

# The path to resilience

More haste, less speed

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**GREENSBURG**, Kansas, in America's agricultural heartland, is by no means a greenie enclave. It's tornado country. On 4 May 2007 an EF5 rated tornado – equivalent to a category 5 cyclone – tore through the area, levelling 95 per cent of the town and killing eleven of its fourteen hundred residents. The sidewalks and sewers were the only thing left behind.

What happened next was unexpected. Greensburg decided to rebuild itself green. Soon after the storm hit, Public Square Communities, a Kansas-based organisation that helps towns build social capital through 'positive conversations' about the future, quietly assisted in a process that pulled together the town's disparate groups to map a vision for recovery. A dream emerged: to become America's most sustainable and tornado-resilient town, deploying the most advanced clean technologies and encouraging like-minded people to join the effort.

The preface to the Greensburg recovery plan describes an intensive twelve-week process involving discussions between long-term recovery planning teams; local, state and federal officials; business owners, civic groups and citizens. The result: 'A community spirit and resolve to build back better, safer, and in a more sustainable manner... Unlike a traditional planning document that presents general guidance to a community, the Long-Term Community Recovery Plan is an action-oriented menu of key projects intended to be used for making critical funding and resource allocation decisions.'

Greensburg established a Sustainable Development Resource Office, to develop sustainable building programs and certification processes that ensured public facilities were of the highest standard, powered by renewable energy, with household energy alternatives devised to ensure affordability in an area that has bitter winters and hot summers.

Four years on, the town is the subject of a documentary series produced by Leonardo DiCaprio, and many homes are emerging that meet the coveted highest

green international building standard, LEED Platinum. Greensburg now has the Midwest's most environmentally high-performing hospital and city hall, water-efficient streetscapes and a geothermal-powered urban centre. Every LEED Platinum-certified project in Kansas is located in Greensburg.

John Deere Renewable Energy built and maintains the town's wind farm, with funding from the US Department of Agriculture and Rural Development. The wind farm supplies all the town's power needs and sells the substantial excess back to the grid. A review found that 'the rebuilding effort did not focus on the environmental benefits of green buildings, but rather on the goals of creating a more resilient, more efficient community.' Resilience – of property, commerce and community – is at the heart of Greensburg's recovery.

Climate scientists predict that Australia is on the frontline for climate change effects, both gradual and severe, given the continent's hot, dry and flood-prone terrain, combined with its exposure to cyclones fuelled by heating oceans.

Victoria's Black Saturday bushfires, cyclones Larry and Yasi, and the 2011 floods down the nation's eastern side are unlikely to be once-in-a-century occurrences, despite frequent references to this assessment. Queensland's new disaster-resilience portal, [hardenup.org](http://hardenup.org), is powered by a database of three thousand severe weather events since the 1850s. Senior Bureau of Meteorology forecasters look back and conclude that the twentieth century was a relatively quiet weather period, compared with the 1800s. This century appears to be reversing the cycle. More intense, if not more frequent, future severe weather events would hit larger populations, who have demanded more expensive and complex urban infrastructure than existed decades ago – increasing the potential cost of impact.

The climate change debate in Australia has focused on mitigation and the need to transform the energy mix, but because more than four-fifths of the population lives close to the coast or the bush additional measures are needed to adapt to emerging climate risks. Even if all greenhouse emissions stopped today, a two-degree Celsius increase in temperature is likely in coming decades. According to recent International Energy Agency emissions data the future is trending towards being four degrees hotter.

If the adaptive technologies and practises employed are carbon intensive, the global warming cycle will be refuelled. To build back the same community and business infrastructure as existed before runs the risk of losing assets during the next major event, and the next one. As the US disaster-management agency, FEMA, put it on Earth Day 2011: 'The growing emphasis on creating sustainable communities, whether through innovative green building practices or reducing the materials and energy footprints, creates opportunities to build safer and greener, both before and after disasters. By building green and taking steps to protect your property at the same time, you not only help protect the environment but also protect your property against the forces of nature.'

The Insurance Council of Australia calculated that by September 2011 Australians had lodged 826,329 claims worth \$3.81 billion from the year's natural disasters. The Queensland Treasurer's estimate of overall damages exceeds \$6.8 billion – half of which was attributed to damaged road infrastructure. According to the Bureau of Transport Economics' last major assessment, natural disasters cost Australia more than \$37.8 billion between 1967 and 1999, in 1999 prices.

By late last year the federal government had through the Natural Disaster Relief and Recovery Arrangements funded 453,000 claims and grants totalling \$784 million for events in Queensland. Given the amounts of money involved and the stated objective of all levels of government to mitigate greenhouse gas, it is worth asking why sustainability is not the centrepiece of Australian disaster recovery. Post-disaster renewal can advance sustainability and community resilience – and early signs of this are already emerging.

The momentum following a disaster tends towards fast, low-cost or 'value for money' recovery. Governments are judged by the speed of returning to business as usual. Short-term political and media cycles fuel this tendency, and reinforce the message that a quick recovery best addresses the needs of disaster victims. All three factors were present in the distressing aftermath of the Black Saturday fires.

Victorian Premier John Brumby suffered personally and politically from perceptions of a recovery slowed by bureaucracy. Two years after the catastrophic fires planning permits had been issued for just 731 homes of the two thousand lost. 'Recovery a painfully slow path', 'Bushfire rebuilding a failure', 'Black Saturday recovery a slow burner' and 'Victoria's budget will conform [sic] slow recovery from crisis', the headlines read.

The frustration of business leaders wishing to support Black Saturday communities early on was understandable. Yet the slow response may have been due more to a lack of community consensus than to red tape – as well as the failure to provide incentives to rebuild the rental housing essential for lower-income residents. Unlike the Greensburg experience, support for meaningful community conversations to guide integrated recovery planning was lacking. There was not enough time to inspire a collective vision. Centralised recovery funding combined with red-tape-ridden grant programs to disempower locals. Some bushfire-affected communities started their own conversations but elsewhere communities were fragmented, and the media could exploit tensions for stories.

The impression of sluggish progress and meddling bureaucracy was quickly politicised, and Brumby conceded electoral defeat a few months short of the two-year anniversary of the firestorm.

It is understandable then that when establishing the Queensland Reconstruction Authority (QRA) Premier Anna Bligh stressed, 'The authority would have the powers to cut through red tape and would be required to report publicly on its

progress... We want to be standing here in twelve months' time being able to say that the reconstruction task is proceeding as fast as humanly possible, not stuck in someone's in tray waiting for an approval.'

Six months after Cyclone Yasi, media pressure mounted and unhappy residents struggling to regain a foothold were ready to lash out: 'It's all good that the government has talked about speeding up the recovery but doing something two years later is not good enough,' Nathan Mood, owner of the Mission Beach Dunk Island Water Taxi service, told the *Cairns Post*.

To counteract any impression of slow progress, the recovery-speed message has been ubiquitous. Students from all ninety-three of the state's affected schools were back in class by early March 2011, and by August 92 per cent of the state's devastated road network had been reopened.

The Cyclone Larry recovery, on the other hand, was developed in sheds and farm halls, using an intensive community-engagement process involving local leaders, civil servants, NGOs, politicians, citizens; everyone – except the media – had a say. Instead of a command-and-control response, 'circles of learning' opened a range of emotions, and helped public servants to serve their communities. Democracy came alive for Jim Varghese, then the head of the Queensland Department of Infrastructure, who enabled this process to produce energy, passion and good results.

In the Larry recovery circles of learning were used to build legitimacy and support through purposeful, shared dialogue, and by bringing together perspectives of public value, sharing information, building a common identity and giving voice to the public. In this way, a community-centred understanding of what was required from government evolved on the ground. Describing what it took to build this dialogue, Jim Varghese cites *The Cluetrain Manifesto: The End of Business as Usual*: 'To have a conversation, you have to be comfortable being human – acknowledging you don't have all the answers, being eager to learn from someone else and to build new ideas together.'

Cyclone Larry left behind flattened banana fields and sugarcane plantations. Half of Innisfail's homes were damaged, and one in three lost their roofs. Wildlife sites were destroyed and people's lives were shattered, placing great stress on many communities. Government responded in line with community concerns that emerged from the on-the-ground dialogue. In response to people's desire to maintain proper local employment in areas with devastated crops, for example, an employment package was announced, covering wage subsidies and workforce retention in the region.

The lesson from the Larry style of disaster recovery – recovery through dialogue – is that empowered communities are capable of self-organising to influence appropriate government responses to their concerns. Unfortunately for the

thousands of Queenslanders whose personal challenges fell outside the remit of the official 2011 government response, the opportunity for dialogue was missed.

The recent recovery is more focused on efficiency. The Reconstruction Authority's Value for Money Strategy is designed to keep costs under control. This emphasis on tightly managed taxpayer funds will go down well with a media alert to budget blowouts.

Signs of renewal are emerging in the flood recovery, despite the tight remit of the official government response. The QRA's decisive support for Grantham's innovative land swap, enabling residents to build on safer, higher ground, and its resilience guidelines, will support residents to 'build back better' – though enormous practical challenges remain, including the grim reality that debris remains embedded in trees and creeks, evoking painful memories, and some Grantham residents cannot afford to move to higher ground. Over the coming months and years community, business and research organisations can support Grantham community deliberation on new models of sustainable, high-resilience renewal. Residential developments that showcase the potential for innovative renewal and longer-term utility bills may yet emerge in Yasi-hit areas.

Despite some innovation and some tangible progress on schools, roads and property-resilience guidelines, and flood maps to raise local hazard awareness, Queensland's race to swift, red-tape-free recovery may be less than ideal. Greensburg Mayor Bob Dixon advises others responding to disaster to slow down before acting: 'I lost just about everything in the tornado too, so I understand just wanting to get it cleaned up and get on with it. But I just caution everybody in a disaster – don't make those life decisions rapidly. You're not going to get something built back in a few weeks anyway.'

Spending slowly, according to a shared vision, and spending a little more upfront to save more later – the energy-efficiency objective underpinning climate policy for all sides of Australian politics – makes sense when you have to rebuild homes and infrastructure. But the message is at odds with the objective of avoiding extra costs to achieve fast, short-term delivery results, and the punishing, and politically potent, reality of the suffering endured by those who have lost so much.

In Greensburg the return-on-investment message about energy efficiency has been heard. Wylan Fleener, the fourth-generation owner of Fleener Furniture and Flooring, is but one example. According to an entrepreneurial-success magazine covering his story, 'To his sceptical neighbours – and there were more than a few – Fleener admitted sustainable building materials added 5 per cent to his costs. And then he'd tell them how much he was saving on heating and cooling.'

In the centre of the Ninth Ward of New Orleans, meanwhile, an eco precinct is emerging with support from Global Green USA (the American affiliate of Green Cross Australia), Habitat for Humanity, Brad Pitt's Make It Right Foundation, and

dozens of church, business and local community groups. At its heart is the Holy Cross Project, an iconic sustainable village starting with five LEED Platinum-certified homes, supported by the Home Depot Foundation (the US equivalent of Bunnings). The project will include a Community Development and Climate Action Center, and approvals are being sought for an eighteen-unit multi-family building, providing the first low-income rental apartment housing in New Orleans built since Hurricane Katrina.

Holy Cross homes are designed for maximum hurricane resilience and, according to Global Green USA's chief executive, Matt Peterson, 'The first homeowner's energy bills have never exceeded \$30 a month,' despite New Orleans' sweltering summer. For Ninth Ward residents on low incomes, lower-cost energy makes a big difference to everyday life.

Soon after Black Saturday the small Victorian town of Flowerdale invited the CSIRO's Sustainable Ecosystems team and the community planner Nigel Bell, from Eco Design Architects, to community meetings 'looking at how the community can drive towards a safer and more sustainable future as Flowerdale recovers'. Building on this theme Green Cross Australia and its partners, the Alternative Technology Association and the Green Building Council of Australia, have offered communities affected by Black Saturday an online portal that assists people to make environmentally resilient rebuilding choices. The website, [builditbackgreen.org](http://builditbackgreen.org), is funded by Sustainability Victoria and has been used by ten thousand bushfire-exposed and bushfire-affected people. It features a green building guide covering more than five hundred environmentally responsible and bushfire-safe products and services. The Australian Conservation Foundation is taking an interest, and in March 2011 it seemed that there might be similar momentum building in Brisbane, when more than a hundred corporate and community partners joined government representatives at a workshop to catalyse ideas for a sustainable flood recovery.

Within months, though, this momentum – the wish to future-proof the state and create environmentally resilient, exemplary, cost-effective long-term projects – was overcome by an urgent desire to replace like with like as soon as humanly possible. We still have a long way to go.

Making the most of the opportunity a disaster regrettably affords can produce long-term benefits that go well beyond physical reconstruction. According to Beth Galante, the director of Global Green USA's New Orleans office, the city 'had a very poorly performing education system when compared to other parts of the US or other developed nations. The storm destroyed the school system overnight. The rebirth has been awesome. We now have a decentralised, entrepreneurial school system with all kinds of new models emerging (some private, some traditional public, some supported by universities). Student test scores have improved every year after Katrina.

'Sustainability has been a big factor in this equation. Global Green USA has led a green-school infrastructure project – funded by the Bush-Clinton Katrina Fund – that delivered six new LEED-accredited schools, and now green schools are embedded in the system. By legislation, all new schools and school renovations in New Orleans must reach at least LEED Silver standard. That's a nation-leading accomplishment.'

Glimpses of school system renewal appeared in the Black Saturday recovery. 'People say, *Why didn't you build it two weeks after the fire?*' Premier Brumby reflected, defending delays in rebuilding schools in Marysville and Strathewen. 'The reason we didn't do that is because we wanted to talk to the local community, to consult with the local community to make sure that the facility that we put back in...was a better facility than the one that was there before.' Kinglake residents applauded the more sustainable and multi-purpose school that emerged in recovery.

After the January 2011 floods Queensland students were back in class in record time, and this was good for morale. 'There has been a terrific effort to get our schools back in shape so quickly after the floods, because it's critical kids have a sense of normality and routine after the trauma they have experienced through this disaster,' Premier Bligh said, some weeks after the flood.

Haste has a price. Milton State School, which has been affected by floods in 2011, 2010 and 2008, has two classroom blocks located in an area where water builds whenever it rains heavily for twenty minutes. The new classrooms were not elevated because it would have delayed the primary objective of getting the children back to school quickly.

The \$60 million new investment in multi-purpose cyclone shelters – which will sit alongside schools – funded by the Abu Dhabi and Queensland governments could have been designed through a deliberative process that enabled the community to come together around environmental resilience and community development aims. But that would have slowed down building the shelters, so in the pressing political climate the process was assigned to the Department of Public Works and is on track for delivery in 2012. As a result the shelters are unlikely to win any design awards or set new benchmarks for community engagement, environmental performance or property resilience. An opportunity to creatively tailor each shelter's design and functionality to local community needs has been missed.

Engineering services and infrastructure companies are champing at the bit to develop prototypes for new forms of transport and built infrastructure that are more resilient, create meaningful and connected places, and deliver strong sustainability outcomes. This combination will enhance the resilience of the built environment and ecosystem in the event of more natural disasters. However, at this stage, no exemplary sustainable infrastructure projects have materialised in Queensland. One

promising sign is that sub-standard Queensland roads are at least being rebuilt to the national standard in this recovery – no mean feat, given the scale of the affected road network. Sadly, the national standard may not set a high enough benchmark for hazard-prone areas. The standard also fails to address the important urban or ‘place-making’ contributions made by large infrastructure, and falls short in preserving ecosystem services.

Making resilience and sustainability a central priority demands a fundamentally different approach. This needs to start with new models of post-disaster community deliberation, with timescales that suit the scope of each recovery. Whereas Black Saturday hit a relatively small area very hard, the Queensland floods and Cyclone Yasi covered three-quarters of that huge state. Getting the fit right between local consultation and effective processes that minimise red tape is a challenge not well suited to the immediacy demanded by political and news cycles. Expanding the scope of integrated recovery support to address the needs of the tens of thousands of Australians whose homes, businesses, schools and communities are significantly affected – though not destroyed – by large-scale natural disasters can and should be considered. Residential recovery offers an opportunity to retrofit for resilience and environmental performance, and reduce ongoing household costs.

Broadening the existing ‘betterment’ aspects of Natural Disaster Relief and Recovery Arrangements would ensure that good money is not sent after bad as the recoveries from repeated natural disasters pile on top of each other. Currently, additional spending can be justified if a designated piece of critical public infrastructure is restored to a more disaster-resilient standard than it was previously. This could be extended to support community development aims, including sustainability and public safety – in this way multiple policy objectives could be addressed beyond immediate humanitarian relief, recognising that marginal additional funding and deliberation is required.

In January 2010 the US Institute for Sustainable Development convened an expert group funded by the Rockefeller Institute, in co-operation with the US Department of Housing and Urban Development and the Department of Homeland Security. The group found that ‘after a disaster, the focus of the federal government is on immediate response and rebuilding, not on assisting communities with sustainable long-term recovery... The emphasis on the speed, rather than quality, of recovery impedes the ability to integrate hazard-mitigation measures into rebuilding processes.’ Solutions proposed mirror the thrust of this reflection, to institutionalise processes that build community support around a common vision, allow communities to capitalise on opportunities that disasters present to rebuild better and minimise the impact of future disasters, and integrate climate adaptation and mitigation to ensure that new renewable energy systems can withstand climate change.



There is also a need to learn from what is happening elsewhere. As the US Midwest Tornado Alley and hurricane-affected Gulf Coast have shown, communities hit by natural disasters can be encouraged to share innovative recovery stories and to visualise what may be possible if environmental resilience is advanced. The desire to build back quickly is tempting, but supporting communities while they take the time to imagine a more compelling alternative can make all the difference.

References available at [www.griffithreview.com](http://www.griffithreview.com)

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