

ABSTRACT

The recovery phase following an emergency event develops capacity for post-traumatic growth in affected communities. This endeavour to build and embed resilience among communities gives impetus to successfully negotiate current and future natural hazard events. An important component in this process is providing effective external support, which assists the physical rebuilding of assets and underpins emotional wellbeing. This paper describes current in-field experience where independent building professionals have contributed to the recovery phase of recent South Australian emergency events: the Sampson Flat bushfires in January 2015 and the Pinery crop fires in November 2015. Much has been learned about the needs of people experiencing such events with respect to their re-establishing of homes and built environment and navigating building regulations, planning applications and approvals.

Helping fire-impacted families in rebuilding: toward enhanced community resilience outcomes

Emilis Prelgauskas describes fieldwork to identify factors that affect people's ability to re-establish their built environment after disaster.

South Australian fire events

2015 began in South Australia with the largest near-capital city bushfire since Ash Wednesday in 1983. Seven small semi-rural communities affected by fires were within the Sampson Flat fireground that abuts Adelaide's north-eastern suburbs. The resulting fire scar was over 12 500 hectares, with a 222 km perimeter that burnt across undulating bushland for seven days before it was declared controlled: 27 homes and hundreds of outbuildings were lost.

2015 ended with the Pinery fire that crossed open crop country north of Adelaide's peri-urban fringe. In eight hours over 86 000 hectares were burnt, two lives were lost, and 88 homes and hundreds of outbuildings were destroyed.

A group of appropriately qualified professionals (planners, architects, engineers and heritage advisers) provided pro bono help to residents to rebuild after these disasters. The experience helped streamline the rebuild process and provided support to reduce the stress on homeowners. The access to professional, practical problem-solving skills and the development of alternative solutions (often required because rebuilding after bushfire does not necessarily fit standard, present-day regulatory protocols (ABCB 2010)) was a significant contribution during the recovery phase.

Architects responding to emergencies

The Australian architect profession has a long tradition of providing support during overseas emergencies, through agencies such as Emergency Architects based in Sydney, and Architects without Borders in Melbourne. These groups work to assist community rebuilding projects after disasters including in Sri Lanka in 2004 and in East Timor in 2011. Response draws on inspiration from parallel international disaster recovery initiatives of Japanese architect Shigeru Ban (Ban & Shodhan 2003) and others (Lewis 1985, Meinhold 2010).

Emergency events within Australia have triggered emergency housing schemes and investigations, including the emergency housing proposals after the Black Saturday bushfires in 2009 (O'Brien 2009) and other individual

recovery proposals (Godsell 2001, Moore & Edwards 2009, Architecture Australia News 2013).

The gap these building professionals sought to fill in 2015 in South Australia goes beyond earlier measures and was instigated to address an absence of credible independent advisory arrangements to assist individuals and families who had lost their homes. This local, practical on-fire-ground help post-emergency has been affirmed by the welcome presence of planners, architects and non-government organisations (NGO) attending recovery phase service providers and community reference group meetings.

Habitat for Humanity is one such NGO that deploys early. The organisation helps residents with the often overwhelming task of cleaning up fire-affected sites and provides emotional support, which is ongoing along the rebuilding timescale. This allows valuable, confidential feedback to be shared with the professional advisers regarding individual cases, to which targeted advice and bespoke solutions may be needed (AGO 2009, Schaubé 2004, Ramsay & Rudolph 2003). Individual families or community groups may ask for help with these alternate solutions directly, or they can be referred by recovery centre staff.

The help offered

Like most professions the daily work of architects and planners in ordinary circumstances already involves inherent complexity and stress. Awareness of this by the professionals means an almost reflex recognition that people in extraordinary circumstances will need additional help and guidance to navigate regulatory requirements and contractual arrangements. Processes include building and construction rules, waste controls, insurance claims, and later, managing builders and trades people on-site. These are demanding activities even during a normal new build on a new estate or prepared urban consolidation site.

The experience by South Australian independent building advisers mirrors that found in other emergency events (Donovan 2013), in that special circumstances post-emergency cannot be effectively managed with only 'business-as-usual' normal regulatory protocols. Attempts to do so may be detrimental to desired outcomes and to the aims of the recovery phase overall. Using standard development terms (e.g. 'your application may be refused unless you provide.....') can imply that people in the fire ground are being blamed for the fire.

Communities, businesses, families and individuals affected by disaster events will variably manage the stress of a bushfire emergency and loss of assets and possessions according to their individual circumstances. All people working with them, including built-environment professionals, need to be cognisant of this.

Assimilating reactions to the fire event itself and coming to terms with the extent of the impact may be complicated by issues including perceived failure of fundamental personal tenets (e.g. loss of a home despite

developing what was believed to be a well-prepared bushfire survival plan). This may be one of a spectrum of influences affecting the decision whether, and how, to rebuild.

Some families want to 'do something' immediately. Others, or individual family members, may wish to delay and take a considered approach. Some will still feel overwhelmed and may need assistance through the recovery process to understand that things like body biochemistry is likely to be responsible for feelings of inability to assimilate information or make decisions. These reactions, often called the 'adrenaline phase' and the 'cortisol phase', are described in the all-hazards literature (Gordon 2009).

The time taken to think through the strategic and operational steps that lead to physical (and emotional) rebuilding will vary from weeks to months, even years. Some will decide never to rebuild. Others may just need time, and will take that next step when their situation is conducive to starting the rebuild project (Fahy 2014). Once a decision has been made to proceed, the rebuild process must be malleable enough to accommodate the conditions encountered. This flexibility is required because unlike normal build sites the site may need remediation before any work can commence. A stable, newly built access route onto and around the land, removal of debris from the build site and surrounds, and dealing with and removing on-site hazards (such as unsafe trees and asbestos) will be mandatory.

While a rebuild will often be located on the same site on the property, the new construction will almost certainly differ from the original. Changes to minimum regulatory standards over time require compulsory compliance with current standards. The Bushfire Attack Level ranking¹ may have been reassessed, material selections and construction systems may have evolved, and modern requirements for new energy efficiency, general and disability access, earthquake and bushfire resistance may have been written anew into regulation.

As work commences, various contractual arrangements may be involved. Sometimes 'progress' in the physical building process may not be quite what the homeowner had expected, and this can bring new stressors. For example insurance companies may authorise their officers to decide on materials used and to make payments directly to providers. In doing so, the owner loses control over important choices and may be denied input to such matters as quality of work and retention of ancestor artefacts (two examples provided in 'special needs' below). Alternatively a lump sum payment could leave the owners with a site and a heap of rubble and a cheque, with little or no guidance as to what comes next.

The standard day-to-day development control processes of regulatory authorities may be inadequate during recovery from disaster events. Their application and enforcement may be inappropriate without recognising the inherent special conditions and associated emotional

¹ Australian Standard 3969. At: www.as3959.com.au/bushfire-attack-level/.



Fire may be diverted by the efforts of fire crews but elements on building facades such as porous stone and old mortar can be effected by radiant heat and require repair.

Image: Emilis Prelgauskas

state of applicants. There is little common ground between a rebuild on a fire ground and a new building for which the standard regulations are intended. A critical point of difference is found in the human element, being the superimposed physical, emotional and psychological trauma experienced when home, outbuildings, assets, environment and animals are lost—and in the worst cases, relatives and friends. This calls for more people-focused and holistic processes.

Individual circumstances might involve incongruities that require straightforward, problem-solving skills to assist and develop the owner's positive outcome expectancy. A recent example concerned a stand of significant trees that once provided shelter to the adjacent, now destroyed, building. Burnt above and below ground, these trees required removal but the cost was prohibitive and replacing the building could not proceed. What had been an aesthetic asset became an unsightly encumbrance.

Property owners might turn their losses around by using the opportunity to build their bushfire preparedness knowledge and response capability. They could upgrade their home and outbuildings to a standard beyond minimum compliance. This might enable a 'stay and defend' option in future fire plans.

The propensity to change hazard-level assessment after a fire event can impose a new set of criteria, to which former standards are no longer translatable. This added complexity takes time, money and emotional energy to analyse.

Terminology can be problematic, which can be a barrier to good communication and understanding. A typical example is the term 'non-complying', which erroneously conveys the impression of being 'below par', rather than the reverse in that it actually invokes assessment of merit. People outside the industry could be forgiven for their confusion and need assistance to navigate the jargon. From the layperson's point of view, independent advisers who help put the language of regulation both

plainly and into 'bite-sized chunks', allow a difficult time to be tackled one step at a time.

Independent advisers – a different relationship with community

The purpose of independent professional advice is not to develop a rebuild proposal. The aim is to permit the landowners to have a broad view of all their options, including alternative solutions where conventional answers to construction are incongruous with the presenting circumstances.

Experience in-field in the Sampson Flat and Pinery fire grounds has demonstrated that the availability of independent professionals in the recovery process has delivered a number of positives. Individual advice to people or families is made available at their request, pro bono, and without resemblance to the usual owner-architect relationship. Independent advice clearly differentiated itself from commercial solutions that may have the appearance of vested interest, or from government processes, which some community members may find daunting.

Independent professionals offer reassurance that progress can occur at a family's own pace, when they are ready. There is no need to rush, as people will invariably assimilate the events that have affected their lives according to differing time frames, as each family reassesses its future. In parallel, trained professionals are mindful of the psychological care imperatives involved and the flux which necessarily exists between psychological well-being and progressing the rebuild. Some of the independent advisers who were part of the service providers group at Sampson Flat added to their core professional training by completing the Red Cross Psychological First Aid Certificate.

The task of independent advisers included describing to fire-impacted families the interrelationship of:

- Country Fire Service requirements (Bushfire Attack Level, and on-site firefighting infrastructure to give crews on-site resources for asset protection tasks in a future event)
- assessment for planning consent, including clearly defining the rebuild as post-emergency rather than as a new development
- certification and sources of engineering and compliance under building and construction rules and the list of information inclusions to meet current regulation
- accessory permits including the siting of powerlines and waste control measures.

Written communication is also important. The phrase 'rebuild post-bushfire emergency' in documentation is helpful to remind those removed from the affected community and tasked with processing paperwork, that the rebuild arises from a large-scale event where the homeowner was involved. In this instance, the owner is not the instigator or 'developer' for the rebuild in the

usual sense as would occur if choosing renovation or extension of a home.

Inherent in these discussions are conversations that canvass each family's bushfire action plan, as this will significantly alter the requirements for the replacement building. If the action plan is to 'leave early', normal building compliance levels suffice. If it is to 'stay and defend', a best-practice build with enhanced fire resistance and in-built firefighting capacity will be needed (ABCB 2010).

Documents

Part of the loss of the family home can be loss of documents such as land titles, previous building plans, and approval documents. Some can be retrieved from other sources (Land Titles Office, solicitor or bank, or local government archives). Nevertheless, some documents may not be retrievable. This may include items such as proof of owner qualifications (unpaid registration causing the owner's building license to lapse), without which approval to proceed can be delayed.

Other real world, in-field examples identified as disruptive to progress include:

- Requests to homeowners at rebuild application for approval for a 'site plan' as essential to move assessment forward. This document is often not generated as part of the building proposal itself, particularly where a rebuild is on the same placement as the destroyed original building. To solve this, the independent advisers provided an aerial view (obtained off Google Earth) of the entire property (the destroyed building site visible in the photograph) annotated with relevant regulatory information (contours, boundary setbacks, etc.).
- Administrative processes that are not flexible enough to adapt to a post-bushfire rebuild. The independent advisers helped applicants structure their submissions to avoid duplication of forms and fees; separating 'information' paperwork from 'compliance' documents. This occurs, for example, where property access for firefighting, built to the required standards of road grades and fill compaction, is needed to allow the rebuild and to improve site standards of bushfire safety, but is not intrinsically part of the 'rebuild' *per se*.
- The occasional requirement for non-affected parts of the site or building structure to be upgraded as well as the rebuild to meet current regulation requirements. This could include replacement of in-ground services unaffected by the fire (such as waste treatment and dispersal) and for the installation of non-combustible firefighting water tanks, complete with firetruck-compatible fittings and standpipe.

Owners may find these unexpected conditions onerous and costly. While there is merit in upgrades to improve safety and performance, this should be balanced against achieving a rebuild in a timely and considerate manner.



Access restrictions can arise when post-fire hazards are identified.

Image: Emilis Prelgauskas

Special needs

Individual situations across fire grounds in South Australia in 2015 revealed unique circumstances the independent advisers had to consider. Traditional stone buildings were affected differently by the intense fires. Post-fire, insurance assessors tend to emphasise a 'demolish and replace' conventional construction rebuild, perhaps in attempts to minimise inconvenience—the focus being the use of available insurance monies. In contrast, for some landowners, the original building holds multi-generational meaning and its value is greater than the monetary cost of replacement.

The most striking example of this was a farmhouse with a facade embedded with the ballast stones from the sailing ship that brought the family's forebears to South Australia. As such, a 'demolish and replace' recommendation was unacceptable. The independent advisers arranged pro bono advice from a structural engineer and a heritage architect about the potential and practical options for rebuilding the original as a whole, in part, or just rescuing the facade.

Even where 'asset protection' efforts by fire crews and fire bombers have been successful, fire-front heat load damage to traditional limestone and lime mortar structures can occur. On some sites, assessors suspected asbestos might be present, raising issues regarding access on work health and safety grounds. Protection for volunteers helping to clean up, building trades people, and the land owner is required and this adds to the rebuild budget for removal and disposal of hazardous materials. The independent advisers enlisted licensed assessors to provide definitive information for individual sites that allowed the process to move forward.

This opens up considerations as to how communities and disaster-affected people deal with a dramatic change in

circumstance where a previously legal building material is now a significant health issue.

On the nonsensical side

Individual experiences demonstrate just how far from the ordinary the fire ground experience is. People living on the fire scar can find communicating this to 'outsiders' challenging. This adds another layer of frustration and emotional impost. For example, at the Sampson Flat fire ground, the owner of a destroyed home contacted an overseas call centre to cancel a satellite entertainment system. The recommendation from the provider was to 'switch it off and switch it on again'. The call centre operator was unable to comprehend, even after repeated explanation of the devastation caused by the bushfire, that the reason the service was not needed was that there was no longer a house to which the dish could be connected.

Similarly, 'estimated' energy supply accounts were sent to fire-affected account holders for the post-fire period. With no building on-site, the advice back to the provider was that both the connection and the account were redundant. Negative external inputs such as these can detract from the progress made in recovery. Access to independent advisers, as well as community support, offers assistance and a buffer against such circumstances.

Resources offered for independent advisers

www.anbg.gov.au/bibliography/fire-plants.html

www.csiro.au/en/Research/LWF/Areas/Landscape-management/Bushfire/Fire-spread-models

www.apsvic.org.au/plant_fire_resistant.html

www.anpsa.org.au/fire.html

www.naturalresources.sa.gov.au/adalaidemtloftyranges/land/fire-management/sampson-flat-fire-recovery

www.rdv.vic.gov.au/fire-recovery-unit/planning-and-rebuilding

www.dss.gov.au/our-responsibilities/communities-and-vulnerable-people/publications-articles/spontaneous-volunteer-management-resource-kit

www.regionalaustralia.org.au/wp-content/uploads/2013/08/From-Disaster-to-Renewal.pdf

steelscreek.vic.au/publications/

history.cass.anu.edu.au

Conclusion

This work represents the beginning of a longitudinal study of fire-affected communities. In-field researcher-practitioner observation and interaction with affected individuals and families via telephone, email, and face-to-face, individually and at community meetings are integral to the recovery process. In addition, outreach meetings scheduled specifically for various rebuilding matters has generated a large amount of data that has potential to inform future recovery processes.

Participating in local recovery committee meetings and discussions allows the sharing of insights and raises issues from contributing agencies in a professional, confidential setting. The independent advisers are entrusted with information not provided by homeowners to other agencies. Subsequently, issues that may have been missed can be identified and addressed. Human attachment to place is well documented in the natural hazard literature (Eriksen 2011, Paton 2013), and this is understood by building professionals. While the focus of the recovery process is rightly on the people, attachment to their natural environment adds complexity. Recovery is about people, and people are part of a complex whole – a community and a physical place.

The professions represented in the advisers group are ideally suited to working in a social science setting on fire grounds. The attributes of the professions' education begin with understanding the psychological implications of human response to spatial form, materials, colours, and context toward emotional comfort.

The independent advisers involved in the 2015 South Australian fires indicated they would be available to assist the impacted communities, fully expecting their assistance would be needed sporadically across weeks, months and years. The experience is that access to such expertise is a positive contributor to the recovery process. Paton (2013) indicates that positive outcome expectancy can be diminished by uncertainty, variable organisational trust, and suboptimal community engagement. The independent advisers provided much-needed, accurate information with professional credibility. They were able to help reduce community frustration fuelled by misinformation or inexperience of organisations or personnel. And as we 'learn by doing' the advisers add to their skills, knowledge and outreach capability, and acquire experience that will better equip them next time around.

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