

I have been given the honour of opening this technical conference and providing a keynote address. The last time I attended an NZSEE Conference, I was a Member of Parliament, and I noticed that your society was having a conference at Canterbury University.

The attraction for me was a guest speaker - David Alexander who at the time was the head of the Global Risk Forum.

I was on what I've since described as my journey of discovery which began at 4.35am on Saturday 4<sup>th</sup> September 2010, when the first of the Canterbury Earthquake Sequence struck. Not even knowing what liquefaction was back then, I soon found out I had a lot to learn.

Addressing your conference with the theme of Reducing Risk, Raising Resilience provides me with an opportunity to share an element of what I have learned - which is summed up in the phrase 'It's all about people'.

I have looked at your programme and although this is a technical conference, I think what I have to say will lead well into your first guest speaker Chris Poland, who I am looking forward to listen to as well. This journey of discovery of mine is not over yet.

It is just over five and a half years since the first earthquake struck that altered the course of history for our city in so many ways.

**It is always all  
about people**

*“Actual  
emergencies  
look more like  
people coming  
together than  
cities falling  
apart”*



<http://www.sf72.org/home>

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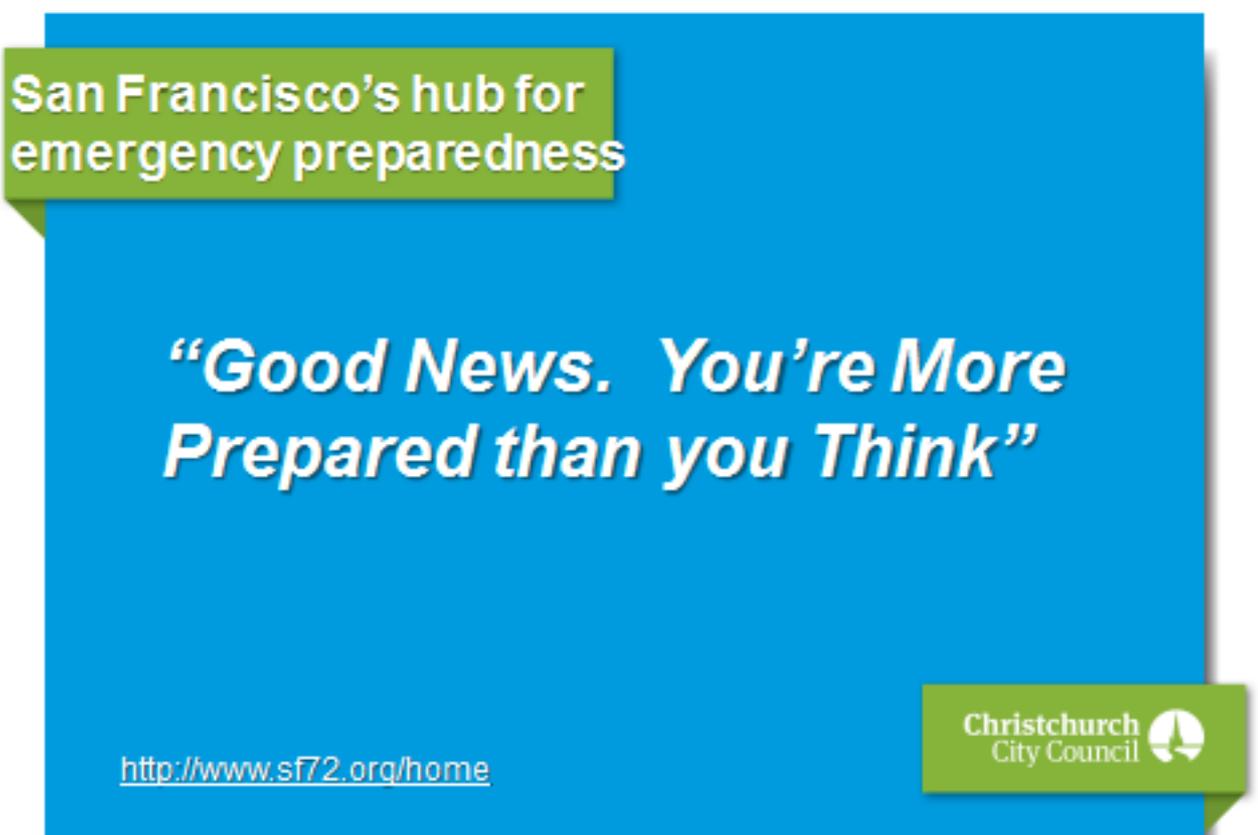
I always like to start my presentations with this slide because...it's a great picture of me.

But it's actually appropriate this time because of the message it is intended to convey – one I found on the San Francisco emergency management website. “Actual emergencies look more like people coming together than cities falling apart”. Our lived experience here in Christchurch says that this is true.

I've headed this slide – not it's all about people – but it is always all about people.

We can talk about the technical aspects of the built environment, but in the end it's all about people. That's why you do what you do.

There is another expression on the San Francisco website.



Good News. You're more prepared than you think.

What I have learned is that there is a lot about what has happened that means we are much better prepared than we realise. And it's not always the obvious stuff.

## Preparedness

- \$6M investment in resilience
- \$60M Asset protected
- Security of Supply- three weeks vs three months without power



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There is the obvious lifelines planning that meant that a \$6M investment protected \$60M of asset and over three months of power supply. This was a deliberate and planned approach to building resilience into a network based on an independent risk assessment of the hazards we had mapped for our region. Earthquakes were clearly on the radar, but their expected epicentre was at a distance from the central city. I often ask the question whether a private utility operator would have thought the investment was worth the risk. Fortunately for us in Christchurch that was not an issue as the company remains a Council Controlled Trading Organisation.



*Lyttelton... a vibrant sustainable community creating a living future*

- **Improve resilience and local self-sufficiency in food and other essential services**
- **Set in place cooperative systems and structures**
- **Educate and up-skill people on sustainable livelihood options**
- **Strengthen community ties and grow social capital**

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

Christchurch City Council 

But in speaking to you today, my theme focuses on people and what builds community resilience. I can use several examples, but today I want to focus on the port of Lyttelton, and a community group that began a number of years before the earthquakes committed to a vibrant sustainable community creating a living future. Project Lyttelton is involved in all aspects of community life, but its commitment to community resilience has meant they have thrived in the wake of the earthquakes and gone from strength to strength.

The objectives of Harbour Resilience are to:

- Improve resilience and local self-sufficiency in food and other essential services
- Set in place cooperative systems and structures
- Educate and up-skill people on sustainable livelihood options
- Strengthen community ties and grow social capital



## LYTTELTON HARBOUR TIMEBANK

- **INSTEAD OF DOLLARS, time credits are used as payment**
- **EVERYONE'S TIME IS EQUAL**

Christchurch  
City Council 

But it is the Lyttelton Harbour Timebank which is the piece de resistance, when it comes to resilience.

Timebanking is a way of trading skills in a community. INSTEAD OF DOLLARS, time credits are used as payment. You earn time credits for the work you do, and then use them to 'buy' another member's time to get the services you need. EVERYONE'S TIME IS EQUAL. No matter what type of work is done, one hour always equals one time credit. 1 = 1. Every person is equally valued.

I think it is obvious that you don't need a standard civil defence response when you already know who is available to do what – a community that trusts people to do things for each other in exchange for equivalent time – not money – each hour valued equal. But was it obvious before the earthquakes? I don't think so. This is the magic of the good news being you're better prepared than you think.

## My journey of discovery



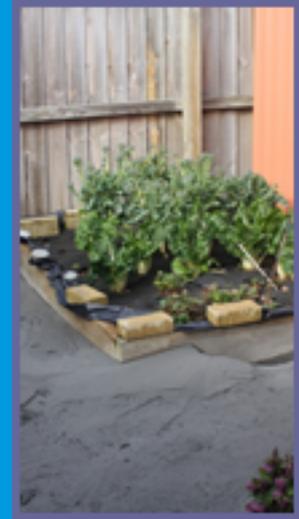
It had something to do with the water

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I wasn't prepared at all. Here's the street where I lived on 4 September 2010. I was the Member of Parliament for Christchurch East back then.

Before that day I had never heard of liquefaction and lateral spread, but I soon worked out it had something to do with the water as I said to my husband the following night after viewing the damage in my electorate.

## What were they thinking?



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And here's some of that damage. I now know it's not a great idea to build houses on unreinforced concrete slab foundations on the edge of wetlands where the ground is susceptible to both.

And of course silverbeet can survive anything, which is probably why it is good for you!

The older long-term residents of Bexley always said that the Pacific Park subdivision (where these photos were taken) should not have been built, but no-one has ever been held accountable for the decision. A government decision to essentially retreat from the area has made the issue redundant. But I don't think it should be.

I think we should understand how, with all the knowledge that was available at the time, a subdivision like this could be consented without the risk of liquefaction or lateral spread being fully considered.

In this case the subdivision went to a hearing, but the debate was focused on the environmentalists who wanted to reinstate the wetlands whereas the council wanted to allow houses to go in right down to the river.

The instinct of the older residents of the area proved right.

That's one of the reasons why I believe that local knowledge – guided by science and expert advice – should be an integral part of any planning process.

Community leadership

Canterbury COMMUNITIES' EARTHQUAKE RECOVERY NETWORK  
Village Values Community Heart Local Voices

CanCERN

*“The wisdom of the community always exceeds the knowledge of the experts.”*

– Harold Fleming

Christchurch City Council

One of the community groups that emerged after the earthquakes was CanCERN – the Canterbury Communities Earthquake Recovery Network – it brought people and groups together to ensure that they had a voice in the recovery. The motto they chose *“The wisdom of the community always exceeds the knowledge of the experts”* reflected the reality of feeling excluded. But actually in hindsight I think it isn't quite right. My view now is that the wisdom of the community combined with the knowledge of the experts always offers more than one can offer without the other.

**Colombo Street, Christchurch  
22 February 2011**



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And then February happened. This was some of the aftermath of the February 2011 earthquake. To be honest we thought the worst was already over. We were the lucky city.

We had experienced a 7.1 magnitude earthquake in September nearly 6 months before and no-one had died. That changed at 1.51pm on February 22. A 6.3 magnitude earthquake right under the city produced very high peak ground accelerations. 185 people were killed.

Why were we not better prepared? Why were these facades not pinned back or the footpaths and streets not protected from the falling rubble? People died under the rubble as people ran into the street. People died in the bus. And we had had a wake-up call in September?

And it is not as if it hadn't happened before.

## Napier February 1931



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This is 80 years before – in the Hawkes Bay in the North Island – February 3 1931. Many of the first people who died were those who ran out of the buildings and were crushed in the rubble.

We gained a lot as a country from this disaster: our national disaster insurance scheme – the Earthquake Commission – our building code and our Standards Council.

But somehow the risks associated with unreinforced masonry, parapets and decorative features were not remedied in other parts of the country and time moved on.

I remember meeting a man who had moved to Christchurch from Napier about 30 years ago. He said he thought there was something different about Christchurch houses when he arrived – after a while he realised it was chimneys.

So we didn't know that we were exposed to earthquakes? We did. Maybe like me everyone thought the big one would be Wellington. But we had September – why weren't we thinking about what we could do to de-risk our city? Maybe we knew to expect a one magnitude below and it hadn't come – this was nearly 6 months later – maybe we thought a smaller magnitude earthquake couldn't do more damage than the first one in the sequence.

How wrong we were. But then we weren't the experts. But they knew the risks were still high, so why didn't we act when we had the chance?

For me the answer lies in the two missing but vital ingredients - communication and trust – the foundation stones for community resilience.

## Some questions

How do we communicate scientific & expert advice so it's easily understood to ensure evidence-based decision-making?



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How do we communicate scientific and expert advice so it's easily understood in order to promote informed debate and evidence-based decision-making? This is vital.

In this context, how do we help people to understand risk? And how do we communicate risk?

How do we ensure we capture local knowledge – the people whose memory includes the stories their ancestors told that show vulnerabilities – the oral traditions of indigenous peoples are invaluable sources of knowledge about our hidden history.

We couldn't see the faultline that started the Canterbury Earthquake sequence.

And how do we prepare for an uncertain future?

How do we engage local communities in the hard decisions?

## Communicating Risk

### Sand Dunes

### Barrier or Protection



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Christchurch is a coastal city. I remember being lobbied a while back by people who wanted to lower the sand dunes so they could enjoy the view out to sea. Others argued for their retention based on the protection they gave and the wilderness environment they promoted on the beach.

I realised that I would never be able to form an objective view if I only heard from protagonists in a debate, so I decided to see what I could find out about dunes. I talked to a professor in the Geography Department at the University of Canterbury. I'm not doing justice to the technical detail, but in essence I learned that the protective capacity of dunes derived not from their height but from the quantity of sand available to be given up in a storm event. Dragging the sand back into the sea helps quell the strength of the waves. So it wasn't only about the height of the dunes.

I could sense a compromise - until I realised that there was no room for a lower flatter dune system unless we were willing to do away with the main road behind the dunes along with some of the very properties that wanted the view of the sea.

I make this point because if you have factual information sometimes the answer is obvious. But as I have learned even that isn't always the case.

Even after our experience, and even after all the publicity about climate change, sea level rise and the potential for more extreme weather events, I don't feel as if we have a consensus on

the risks we face and the link to the land use planning decisions we make. Nor is the decision purely if or where we build; with technology today it's much more about how we build.

But public debates are often reduced to sides and people are labelled – pro or anti-development – or climate change – or the environment. As I have already said, pitting protagonists against each other doesn't necessarily guarantee the right answer.

The truth is that the earthquakes have exposed poor planning processes, where known hazards were not even acknowledged let alone addressed.

100RESILIENTCITIES.ORG  
**100 RESILIENT CITIES**  
CENTENNIAL CHALLENGE

***"The ability of a system, entity, community, or person to withstand shocks while still maintaining its essential functions and to recover quickly and effectively."***

**Simply put, resilience is what enables people to survive, adapt, and thrive in the face of acute shocks and chronic stresses**

Christchurch  
City Council 

That's one of the reasons why I wanted Christchurch to become one of the 100RC Network pioneered by the Rockefeller Foundation. The definition of resilience is instructive:

***"The ability of a system, entity, community, or person to withstand shocks while still maintaining its essential functions and to recover quickly and effectively."***

But it is the capacity to thrive that has captured my attention as a city leader, because it offers a powerful platform for the future.

And I have added another term to this list – and that is co-creation – our uniquely human ability to resolve complex problems collaboratively. Complexity and collaboration go hand in hand.

We all know about teachable moments – something happens that means we can teach children something important. We don't say, 'we send our kids to school; so it's the teacher's job to teach them that'.

A post-disaster environment is a teachable moment writ large.

It would be unthinkable to have gone through everything we have and to still believe it's someone else's job to understand the risks we face and to come up with mitigation strategies.

We have a duty to stop people thinking that responsibility for these decisions belongs to someone else.

This is what has led me to understanding the importance of building resilience.

## Local Governance

*“The need to support new forms of local governance through collaborative efforts has become an essential dimension of resilient communities.*

*Resilience involves transformation of the role of citizen and grassroots organisations from that of stakeholders, who are able at best to advise governments, to full equity partners.”*

*(Robert L Bach)*

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City Council 

I have done a lot of reading about the twin concepts of emergence and resilience – and this summed up for me the future I hope to see emerge from our city that has felt starved of democratic input into decisions that affect their region and their city.

*Resilience involves the transformation of the role of citizen and grassroots organisations from that of stakeholders, who are able at best to advise governments, to full equity partners. Equity partners are full shareholders, equally able to participate in the design and implementation of [disaster-related] effort*

It is only with this collective governance approach that I believe we can truly tackle the really hard issues – from hazard identification and mitigation (and the associated costs) through to how we build in flood prone areas or coastal environments exposed to sea level rise.

**Regenerate  
Christchurch**

**Regeneration**

*Restoration*



*New Growth*

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And now Christchurch has been given the opportunity to test a new form of local governance. I went to Wellington yesterday and watched with some satisfaction the final reading of a unique piece of legislation, the Greater Christchurch Regeneration Act 2016 passed unanimously by Parliament. Unlike the Canterbury Earthquake Authority Act 2011, it has established a body that is the joint responsibility of the Crown and the Council, and it has a Te Runanga O Ngai Tahu Director appointed as well. Although the legislation refers to the Crown appointing the chair for the first couple of years and then the Council after that, we jointly agreed that the chair would be Andre Lovatt, who is here overseeing the restoration of the Arts Centre, but whose age and background places him in the new growth space as well.

He's young, qualified and passionate about forming an outward looking organisation that will embrace the community as it seeks to promote regeneration plans initially within the central city, New Brighton and the Residential Red Zone.

In none of these places are we faced with a blank sheet of paper – a range of communities has been actively engaging and seeking feedback from residents, designers and developers.

And we will ensure as a Council that they can hit the ground running. I am truly excited by the prospect we now have in front of us and I am determined to prove that this is the model we could start from in the future if faced with another event of this magnitude.

Not a government department to serve a Minister, but a joint body with the local authority and a layer of governance between, with levels of government involvement able to be scaled up or down as the demand required.

A big lesson learned for me is this. You've chosen the right model if the local institutions are left stronger as a result of the intervention. I honestly believe that can only occur if the model is truly collaborative.

## Inspiring the city's renewal

*Three years after two large earthquakes devastated central Christchurch, the city is experiencing a rebirth with creativity and wit — thanks to the ingenuity of its hardy residents... New York Times*



*Healthy doses of Kiwi inventiveness, creativity and resilience have created positive and innovative urban solutions ... There's a sense of energy in Christchurch that is informing and inspiring the city's renewal. Lonely Planet*



Christchurch City Council 

But there is one other thing that I have learned that I thought I would leave you with.

In a post disaster environment people who thrive on adversity always emerge. They'd rather ask for forgiveness than permission.

And Christchurch has been no exception.

That's how we got mentioned in Lonely Planet and the New York Times.

Three years after two large earthquakes devastated central Christchurch, the city is experiencing a **rebirth with creativity and wit** — thanks to the **ingenuity** of its hardy residents... *New York Times*

Healthy doses of **Kiwi inventiveness, creativity and resilience** have created **positive and innovative urban solutions** ... There's a **sense of energy** in Christchurch that is **informing and inspiring the city's renewal**. *Lonely Planet*



What an incredibly powerful platform for our future if we capture that energy, innovation, creativity, wit and resilience in our regeneration. And on this slide is just a snapshot of what I'm talking about. All of them great communicators – connected to communities of interest or place - all of them trusted. The foundation stones of community resilience. It's all about people and this says to me that we have it all – and now we have the tools to make it happen.

Thank you.