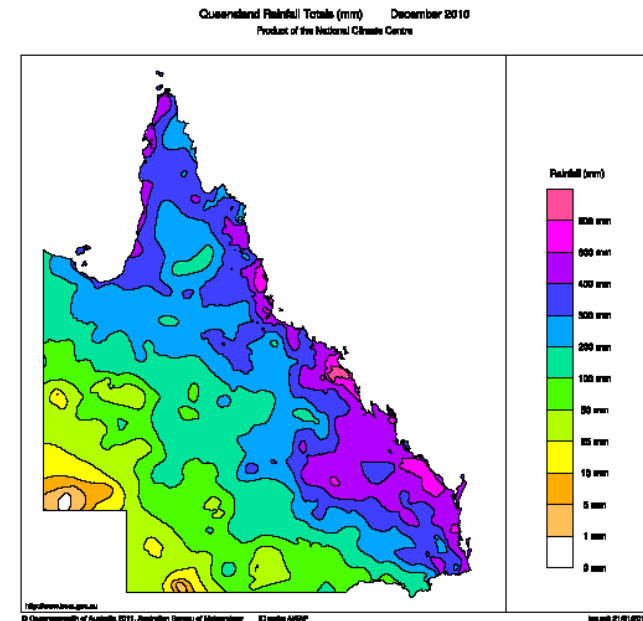


Source: Bangkok Post, NYDaily News, Global Post 10

What worries me? - El Nino/La Nina



Satellite image of Cyclone Yasi

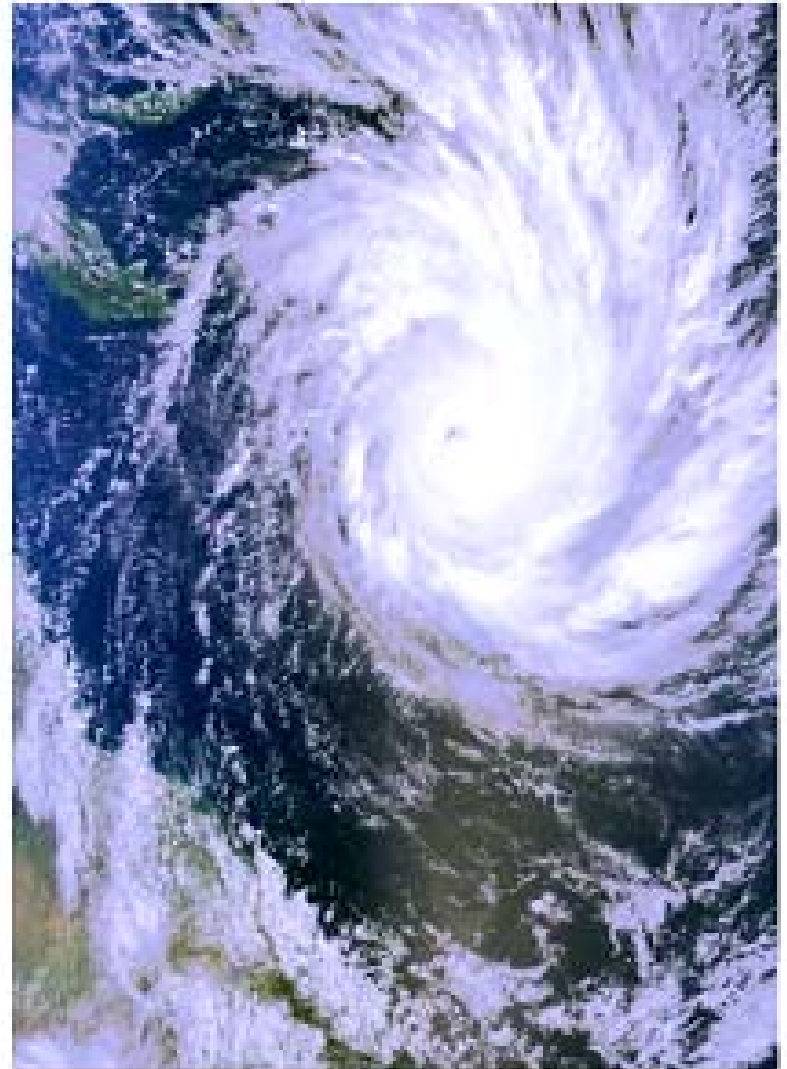


Queensland Floods: December 2010

For the first time since the 1970s, the weather pattern La Nina is showing some odd characteristics. The weather bureau says the Pacific Ocean is warming, and that normally means an end to the pattern which typically brings more rain to Australia's east. But this time, the atmosphere is acting like La Nina is still around, and it's causing a bit of confusion.

2011 Cyclone Yasi

- Cyclone Yasi made landfall between Innisfail and Cardwell on the 3rd of February 2011.
- Banana and sugarcane plantations were severely damaged; power, telecommunications and the mining industry also took a huge hit. Approximately 180,000 homes lost power.
- The maximum winds from Yasi (maximum gust 285km/h) were stronger than those from Larry in 2006.
- Storm surge heights reached up to 5.4 metres.



Volcanic Eruption in Indonesia

What could happen to its surrounding neighbours if a volcano in Indonesia erupts?



What worries me? – Climate Change

**INSURANCE
JOURNAL**

International News

Is Global Warming Causing More Frequent, More Powerful Hurricanes?

July 21, 2010

FT.com
FINANCIAL TIMES

TECHNOLOGY
SCIENCE

World is growing warmer, but pace slows

By Clive Cookson In London

Published: November 26 2010 00:11 | Last updated: November 26 2010 00:11

September 1st, 2010

Global Warming Does Not Lead to More Typhoons

Posted at 1:00 AM ET

GC Editor

Johnny Chan, Dean, School of Energy and Environment, and Director, Guy Carpenter Asia-Pacific
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LOSS VALUATION, MITIGATION AND RECONSTRUCTION

The background of the slide is composed of several overlapping, wavy, horizontal bands of color. At the top is a solid dark blue band. Below it is a band of a medium teal color. The next band is a lighter, pale blue color, which has a wavy, undulating top and bottom edge. The bottom-most band is a bright, vibrant teal color, also with wavy edges. The overall effect is a modern, abstract design with a sense of movement and depth.

HOW THE RIGHT LEVEL OF COVER IS CALCULATED

An experienced valuer will calculate new replacement cost using their technical capability and experience, by determining correct capital cost estimations, benchmarking and analysing specific replacement cost factors. The process of valuation follows a consistent series of steps. See Chart below.

INSTRUCTIONS

- Requirements for valuation agreed including basis of valuation.
- The basis most commonly chosen is Replacement as New.

SITE SURVEY AND ASSET LISTING

- Site surveyed, asset listing compiled by valuer.
- Valuer requires access to:
 - asset register
 - plans of the site(s)
 - technical and cost data
 - relevant details about current insurance arrangements
 - technicians and others knowledgeable about the equipment

RESEARCH AND CALCULATION

- Several methods used to calculate Replacement as New Value:
 - Asset cost estimation
 - Domestic benchmarking;
 - International benchmarking; and
 - Analysis of other potential external factors (exchange rate movements, original cost bidding effects, commodity cost variations, technology changes, relocation to cheaper.

REPORTING

- Valuation report to include detailed valuation, plant reference numbers, item descriptions and designs, all written clearly and comprehensively for use by the business and their insurance advisors.

SOURCE: JOHN FOORD

Flood Diversion Projects - Taipei



Disaster Mitigation Construction

- Experts say it is neither possible nor cost effective to build houses “disaster-proof” houses.
- However, clever construction can help to mitigate tragedy in a natural disaster.



SIPS
(Structural Insulated
Panels)



Safe(R) Shelter



Monolithic Domes

CONCLUSION

The background of the slide is composed of several overlapping, wavy, horizontal bands of color. At the top is a solid dark blue band. Below it is a medium blue band. A light blue, wavy band follows, which appears to be a gradient or a lighter shade of the medium blue. At the bottom is a bright teal band. The overall effect is a modern, abstract design with a sense of movement and depth.

Conclusion

Lesson\$ Learnt

- The worse-case scenario will happen one day
- Protection measures can fail
- Catastrophic events are multi-peril
- Infrastructure breakdown (water, electricity, transport, security)
- Lines of business not taken into account
- Demand surge / loss amplification
- Clarity of insurance workings

Conclusion

What has to be done

- Under insurance
- Gather more detailed portfolio and loss information
- Make use of modeling tools where available
- Use model results as a baseline
- Apply additional exposure estimation approaches
- Ensure risk-adequate pricing
- Closer co-operation between industry and research

