THE BUILDING ACT AND RECONSTRUCTION PROGRAMMES IN NEW ZEALAND: MATTERS ARISING

James Olabode Rotimi, University of Canterbury
email: jrotimi@unitec.ac.nz

Suzanne Wilkinson, University of Auckland
email: s.wilkinson@auckland.ac.nz

Dean Myburgh, 80/20 Options NZ Limited
email: dmyburgh@xtra.co.nz

Kelvin Zuo, University of Auckland
email: xzuo001@ec.auckland.ac.nz

Abstract

The study is an on-going research initiative to determine the effects that the implementation of the Building Act 2004 will have on post-disaster reconstruction programmes in New Zealand. Particularly, in large-scale disaster events with sudden-onsets, the provisions of this Act and other legislative provisions need to be supportive and enabling so as to facilitate speedy reconstruction and reinstatement.

An on-line survey of building control officers and other disaster practitioners in New Zealand was undertaken and their responses to issues connected with application of the Building Act 2004 are analysed quantitatively.

The results indicate that there remain challenges to meeting reconstruction objectives both efficiently and effectively under the new Building Act regime. Prevalent amongst the matters raised were those of procedural constraints as a result of high consenting standards and other logistic considerations.

Considerable attention is required to implement the Building Act and other legislation during the two overlapping phases of response and recovery. The desire is to create the best possible conditions that will encourage rapid rebuilding of lives and communities after large-scale disasters in New Zealand.

Keywords: Building Act; Legislation; Post-Disaster Reconstruction.

Introduction

There is no doubt that 21st century communities are more vulnerable than ever to most forms of natural disaster. The scale and magnitude of recent destructions are unprecedented. There has to be a proactive engagement in disaster management activities that will not only reduce these

impacts but also increase the resilience of vulnerable communities to future events. Pre-planning activities are therefore both socially and economically desirable.

One aspect of pre-planning is the need to put in place viable policies and procedural arrangements that will facilitate recovery after disasters. Such disaster management policies may include one of a number suggested by Petak & Atkisson (1982): action-forcing, attention-focusing, recovery, technology development and transfer, regulatory, financial planning, system management and optimisation, and direct-action policies. However only recovery and regulatory policies are the focus of the research on which this paper is based. These policies give guidelines for participatory roles of stakeholders, the assignment of authorities and responsibilities to those stakeholders, and how disaster activities are to be coordinated to achieve recovery objectives.

An important recovery objective is to re-settle displaced persons as quickly as possible after a catastrophic event. This will help to stem the risks of permanent harm and other psychosocial losses. It is often the case that evacuees to temporary shelter and accommodation end up being permanently kept away from their homes. Reasons for this are traceable to their inability to build back their homes because of restrictive institutional policies or legislations. Studies allude to the fact that subsisting legislations have become impediments to the realisation of post disaster reconstruction objectives (Meese III, Butler et al. 2005; Rotimi, Le Masurier et al. 2006; Middleton 2008).

There is always the tension between strictly applying re-development regulations, which aim at preventing a recurrence of the previous community's vulnerability, and on the other hand, allowing the affected community to move back to their former habitation. Clearly, the quicker communities return to habitability in as many of their homes as possible, the better it will be for restoring a sense of normality (). However disaster management agencies will aim for a 'build back safer' situation. Thus it is unwise to allow a deregulated post disaster reconstruction.

Decisions pertaining the application and implementation of development regulations will always be a trade-off between idealistic goals and expediency. The current study therefore describes one aspect of a larger research initiative that seeks a compromise between regulatory requirements and post disaster reconstruction objectives in New Zealand. The paper highlights some of the issues that may arise from the implementation of the Building Act (2004) in the event of a large scale reconstruction programme in New Zealand.

The Building Act 2004, New Zealand

The Building Act provides for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings, to ensure that :

(a) people who use buildings can do so safely and without endangering their health; and
(b) buildings have attributes that contribute appropriately to the health, physical independence, and well-being of the people who use them; and
(c) people who use a building can escape from the building if it is on fire; and
(d) buildings are designed, constructed, and able to be used in ways that promote sustainable development.

The Act prescribes the requirements of the national building code which requires buildings and other associated features to meet certain performance standards like durability, fire safety, sanitation (services and facilities), moisture control, energy efficiency and access. It is administered at the national level by the Department of Building and Housing (DBH) and at the local level by Building Consent Authorities (BCA) through a building consent process. The responsibilities of BCAs under the Act can be assigned to Independent Qualified Persons (IQP). IQPs include building and engineering professionals who have undergone an accreditation and certification process to act in the capacity of consent and compliance officers. This provision in

the Act for IQPs is useful as it devolves responsibility from the BCAs to IQPs and helps to reduce workloads in times of needs.

Building Consent Authorities are themselves required to be accredited by the Department of Building and Housing. Only a few of the local councils have so far received certification under the new Building Act regime.

Building consent processing involves the house owners, the designer/builder and the Building Consent Authorities. Consent is required for all building work in connection with the construction, alteration, demolition or removal of a building; and is only granted when the BCA is satisfied that works are in accordance with the building codes and associated regulations. Works cannot commence until approval/consent is granted. Under normal circumstances the building consent process would be expected to last 20 days but the reality is far from this.

The Act requires a strict inspection of work progress during construction at 'hold points' corresponding to progress milestones. Each defined stage must be inspected and certified before subsequent stages can be started. Inspection provides some certainty about code compliance and construction quality; and that constructed works are in accordance with the original specified in the approved consents. At completion of all works a Code of Compliance Certificate (CCC) is issued.

The problems with legislative provisions

Legislations that apply to routine construction provide for the safe development of infrastructure, capital improvements, and land use, ensuring preservation and environmental protection. However, there appears to be little provision in several areas of legislations to facilitate reconstruction projects. Feast (2004) identified several issues in relation to planning and construction legislation that would impede reconstruction of Wellington, New Zealand following a major earthquake. The study suggests that much of the existing legislation was not drafted to cope with an emergency situation and was not developed to operate under the conditions that will inevitably prevail in the aftermath of a severe seismic event. For example the Resource Management Act (RMA) places heavy emphasis on a consultative process, whereas the problem of meeting the reconstruction requirements of a devastated city within a reasonable period will preclude such consultative procedures (Feast 2004). In spite of current revisions to both the Building Act and RMA, evidence from flooding events in the Bay of Plenty 2005, suggest that little has changed over the intervening period and the same issues apply to relatively minor disasters as well (AELG 2005).

Table 1 gives a situation report of the housing situation 300 days after the Bay of Plenty storm in New Zealand. Only 35 households were permanently re-housed out of a total 300 compulsory evacuations. By the same period, 9 households were still occupying temporary accommodation. Middleton (2008) suggests that this situation could be the result of a poor processing of consents for reconstruction work.

Apparently there is clear gap between the process of identifying homes that are suitable or unsuitable for occupation and helping households to recover from a disaster so that they get back to their normal life. A number of reasons could have caused this situation to happen. One may be the lack of resources to carry out stipulated safety investigations, or the problems connected with damage assessments and compensations.

Table 1. Temporary Accommodation Requirements (Bay of Plenty storm, 2005)
Source: Middleton (2008)

Period in temporary accommodation	Number of households permanently re-housed	Number of households in temporary accommodation
Up to 60 days	0	293
60 – 150 days	71	222
150 – 200 days	140	82
200 – 300 days	38	44
Over 300 days	35	9

Details not available after 16th March 2006 (303 days after the event)

Processing of building consents at the early stages of reconstruction and recovery are a potential bottleneck (Anon 2004). Access to normal resource levels is unlikely and inadvertently there will be shortages of qualified persons and material resources to handle impact assessments and consent processing. It is suggested within this report that a more flexible approach to the standard consent process might be necessary to expedite the process and help cope with the high volume of consent applications after a major disaster. Although MCDEM, (2005) proposes a management structure that could obtain fast-track building consents at the immediate post-impact, such schemes only last as long as a declared state of emergency is in force. This issue is likely to remain an onerous challenge.

Under the Building Act, there is a special waiver to allow alterations to take place without necessarily complying with the relevant provisions of the Building Code. The Act provides for such an application to be granted if the BCA is satisfied that:

- If the building were to comply with the relevant provisions of the Building Code the alteration would not take place.
- The alterations will result in improvements to the means of escape from fire or access and facilities for people with disabilities.
- The improvements outweigh any detriment likely to arise as a result of non-compliance with the Building Code.

BCAs are expected to prepare policies and guidelines on how this discretionary power can be exercised (DBH 2005). There is anecdotal evidence that this may not have been done across many councils.

In probably the same vein, BCAs are to prepare modalities for collaboration with other councils and disaster agencies for resource sharing and deployments to relieve the likely demands for external services when consent applications increase. More so after disasters when house owners are eager to re-occupy their buildings.

Another dimension to consent processing is with the effect that the process will have on the rights to compensation. The Building Act requires that Territorial Authorities must refuse to grant building consents on land subjected to natural hazards unless they can be protected from the hazard, and where waivers are granted, it requires that notices be placed on the land to indicate the risk of natural hazards they are exposed to. If this provision is strictly implemented, then house owners may not qualify for insurance claims where there is an identified large risk to their facilities. In the same vein, complications may arise from ongoing revisions to New Zealand hazardscape. This would mean that previously risk-free buildings may become risk-prone, hence notices will be placed on them that may prevent them from being compensated in future disasters.

The Implications for Post-Disaster Reconstruction

Having highlighted some of the issues that may be connected to the implementation of the Building Act; it can be summarised that legislations and regulatory provisions have the following implications on post-disaster reconstruction:

- Loss of vital momentum of action as a result of delays caused by poor planning and implementation; restrictive legislation and regulatory provisions; and lack of government commitment to reconstruction programmes (Aysan and Davis 1993).

- Loss of commitment to the reconstruction process because disaster practitioners are unable to apply pragmatic solutions to real-time reconstruction problems, due either to inflexible legislation or fear of being held liable for decisions taken.

- Difficulties in achieving reconstruction deliverables and inability to: accelerate the process of reinstatements (Ye 2004); introduce measures for risk and vulnerability reduction; and aid planning for sustainable developments, Jigyasu (2004), Shaw, Shiwaka, Kobayashi & Kobayashi (2004).

- Impairment of overall community recovery and quality of life. Of essence, reconstruction should become a tool for empowerment till a level of functioning is reached where communities are self sustaining and require no external interventions, Ofori (2004), Sullivan (2003), and also a therapeutic process for overall community recovery (Aysan and Davis 1993).

The study on which this paper is based therefore seeks best practice approaches that will facilitate reconstruction programmes within an enabling legislative and regulatory framework in New Zealand. Such a legislative framework should prepare disaster agencies to meet recovery objectives whilst not compromising the need to build back safer environments.

Research methods

The primary source of data for this research was an on-line questionnaire (n = 200) administered to building control officers and other disaster practitioners in New Zealand. The invitation for participation was made through 85 local councils including web links to the on-line survey. The questions were largely in the form of ordinal and Likert scales, with respondents required to rate some statements about the Building Act, in line with their opinions on how the Act will affect the implementation of reconstruction works after disasters.

Research hypothesis:

Some of the provisions of the Building Act will constitute significant impediments to the realisation of large-scale reconstruction programmes after a natural catastrophe in New Zealand.

The research hypothesis was arrived at based on the premise that the provisions for consent processing within the Building Act will be a source of frustration for disaster-affected building owners as it will slow down the reconstruction work, particularly when there is a wide scale devastation of the built environment in New Zealand.

Research Objectives:

- To determine the effect that existing provisions within the Building Act will have on the reconstruction of the built environment after major natural disaster events in New Zealand.
- To determine how consent/compliance processes can be simplified and made more responsive to potential higher demands during the reconstruction period, thus reducing the frustrations experienced under the current process.
- To determine if there are memoranda of understanding (MoUs) between different councils for resource sharing during a major natural disaster.

The objective was therefore to determine what the effects of building consent processing will have on reconstruction works and how, if possible, the process can be simplified in a way that it facilitates reconstruction work. A final objective was to determine if the local councils had thought through the establishment of memoranda of understanding amongst themselves as a way of sharing and deploying resources to assist their reconstruction needs.

Research results

The responses

Respondents were required to rate their understanding of the Building Act and to indicate how often they make reference to the Act in the course of their work. This was done for the purpose of reliability; hence only respondents who were familiar with the Act were used for the analyses.

A total of 80 responses were received altogether. Of this number 54 (67.5 percent) of the respondents have an average to very high understanding of the provisions of the Building Ac t; while 41 (50.5 percent) very often make reference to the Building Act in the course of their daily work activities.

Generally the respondents (above 65 percent) have working experiences, in their various local councils, of more than 15 years. This represents a good profile of the respondents and serves to demonstrate how reliable the responses received from this category of people could be.

The building consent process

With regards to the building consent process and the potential effects this would have on post disaster reconstruction, 77 percent of the total responses (65) agree that the process may become cumbersome during a large scale reconstruction programme; and 74 percent agree that councils will struggle to meet the requirements for consent processing after a major disaster. These reflect the reality that there will be a spike of consent applications for reconstruction that will overwhelm the local councils' capacity to cater for.

Obviously this is in consonance with current fears of a slowing down of the consent process by the Building Acts procedural requirements. However the process in itself may not be cause of the problem but rather the resources available to facilitate the process. Most of the respondents have indicated that the capability of the building consent authorities, coupled with designers and engineers (independent qualified persons, IQPs) for on-the-spot assessments of built facilities, is in doubt. During normal times, councils struggle with the consent process because of inadequate resources and would be challenged further by a larger volume of requests if the current resource levels are maintained during 'abnormal times'.

Councils will need to make prior arrangements for the deployment of resources from neighbouring councils and from outside the country to meet resource demands. On-the-spot assessments of affected built facilities would facilitate decisions on whether: facilities are safe enough to be re-occupied; will require minor repairs before occupation; or that the repairs would be extensive. Such timely assessments are a necessity. This will depend largely on prior arrangements and preparations for the high demands. However, only 39 percent believe that the local councils have made adequate arrangements for such on-the-spot assessments.

On whether section 71-74 notices in the Building Act will prevent disaster-affected built facilities from receiving compensation for damages, there is little agreement on this statement. 27 percent opine that this provision will prevent compensation; 21 percent disagree; while the remaining 52 percent are unsure of the effects that the provision will have on insurance claims.

Simplifying consent processing

Generally, 55 percent of respondents hold the view that the strict application of the Building Act provisions will result in inefficient reconstruction operations. However very few (25 percent) are of the opinion that the procedural arrangements can be shortened in anyway for post disaster reconstruction.

The view commonly held is that the benefits outweigh the disbenefits. Therefore New Zealand communities are more likely to suffer from a relaxation of the provisions for thoroughness in the processing of consents. 61 percent are of the opinion that the building consent and compliance process must be followed through irrespective of the scale of the disaster.

There appears to be only two circumstances by which the consent process can be bypassed. One is if an application is made by the facility owner under Urgency or where an allowance is made by a council to allow for construction work to take place without complying with the relevant provisions of the building code.

Memoranda of understanding for resource sharing

Considering the importance of resource availability in the consent process, respondents were requested to indicate if there were memoranda of understanding, between councils in New Zealand, for resource sharing in the event of a major disaster. 45 percent confirm the existence of loosely written memoranda. These memoranda are considered very generic documents that may not commit neighbouring councils to their implementation.16 percent of respondents are not aware of its existence in their councils; and 39 percent are unsure.

An average 50 percent of the respondents are not aware of the contents of such memoranda. However of the those that indicate that memoranda of understanding exist; indicated that such memoranda contain the following: procedural arrangements (responsibilities, liabilities etc) between councils, information dissemination and sharing, personnel sharing and deployment modalities, arrangements for financial contributions and financing, operational logistics and assistance, and the participation of external aids/agencies.

Discussion and conclusions

Key Lessons Learned

- Building consent processing in accordance with the Building Act at post disaster may be cumbersome, and may slow down reinstatements and reconstruction programmes.
- The benefits for controlling the reconstruction of the built environment outweigh those of a deregulated reconstruction process.
- Reconstruction can be facilitated through prior arrangements for resource sharing and deployment to hasten structural and safety assessments.
- Local councils need to prepare memoranda of understanding that detail the modalities for exchange of resources, and of receiving external aid and assistance.

Recovery is an integral part of the comprehensive emergency management process (Sullivan 2003). Recovery activities begin immediately after the initial response to a disaster situation and would normally extend until the community's capacity for self-help has been restored. In other words, the end-state is when the assisted community reaches a level of functioning where it is able to sustain itself in the absence of further external intervention (Sullivan 2003).

The effectiveness of every recovery process will depend on how much planning has been carried out and what contingencies are provided for in preparing for the disaster. Recovery objectives will include reinstatements (reconstruction of the built environment) to improved states that will be guided by regulations such as the Building Act. From a recovery perspective the Act would prevent among others, a reduction of the previous vulnerabilities by disallowing construction to pre-disaster situations. The consent and compliance process may be cumbersome but is largely unavoidable considering the benefits they are from.

The current study has established that Local councils in New Zealand would have to facilitate the reconstruction process by making resources available for structural and safety assessments. This can be achieved through prior memoranda of understanding between councils that gives details on the modalities for exchange of resources and of receiving external aid and assistance. If this can be arranged prior to disasters, assessment activities at the immediate post-impact will be both efficient and effective.

The study believes that provisions of the Building Act can be implemented without a compromise to the needs of the community for quick recovery. The challenge is to consider all logistic issues before the actual disaster.

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Author's Biography

James Olabonde R. is a Doctoral research student in the Department of Civil and Natural Resources Engineering, University of Canterbury. His background is in Construction Management and he has had various construction related experiences including an associate role in a quantity-surveying consultancy practice in Nigeria. James is a professional member of the Nigerian Institute of Building and the Institute of Management Consultants, Nigeria. James research is within the ambit of Objective 3 – Resilient Organisations research programme. He is evaluating the provisions of the Building, Resource Management and the Civil Defence and Emergency Management Acts to determine if they are in tandem with the likely demands for reconstructing physical facilities in the event of a major natural disaster in New Zealand. His evaluative study should proffer suggestions towards a policy framework for post-disaster reconstruction in New Zealand.

Suzanne Wilkinson graduated with her BEng (Hons) and PhD from the Oxford Brookes University. Her PhD was in the area of construction management. She then moved to New Zealand and worked at Unitec before joining The University of Auckland in 1996. She is now an Associate Professor in the Civil and Environmental Engineering Department, University of Auckland. Her research interests are in project management, construction management and construction law. She is currently involved in two large Government funded research projects (over $5 million). The first project is Resilient Organizations, where she is leading the contract management component of the project (see www.resorgs.org.nz for all research publications and project details). This project examines the management problems associated with post-disaster reconstruction. The second project is "Retrofit Solutions" where she is also leading the financial analysis section of the project which is examining retrofitting New Zealand buildings to protect them against seismic damage (see www.retrofitsolutions.org.nz for all research publications.

Dean Myburgh holds a Doctorate in Industrial Relations from RAU (now University of Johannesburg) and an MBA from the University of Stellenbosch. He is a Director of two consultancies, 80-20 Options NZ Limited and Emergency Planning Limited and has a keen interest in enhancing organisations' resilience through organisation development interventions. Dean's consulting focus is the facilitation of strategic and operational decision-making related to organisational change management, process improvement, and risk and emergency management.
A Fellow of the NZ Institute of Management, Dean has held senior leadership roles in public and private sector organisations, both within New Zealand and abroad. He was a member of the Committee that prepared the NZ Handbook *Risk Management for Local Government* (SNZ HB 4360:2000) for the Standards NZ Council and has authored '*The Risk Management Toolbox – A Guide to Facilitating Risk Thinking and Problem-solving in Organisations using the Risk Management Diagnostic Survey (RMDS)'*. As a member of the Resilient Organisations Steering Group and Industry Researcher, Dean has also authored publications related to the Resilient Organisations research programme (re*fer www.resorgs.org.nz).*

Kelvin Zuo is a lecturer in the Civil and Environmental Engineering Department, University of Auckland. He received his Bachelor Degree (Hons) in Civil Engineering (2003) with a management focus from Sichuan University and a Master (Hons) of Engineering Studies (2005) from University of Auckland. Since then, he has engaged in research for his PhD under the FRST funded project – “Resilient Organisations”. He is particularly interested in the contractual aspect of civil engineering management, especially the procurement systems used in different construction projects. It first stemed from his fieldwork (2002) in Three Gorge Dam in China and further developed in his master thesis, a tendering systems comparison between Chinese and New Zealand models. His current PhD topic concerns the procurement and contractual systems for disaster reconstruction.