Designing to Heal: post-disaster rebuilding to assist community recovery Part A: disaster impacts and recovery

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Figure 1. Finding their own way to deal with disaster, Christchurch NZ. (source: author)

ABSTRACT

The physical destruction accompanying disasters typically creates an urgency to rebuild damaged communities and help survivors get their lives back on track. There are many inspiring examples of how architects, planners and other built environment professionals have contributed to rebuilding. In many cases their efforts have facilitated the re-establishment of eroded communities and created a sense that the worst was over, that the outside world cares and things were getting better. At times, however, these interventions have made things worse by overwhelming the remnants of the pre-disaster community, replacing them with assets and opportunities irrelevant to their needs and values, and setting the survivors down a path not of their choosing. Increasing the chances that such projects will resonate with the communities requires getting the process and the product of design right. This paper is divided into two parts: part A outlines the relevance and significance of disasters and post-disaster recovery; part B highlights the need of designers to harness community skills, emphasises survivor participation in the planning and realisation of their post-disaster environment, and suggests some characteristics of design that may smooth the path to recovery.

Introduction

When a community befalls a disaster the death and physical destruction that make the headlines is usually attended by more subtle but equally profound changes to the survivors' emotional wiring and damage to their social bonds and support networks. Architects, planners and urban designers are often called upon to participate in the rebuilding process. In doing so, we intervene in a complex, highly sensitive mix of social, emotional and physical processes. Simply conducting the business of architectural design, urban design and planning as you would in a conventional 'non disaster' situation may not be as effective as you might hope and may even make things worse for the community in question. Disasters raise unique challenges that require unique responses.

This paper seeks to outline some of the key issues raised by designing in a post disaster situation. It draws from the observations and ideas outlined in *Designing to Heal* which was published by the CSIRO in 2013 and was written by the author of this paper.

What are disasters?

Emergency Management Australia (EMA) defines a disaster as:

'A serious disruption to community life which threatens or causes death or injury in that community and/or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources other than those normally available to those authorities (Commonwealth of Australia 1998).

This suggests that disasters raise new challenges for a community and at the same time diminishes their ability to do something about it. Implicit within this definition is recognition that disasters create a gap between the difficulty of the challenges people face and the locally available and familiar tools to meet those challenges (Figure 2).
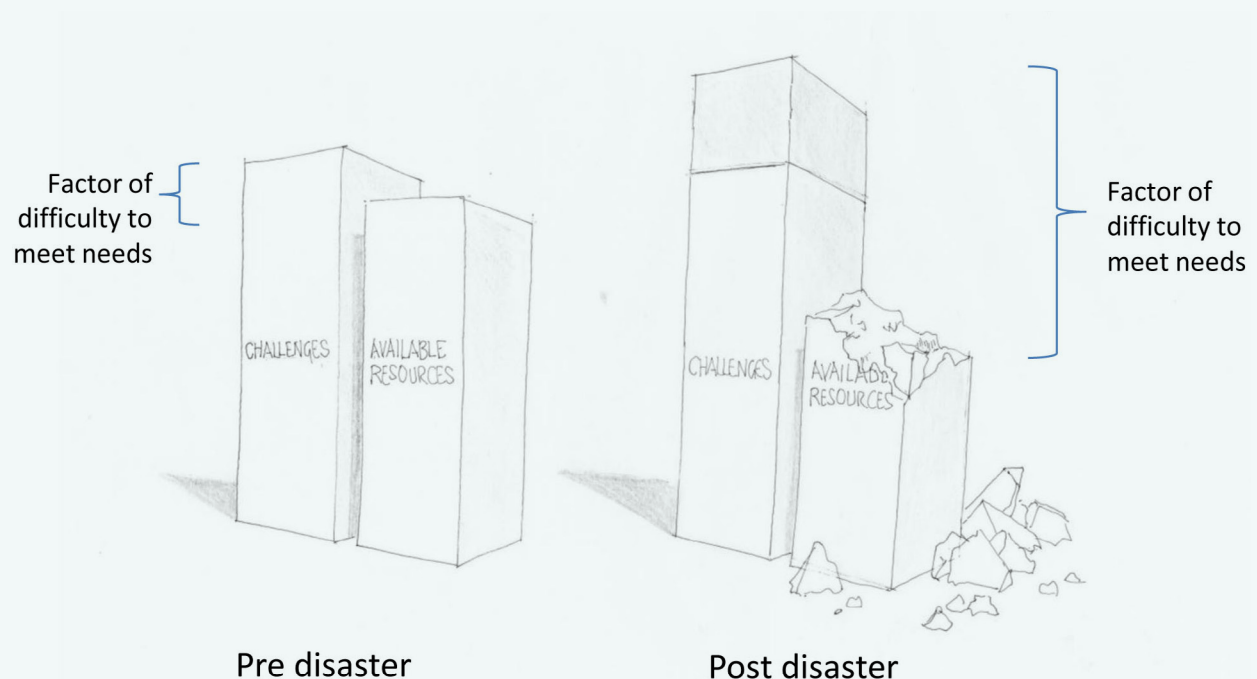
Figure 2. Meeting needs before and after disasters. (drawn by author; reproduced by kind permission of CSIRO)

Why are disasters an important issue?

All over the world, population growth and urbanisation have seen the expansion of large, immovable and vulnerable cities across the earth's surface (UN Habitat, undated). Amongst other things this means there are, in effect, more targets for the destructive expressions of nature. In the past it was easy to simply avoid places known to be unsafe and build on land that past experience suggested to be low risk (non-flooding, seismically stable, not bushfire prone etc). However as urban areas have expanded and the 'safe' land has been taken up, it is no longer easy to be very selective, leaving risky (and less valued) land disproportionately represented in the land remaining for urban growth (Emergency Management Australia, 2002). This vulnerability and scarcity of safe land influences the value placed on land, with the less vulnerable land often attracting a premium. This leaves the urban poor with little choice but to find homes on the floodplains, steep slopes, polluted and poorly serviced areas of cities around the world, unable to compete for safer land (Ingram JC et al 2006). For these people options of where to live are fewer and it is easy to disregard the possible risks associated with disasters when faced with the day-to-day risks of not having enough food. Locally, population growth, smaller households, housing affordability issues and 'tree changers' who have left the suburbs to enjoy the bush have pushed the fringes of many Australian cities into beautiful but fire-prone or flood-prone surroundings, increasing the interface between people and sources of risk (Royal Commission 2010).

Furthermore, wherever we are located we are increasingly likely to be beset by the effects of climate change that make previously safer places unsafe. In addition to bushfires, floods and droughts, climate change may well increase epidemic of communicable diseases, as famine and malnutrition reduce resistance and the range of parasites such as mosquitos increases (World Health Organization 2003). In addition, global resource depletion (particularly oil and water) appear likely to cause governments and communities to covet the resources of their neighbours, increasing the risk of conflict and adding to instability (UN Interagency team for preventative action 2012). Add to these issues terrorism and industrial accidents it is clear that destructive events – whether caused by Mother Nature or human nature – will increasingly be a fact of life and are here to stay.

What happens to a community that befalls a disaster?

Disasters are multi-faceted and their impacts can profoundly alter the people and places affected. At an economic level damage to these cities disrupts a very delicately balanced and interconnected system (Bureau of Transport Economics 2001). Cities are huge concentrations of capital and the hubs of long and complex supply chains that stretch well beyond their urban limits. They house the seats of government, administration and the infrastructure that makes sure we are fed, educated, employed and can access medical care, and other services. They are crisscrossed by pipes, conduit and cables that keep the electricity, water and utilities coming to us and ensure our waste taken away from us. Cities are essential to our effective functioning whether we live in one or not.

At a personal level disasters disrupt all we hold dear. They destroy familiar and valued surroundings and taint them with painful memories. The survivors may find the people they shared their lives with are killed, displaced or incapacitated, physically or emotionally.

Disempowerment

The displacement of people and destruction of infrastructure may significantly disrupt social and economic systems. Businesses suffer, jobs are lost, social structures no longer function and old roles in the community become irrelevant and people are overwhelmed by the challenges thrown up by the disaster and its aftermath. Outside agencies such as central governments, governments of other countries, charities and intra-government organisations such as the agencies of the UN provide much needed resources but these may skew local economies and foster a culture of dependency (Taylor 2009). They can contribute to a sense of disempowerment as local communities no longer feel in control of their own destiny, their wisdom and insights are unvalued and its custodians disregarded. People lose 'their sense of mastery of their world and the deep sense of wellbeing that goes with that' (Borrell 2011).

Erosion of connection to place

The survivors may well see their surroundings with new eyes, coloured by their experience of the disaster. They may find the things that once gave them pleasure in their surroundings (for example wooded landscapes, a river, a valued coastline) now become their enemy as bushfires, floods and storm damage elsewhere causes people to re-evaluate their surroundings as threats, rather than as assets. Things are destroyed and what remains is stripped of its old meanings or overlayed with new, negative associations (Parkinson, 2000). For many people it is easier to leave than stay, if they have a choice (Smith 2009).

With this exodus the community loses not just people but skills, inspiration, leadership and insight, diminishing the community further and leaving those remaining with a reduced capacity to deal with the problems.

Emotional and psychological damage

Disasters and conflicts destroy intangible but critical things such as hope, trust and security. Survivors will have lost many previously held certainties in life and the reassurance that life is 'fairly safe and secure' (Parkinson 2000). Disasters put people on an uncharted emotional journey; they are likely to be 'off the map', violently thrown from the familiar world, without certainty or the foundations of their quality of life. This combination of factors can present people with challenges of re-establishing their community and dealing with their loss when their usual support networks – their family, friends and professional circles – are also lost or unavailable. As Daryl Taylor, a survivor of the Victorian bushfires puts it, his 'network of support was hollowed out by the disaster' (Taylor 2009). Disasters and the loss they bring can overwhelm people, diminishing their ability to function in their roles as workers, partners, friends, parents, etc. They may find that their experience of the disaster and its aftermath triggers a range of psychological conditions such as Post Traumatic Stress Disorder which can be seen as 'a normal response to abnormal events' (Parkinson, 2000).

Survivors may find themselves bearing 'mental and emotional scars … for a very long time after a disaster' (Wisner 2009). Although invisible, these scars can have a profound ability to affect a person's quality of life. 'Repairing the roads and buildings would be the easy bit' according to Robb Kerr a planner in the aftermath of the Christchurch Earthquakes in 2010–2011 (Author's personal correspondence, 2012).

Figure 3. Finding their own way to deal with disaster, Christchurch NZ. (source: author)

Resilience

However people are incredibly resilient. Many show a remarkable ability to adapt to these changed surroundings and deal with their new challenges with creativity, humanity and humour.

Resilience is 'the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner'(UN Habitat 2010). Without resilience, communities are 'brittle', or unable to adapt; they are more likely to be profoundly broken by the event and are less likely to be able to cope with the disruptions and hardships of the disaster. When this happens recovery is likely to be delayed and people are more likely to become dependent on outside agencies.

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There is a high correlation between ability to cope with disaster and high levels of education and health, community bonds and previous successful experience of adapting to changed circumstances. In these circumstances people are more likely to be able to 'self-organise' and get things done as well as access appropriate assistance. Central to achieving this is the active engagement of community-based organisations. These have the most critical motive for success and know the community better than anyone else. They also have a 'nimbleness' of action that is often denied to bureaucratically-bound state bodies (Ealy L, undated). Their involvement makes a culture of dependency less likely and assists recovery, as was observed in some communities in New Orleans after Hurricane Katrina (Aldrich undated).

The recovery process

Many commentators note that the emotional journey to recovery is not typically an easy or straightforward one (Kaniasty et al 2004, Ursano et al 2004, Brewster 2005, American Red Cross 2012). They divide the recovery process into four phases:

- **Heroic phase:** great feats of altruism can occur and adrenalin allows people to achieve great things, in particular, rescuing their friends and neighbours and making exceptional efforts to help others.

- **Honeymoon phase:** people are just pleased to be alive.

- **Disillusionment phase:** anger, resentment and disappointment come to the fore, often directed at the authorities and the authorities' agents who are helping with the rebuilding. Key dates such as the anniversary of the disaster can often trigger these painful emotions.

- **Rebuilding phase:** people come to terms with what has happened to them and can work through their grief.

However everyone's experience of healing is different and people pass through these stages at different rates, sometimes stuck in a phase for years at other time missing stages completely. This is influenced by their previous emotional health, experience of the disaster, personal impact and the effectiveness of post disaster support amongst other things (Wisner B, 2009).

Consequently at any one time people are at different stages in the recovery process and the community may contain many people who may feel anxious, guilty, ashamed, angry, disconnected, emotional, depressed, confused or alienated, among other responses (Community Recovery Committee 2011). They may feel all of these things, some of them or none of them. People may be driven to find a release from the pain in whatever way they can. They may resort to drugs or alcohol to cope with the overwhelming nature of their trauma and rates of violence and abuse may rise (Stair & Pottinger 2005).

Rebuilding, recovery and renewal

By their very nature disasters are beyond the capacity of local authorities to adequately deal with and require outside help. However these people bring not only expertise, compassion and commitment, but also their assumptions and values which are usually formed elsewhere and usually within a different social context.

Their understanding of what is 'good' rebuilding may not match the views of the survivors about what good design is. The stakes are high; for those who keenly miss what was there, the rebuilding may look and feel like on-going destruction that takes them further away from their treasured past and can keep the emotional wound open, causing more problems and impeding recovery.

This was the experience of a section of the community in Marysville and Kinglake after the Victorian bushfires in 2009 when a number in the community looked aghast at the new 'Rebuilding Advisory Centres' (RACs) being constructed for them by the Victorian Bushfire Reconstruction and Recovery Authority. The buildings where built quickly and to a high standard, reflecting, amongst other things the heroic efforts of the architects (Bamford Dash) who worked pro bono and committed an incredible amount of time and effort to finish the project quickly. The resulting building was lauded in the architectural press and won several awards. It incorporates many references to the surrounding bush and contains numerous innovative and well thought out characteristics. However, as the first building of the 'new' towns, responding to new rules, set amongst cleared blocks and a significantly thinned out landscape the contrast to the remembered townscape was deeply upsetting for many and emphasised the loss and an apparent insensitivity by the authorities (Author correspondence 2011).

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In contrast to the polarising effect of the RAC buildings, just up the road from Marysville in Narbethong the new community hall had a remarkably different effect. The new hall (see Figure 4) designed as a collaboration of BVN, Arup and landscape design by Fitzgerald Frisbee amongst others is also an unapologetically modern structure and quite at odds with the building that stood there before. However it appears to have won broad acceptance and has served as a focus for the community to reform. There are many reasons for this but it appears that one of the main ones was the design of the Hall came from a process led by the community, in response to a need documented by the community.

The design team responded to an agenda set by the community and built a design that had been selected from a range of options presented to the community. Consequently, this departure from the township's old character was understood and sanctioned by that community and the emerging design was explained and understood by people who lived there and would use the hall.

Figure 4. Narbethong Hall on its opening day. (Picture reproduced courtesy of ARUP)

Conclusion

Disasters raise new and unexpected challenges for a community; they create a gap between the difficulty of the challenges people face and the available resources to meet those challenges. The stages and duration of the recovery process varies substantially between different survivors. Local authorities and other agencies charged with managing the recovery process can aid or impede this process by the way they interact with the community. Part B of this paper will highlight the importance of harnessing community skills for designers, emphasise on survivor participation in the planning and realisation of the post-disaster environment, and suggests some characteristics of design that may smooth the path to recovery.

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Jenny Donovan is principal of Melbourne based urban design practice Inclusive Design. Jenny has a particular interest in social responsibility and working in socially and environmentally sensitive settings. Jenny is the author of *Designing to Heal* published by the CSIRO which explores the potential role of urban design in facilitating communities to help themselves after disasters and conflicts.

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