



4th International Conference on Building Resilience, Building Resilience 2014, 8-10 September 2014, Salford Quays, United Kingdom

Are we listening, are we learning?

Abstract

New Zealand is said to be coming to grips with the post-disaster situation in Christchurch according to articles published by politicians, government agencies and business entrepreneurs. Christchurch has been subjected to over 13,000 earthquakes since September 10th 2010, and in particular the destruction and devastation that resulted from the February 22nd 2011 earthquake. However, key learnings from the Christchurch post-disaster experiences do not appear to have been heeded with the publication of the 30 year Auckland and Unitary Plan for Auckland, New Zealand's largest city, where almost half of New Zealand's population live, compared with just 400,000 who lived in Christchurch in 2010/11. Therefore the consequences of a similar scale disaster would be catastrophic for Auckland and New Zealand. The paper reviews the short-comings of the Auckland and Unitary Plan with regard to 'disaster preparedness and response', based on those Christchurch lessons, but also in respect of the 'Resilient Cities Framework' (RCF). Therefore the question is posed as to whether we are really listening or learning, or not? The conclusion is, that tragically we are not, and whilst we can plan and write up 'lessons learned', the only apparent lesson to be learned is that we do not learn from the 'lessons learned'. Something is missing.

Keywords: resilient; cities; framework; disaster recovery, new zealand

© 2014 The Authors. Published by Elsevier B.V.

Selection and/or peer-reviewed under responsibility of the Centre for Disaster Resilience, School of the Built Environment, University of Salford.

1. Introduction

Christchurch was considered a low earthquake risk, as is Auckland, until the earthquake hit Christchurch on September 10th 2010. Christchurch was home to 400,000 people at that time, (now 436,000 in 2013), whilst Auckland's current population is 1,416,000 according to the 2013 Census, up 8.5% from the 2006 Census. Christchurch had alternative areas for people to move to following the earthquakes, whereas Auckland, New Zealand's largest city, probably would not, and there are further key differences. The Quality of Life Report (2007) looked deeper, and suggested the following differences.

2212-5671 © 2014 The Authors. Published by Elsevier B.V.

Selection and/or peer-reviewed under responsibility of the Centre for Disaster Resilience, School of the Built Environment, University of Salford.

- Auckland had (and still has) a very diverse and large ethnic population, with 23% being Asian, (according to the 2013 Census), whilst Christchurch was not as diverse ethnically, however it is in 2013, (due in the main to huge influx of primarily Philipino labourers for the Christchurch rebuild).
- Auckland, in 2007, was the fastest growing metropolitan area at around 16%, whilst Christchurch was one of the slowest, and below the national average of 7.5%.
- Auckland's single parent households were double the percentage compared to Christchurch in 2007.
- Christchurch had the highest proportion of single person households, while parts of Auckland had the highest proportion of 2 family households with the average household being being 2.5 in Christchurch and 2.7-3.0 in Auckland.

The major difference was that the 'sub-national GDP' of the Auckland region was estimated at US\$47.6 billion in 2003, being 36% of New Zealand's national GDP, and 15% greater than the outputs of the entire South Island of New Zealand. Therefore it could be clearly argued that a disaster in Auckland of a similar scope and scale to that experienced by Christchurch, which was unprecedented in an urban area globally, would have a catastrophic impact on New Zealand. Thus, it should be an imperative that the lessons learned, and continuing to be learned from Christchurch are applied to Auckland's 30 year strategic planning discussions, strategies, documentation and their implementation.

2. Key lessons learned from Christchurch's post-disaster experiences

There are many lessons that can be used from the Christchurch earthquakes' situation, and these can be loosely grouped as follows:

- The inability to continue residential use in some locations (for example, red zoned areas),
- The relocation of households, both temporarily and permanently,
- The relocation of previously CBD businesses throughout Christchurch,
- The damage to infrastructure, and the need for a coordinated plan for delivery of infrastructure,
- The impacts on the transport network.

The most significant realization for Christchurch was that no planning was undertaken for any of these potential outcomes, pre-disaster. Auckland needs to take note, heed and respond to these lessons now, before a large scale disaster strikes.

There were micro-level lessons learned by business organisations operating in the original CBD of Christchurch, as well, for example Kestle and Potangaroa, (2012) noted that:

- Businesses found their policies did not cover business interruption,
- Jobs and allocated personnel need to be logged onto a series of matrices and stored /updated in web-based data bases using The Cloud for example, and backup data files.
- Insurance cover needs to be kept relevant, and premiums up to date, particularly if a commercial property owner, occupier/tenant,
- There is a need for individuals and organisations to create 'disaster plans', that are practiced regularly, and contain guidelines and tools/indicators to guide decisions and processes and actions in the event of a significant natural disaster in an urban area.

Further, "the earthquakes that shook the city of Christchurch in 2010-2011 caused extensive damage to people's lives, homes and businesses emphasised the risks that exist in business and the fragility of organisational operational ability. Organisations, particularly those within critical industries, faced enormous pressure to continue operating while simultaneously experiencing major business disruption which threatened their survival. Yet some organisations were able to endure, even thrive, throughout and after the events. How?" (Resilient Organisations, 2012).

Resilient Organisations, in partnership with the University of Canterbury, (2012) found that the few organisations with Business Continuity Plans (BCPs) prior to the September earthquake were able to take immediate action during the disasters and continue operations. These same organisations knew how to take care of their staff, how to keep communication channels open, and what actions to take, making sure that they felt valued by the company.

Given the unprecedented and unexpected devastation wrought by two large scale earthquakes on Christchurch city in 2010, and 2011 in particular, how does the Auckland Unitary Plan (2013) and therefore the 30 year Auckland Plan demonstrate whether the Christchurch lessons have been heeded, and how does the plan rate when compared with the Resilient Cities Framework 10 point list ?

3. The Resilient Cities Framework

Resilient Cities was an initiative from UNISDR (the United Nations Office for Disaster Risk Reduction) in 2012, and this listed a 10 point check list for establishing the resilience of cities, as noted below:

1. Put in place organisation and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role in disaster risk reduction and preparedness.
2. Assign a budget for disaster risk reduction and provide incentives for homeowners, low income families, communities, businesses and the public sector to invest in reducing the risks they face.
3. Maintain up to date data on hazards and vulnerabilities. Prepare risk assessments and use these as the basis for urban development plans and decisions, ensure that this information and the plans for your city’s resilience are readily available to the public and fully discussed with them.
4. Invest in and maintain critical infrastructure that reduces risk, such as food drainage, adjusted where needed to cope with climate change.
5. Assess the safety of all schools and health facilities and upgrade these as necessary.
6. Apply and enforce realistic, risk compliant building regulations and land use planning principles. Identify safe land for low income citizens and upgrade informal settlements, wherever feasible.
7. Ensure that education programmes and training on disaster risk reduction are in place in schools and local communities.
8. Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices
9. Install early warning systems and emergency management capacities in your city and hold regular public preparedness drills.
10. After any disaster, ensure that the needs of the affected population are placed at the centre of reconstruction, with support for them and their community organisations to design and help implement responses, including rebuilding homes and livelihoods.

Cities throughout the world need to be disaster resilient as they now contain over half of the world’s population; and such challenges can only increase as that percentage continues to rise. Auckland is home for nearly half of NZ’s population. Hence, the ‘Resilient Cities’ message that resilience and disaster risk reduction must be part of urban design and strategies to achieve sustainable development is of particular importance to Auckland; or at least it should be.

To quote from the ‘Making Cities Resilient Report (UNISDR, 2012), “Building resilience to disasters requires the political will and intervention of active, competent local governments. All who make a city function, from municipal service providers to urban planners to the private sector and residents themselves, must be committed to building safer cities to secure resilience ”.

But how do the 10 RCF checkpoints compare to what is in Auckland’s Unitary Plan?

Table 1 Review of the RCF 10 point checklist and the Auckland / Unitary Plan

10 point Resilient Cities Framework	30yr Auckland Plan (strategic)	Auckland Unitary Plan (2013)
1. Disaster risk reduction and preparedness organisation and coordination, based on participation of citizen groups and local	1. Relies totally on the Civil Defence	No mention of specific processes,

alliances.	Mgmt Goup Plan 2011-16	or plans identified for items 1-10 despite being referred to as the tool to implement the Auckland Plan.
2. A budget is assigned for disaster risk reduction and incentives provided for homeowners, low income families, communities, businesses and the public sector.	2.Nothing noted or evidenced	
3.Up to date data on hazards and vulnerabilities maintained, risk assessments prepared, and plans for the city's resilience are readily available to the public and discussed with them.	3.Not overtly evidenced	Examples being:
4.Investments made and maintained for critical infrastructure that reduces risk, such as food drainage, adjusted where needed to cope with climate change.	4 Not overtly evidenced	No obvious pre disaster plans /processes to address the
5.The safety of all schools and health facilities is assessed and upgraded as necessary.	5.Yes	Christchurch lessons learned in terms of needing to relocate people residentially and commercially.
6.Realistic, risk compliant building regulations and land use planning principles are applied and enforced.	6.There is debate here that apart from Building Act compliance it could be lacking scope and reality..	No account taken of potentially unbuildable land post disaster.
7. Education programmes and training on disaster risk reduction are in place in schools and local communities.	7.Yes,only in part	
8. Ecosystems and natural buffers to mitigate foods, storm surges and other hazards to which your city may be vulnerable (for example, climate change). are protected.	8.Directives 8.5 and 8.6 in the Akl plan do cover this	
9. Early warning systems and emergency management capacities are installed in the city and regular public preparedness drills are held.	9.Relies on Civil Defence plan	
10. After any disaster, ensure that the needs of the affected population are placed at the centre of reconstruction, with support for them and their community organisations to design and help implement responses, including rebuilding homes and livelihoods.	10.This is crucial but not overtly evidenced in any detail at all.	

4. The Auckland Unitary Plan

The main purpose of the Auckland Unitary Plan (www.shapeauckland.co.nz) is to replace up to 14 of Auckland's district and regional plans, and is primarily an urban development zoning document and implementation tool for the 30 year Auckland Plan.

The document is not yet operational having been sent out for consultation and feedback from the NZ public twice in the last 12 months. The latest submission date for feedback was the end of February 2014. The Unitary Plan appears to be written relatively naively, as if urban and business development may never have to respond to a large scale natural disaster, striking Auckland, such as occurred in Christchurch 3 years ago. The 3 key themes are simply, 'where we live' (housing affordability, urban design), 'where we work' (local jobs, business friendly), and 'what we value' (water quality, natural character and landscapes). No mention is made, nor plans evidenced under a theme heading of 'what contingency plans are in place for potential relocation of businesses and residents should a significant natural disaster hit Auckland'.

This is of considerable concern as there appears to be no obvious recognition, acknowledgement or response to the lessons learned from Christchurch's situation in terms of for example, the need to allow for a potentially large number of business /commercial property owners, and residential owners certainly needing relocation temporarily or permanently. Further, where are the contingency plans for the potentially devastating impacts on Auckland's ability to function from a GDP perspective, and where are the detailed and coordinated plans for the delivery of repaired and renewed infrastructure in the Unitary or even the Auckland Plan?

5. The 30 year Auckland Plan

This document's focus was, and is, to set the new longterm strategic direction for Auckland's development as a super city, and in part goes a little way toward addressing a few of the 10 key points of the Resilient Cities

Framework as noted below, but does not appear to specifically take the key lessons learned from Christchurch into any serious or realistic account. The Auckland Plan (www.theaucklandplan.govt.nz), includes a series of directives to facilitate progress towards Auckland's emissions reductions target, identifies the opportunities and risks associated with climate change, and states the need to increase the resilience of Auckland's communities, natural resources and built environments, but realistically it will not just be climate change that Auckland has to prepare for to be considered a resilient city.

The Natural Hazard Risk Management Action Plan (NHRMAP), is one Auckland Plan initiative to help build a city that is resilient to the effects of natural hazards. The management of natural hazards falls across the organisation, and everyone has a role to play in managing the risks from natural hazards to our region. This ranges from the way information is managed and used, to the way risks are assessed and treated.

The NHRMAP (www.civildefence.govt.nz), aims to co-ordinate the work that is taking place across council in order to:

- Reduce the risk to Auckland communities from natural hazards to acceptable levels
- Avoid duplication of effort and cost in research and information gathering
- Ensure priority is given to actions that most effectively reduce the risk to Auckland communities. (Civil Defence, Auckland Council, 2014).

Does this Natural Hazard Risk Management Action Plan sufficiently address the lessons learned from Christchurch before a large scale natural disaster strikes, and do the various plans (NHRMAP, Auckland and the Unitary Plan) provide an integrated and realistic master plan for Auckland to function and recover in a timely manner?

Christchurch's economic and social recovery is still slow 3 years after the September 2010 and February 2011 earthquakes.

Other RCF relevant strategic directives/initiatives in the Auckland Plan are :

- Identify the opportunities and risks associated with climate change. Increase the resilience of Auckland's communities, natural resources and built environments and their ability to adapt to the impacts of climate change. Take a cautious, risk-based approach where there is uncertainty on the effects of climate change, and monitor and adapt to environmental change over time.
- Productive food-growing land is being compromised significantly in some parts of the world, and ongoing urbanisation and climate change may exacerbate this. Global resource scarcity, peak oil, and climate change add to the value of local food production and place an additional premium on Auckland's and New Zealand's productive capacity. Food resilience is likely to be a prized element of city living in the future, and it is essential that this dynamic is recognised in planning for Auckland's future.
- Recognise, promote and strengthen the value and contribution of local urban and rural food systems to improve resilience, resource use efficiency and community food security. To contribute to the above directive, Auckland will examine local (urban and rural) food production and distribution capacity (current and potential), the degree of resilience, and opportunities to protect and enhance Auckland's local food production.
- Future development of land for housing, business, and infrastructure (for roading and drainage) should be located away from coastal and low-lying areas vulnerable to sea-level rise, flooding and coastal erosion.

6. Conclusions

The objective of the paper was to review the potential short-comings of the Unitary Plan with regard to 'disaster preparedness and response', based on lessons from the Christchurch earthquake experiences, but also in respect of the key points of the 'Resilient Cities Framework' (RCF) checklist. Therefore the question was posed as to whether we are really listening or learning, or not, as the 30 year Auckland Plan, and Auckland Unitary Plan are rolled out? The conclusion is, that as yet we are adopting very few if any of the lessons as directives in the 30 year plan. The Auckland Unitary Plan is sadly lacking as a tool to ensure Auckland's business and residential sectors can be relocated and/or accommodated seamlessly when large scale natural disasters strikes Auckland. No mention is made of a budgetted disaster plan, or a hazard data-base being updated and maintained, nor are realistic or pertinent risk compliant building regulations included. Whilst we can plan and write up 'lessons learned'. The only apparent lesson to be learned is that we do not listen or learn from 'lessons learned'. This appears particularly true whilst

planning is currently being finalised and implemented for New Zealand's largest city Auckland, where almost half of New Zealand's population live and work, and where a very significant proportion of New Zealand's GDP is created.

7. References

- ECANS, (2013). Preliminary Draft Land Use Recovery Plan, Te Mahere Whakahaumanu Tāone, Environment Canterbury Regional Council, p6.
- Kestle, L., Potangaroa, R., (2012). Identifying the added-value of various roles in the post-disaster response and recovery of Christchurch. In S. Smith (Ed) Proceedings of 28th Annual ARCOM Conference. Edinburgh, UK: University of Reading 3-5 September.
- NHRMAP, (2012). www.civildefence.govt.nz.
- QoL, (2007). Quality of Life '07 in Twelve of New Zealand's Cities: The Quality of Life Project.
- Resilient Organisations, (2012). www.resorgs.org.nz/publications/reports.
- The Auckland Plan (2013). www.theaucklandplan.govt.nz.
- The Auckland Unitary Plan (2013) . www.shapeauckland.co.nz.
- UNISDR, 2012. How To Make Cities More Resilient. A Handbook For Local Government Leaders. A contribution to the Global Campaign 2010-2015 Making Cities Resilient – My City is Getting Ready!, United Nations Office for Disaster Risk Reduction, Geneva, March 2012 pg 25.
- Wiki, (2014). <http://en.wikipedia.org/wiki/Auckland>.