



Weather-tight buildings

What lessons can be drawn?

Paper for NZAE conference

Palmerston North, June 2012

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The assistance of the Law Foundation is gratefully acknowledged.

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1. Background

New Zealand's leaky homes crisis is widely regarded as an extremely expensive regulatory failure. PriceWaterhouseCoopers estimated the financial liability resulting from the problems to be \$11.3 billion,¹ and previous reviews have concluded that it represents a failure of the underlying, performance-based legislation. In many ways, it is seen as a canonical example of how not to implement performance-based regulation. This paper builds on Layton's issues paper to question those conclusions and propose an alternative interpretation of the problem, and the lessons it provides for future policy work.² In this section we briefly review the background to the leaky homes crisis and Layton's analysis of the crisis.

1.1 Causes of the crisis

As a brief background, the leaky homes crisis is often attributed to the 1991 switch from prescriptive building codes to performance-based regulation that allowed innovation in building techniques. While the change in regulation permitted more rapid innovation, there were also several other factors that contributed to the severity of the leaky homes crisis. These factors included a lack of detailed evidence based understanding about the vulnerability of building systems to moisture damage, low awareness of overseas experience from building innovation, loss of institutional memory about past cladding failures, and a slow response to evidence that new designs were not meeting regulatory performance objectives.

The aim of the legislation was to encourage productivity gains in the sector, which were being stifled by the limiting nature of the prescriptive building codes. One of the innovations was to construct houses in a Mediterranean style with untreated framing timber. The choices of Mediterranean style design (including mono-lithic cladding) and untreated framing timber were made at separate times as independent decisions for different reasons. Rather than a single clear-cut change, building design and practice drifted through a series of gradual changes that progressively eliminated the lines of defence that made conventional houses resistant to moisture damage and delivered the standard of weathertightness that stakeholders had come to expect. These decisions seem to have been based on expectations rather than evidence of their potential effects on weathertightness.

In hindsight, this method of construction was not suited to New Zealand's wet climate³. Many of those homes were later rendered structurally unsound as leaks in the cladding allowed the timber frames to become wet enough to rot. However at the time the potential for this type of catastrophic failure and more importantly the combination of the factors that could lead to this failure were not "imagined" by stakeholders. Even those who pointed out the risks of the design changes at the time they were being considered did not fully identify the potential for building component failure let the potential contribution of that component failure to building failure.

¹ In 2008 New Zealand dollars.

² Brent Layton, *Regulating the Building Industry – A Case of Regulatory Failure*, Forthcoming, August 2011.

³ The particular confluence of features is generally considered to be the monolithic cladding, untreated timber, and lack of a drainage cavity behind the cladding.

The problems are estimated to affect between 22,000 and 89,000 homes,⁴ which leads some commentators to conclude that the problem is a result of a systemic failure of regulatory oversight.⁵ The size of the problem is due to both the failure to anticipate the consequences of the approved changes the delay in reacting to indicators that the approved changes were not meeting the performance objectives of the regulation. Consequently, numerous authors have turned to the question of what regulatory oversight failure allowed the problems to occur and how this failure might be avoided in future.⁶ This is a two part question:

1.2 Response to the crisis

Liability for the damage lay jointly and severally with the builders, architects, and building consent authorities. However, building consent authorities ended up bearing most of the cost because the builders and architects traded as limited liability companies, many of which had disappeared in the intervening decade. To mitigate the cost to the building consent authorities, most of which were territorial authorities, the government stepped in and implemented a scheme by which the central government subsidised repair work in return for the homeowner giving up their legal claim against the Crown or territorial authority. The development of the approach for sharing the cost of leaky home repairs has been slow and uncertain for all stakeholders. The extent to which the approach has been used particularly with respect to the nature, cost and efficacy repairs is not visible.

The government also revised the Building Act in 2004 to shift away from purely performance-based regulation towards a more prescriptive standard, which should reduce the risk of such problems occurring again in future.

1.3 Themes from the issues paper

Layton's paper has four themes

- Inconclusive evidence of a net cost;
- Little opportunity to improve regulatory impact guidelines;
- Creation of moral hazard; and
- Role of territorial local authorities (TLA's).

1.3.1 Inconclusive evidence of a net cost

First, Layton conducts a back-of-the-envelope cost-benefit analysis of the weathertight homes problem, and concludes that the evidence of a net cost is inconclusive. He adjusts the liability estimates of PricewaterhouseCoopers (PWC) to set them in a cost-benefit framework and finds that the net cost was approximately \$1.4 billion in net present value in 1991, when the new regulations were implemented. To offset that cost, a productivity gain of only 1.8% per annum would have been required to be generated by the shift to performance-based regulation in order for it to be beneficial to New Zealand. It may be that the performance-based regulation was an improvement over the status quo, despite

⁴ PricewaterhouseCoopers, *Weathertightness - Estimating the Cost* (Prepared for the Department of Building and Housing, 2009).

⁵ P. Mumford, 'Enhancing Performance-Based Regulation: Lessons from New Zealand's Building Control System' (2010).

⁶ For instance, Peter J May, 'Performance-Based Regulation and Regulatory Regimes: The Saga of Leaky Buildings', *Law & Policy* 25, no. 4 (October 1, 2003): 381–401; P. Mumford, 'Best Practice Regulation: Setting Targets and Detecting Vulnerabilities', *Policy Quarterly* 7, no. 3 (August 2011): 36.

the weathertightness problems that ensued. That does not preclude there being a better alternative, but it does suggest that references to a 'crisis' require some explanation.

1.3.2 Regulation as an experiment

Secondly, he discusses the idea of regulation as an experiment and concludes that there is little that could be done to further improve New Zealand's regulatory impact analysis guidelines. Mumford has written extensively on the subject of experimentation in regulatory design, with weathertight homes as a case study.⁷

1.3.3 Creation of moral hazard

Thirdly, he surveys the recent spate of incidents in which the Government has taken responsibility for covering the losses of individuals, and notes the moral hazard created. He points out that there have been "several recent instances where the government has decided taxpayers should bear costs that would otherwise fall upon more directly affected ...parties because the sums involved seem 'too large'..."⁸

1.3.4 Role of territorial authorities

Finally, he gives an overview of the role of territorial authorities in the building consent process. That suggests there may be a lack of expertise and capacity at the TLAs relative to the potential liability that they are assuming by consenting a design.

The remainder of this paper expands upon the implications of Layton's findings and proposes some lessons that may be drawn from the experience.

⁷ Mumford, 'Best Practice Regulation: Setting Targets and Detecting Vulnerabilities'; Mumford, 'Enhancing Performance-Based Regulation'.

⁸ Layton, *Regulating the Building Industry – A Case of Regulatory Failure*, 317.

2. Identifying the regulatory failure

The central question we address in this paper is what lessons can be drawn from the weathertight building problems. Our focus is not on the failure of particular building features, but on design and implementation of performance-based legislation. Could changes to the regulatory scheme have improved the outcome for society?

2.1 Reconciling the facts

The first task is to identify the problems with regulation that the building failures highlight. There are three pertinent pieces of information that seem contradictory: First, Layton's work suggests that there may not have been a net cost from the change in legislation, relative to the status quo. Secondly, most stakeholders were reluctant to accept initial evidence of potential for building performance failure despite overseas experience and the lack of physical testing of the performance of innovations. Thirdly, the facts show that the government re-allocated the cost of weathertightness failures once they were accepted however it took several attempts for the response to be finalised. Reconciling the facts is crucial to understanding the nature of the regulatory problem:

- In what ways and how quickly can we expect regulators and other stakeholders to learn from and react to the success or failure of innovation.
- What are efficient and effective approaches to reallocating the cost of failed innovation that was not "imagined" by stakeholders.

If we assume that the purpose of government action is to maximise social welfare then we might find Layton's calculations inconsistent with the interventions that occurred. However, a lesson of public choice theory is that politicians have preferences that are distinct from social preferences. Politicians can be influenced by vocal minorities with strong interests when the majority has weak preferences. When a group suffers a potentially large loss, relative to their income, they can form just such a vocal minority and persuade governments to socialise their losses.

Viewing the government's intervention in that light allows us to reconcile their actions with the facts. The government intervened to avoid the political cost of being publicly lambasted by a highly motivated and well-defined group of disgruntled voters. That they intervened then tells us little about the impact on net welfare of the regulations, beyond the fact that it did not create a similarly vocal group of beneficiaries.

2.2 Consequences of intervention

As Layton notes, the government's intervention "amounts to a decision to relieve the local authorities of some of [their] liabilities... and to place some liability on taxpayers instead."⁹ The parties who benefit are the owners of leaky homes and the local authorities who have reduced liability for their actions. The people bearing the cost are the remaining taxpayers.

⁹ Ibid.

The government's reallocation of the liability has two consequences. First, the parties partly responsible for the problems with weathertightness no longer have to fully bear the consequences of their oversights. Given that the government has recently intervened in a similar manner in a number of cases, people may form the impression that the government will be likely to intervene again in future. If people believe that the government will insulate them against loss, so long as the cost of their actions is great enough, then that may cause them to take risks that they otherwise would not. From a social perspective, it will encourage too much risky behaviour because the risk-takers will believe themselves less likely to bear the cost of their actions. Economists refer to this phenomenon as moral hazard.

Secondly, the people paying the cost of errors in the construction and inspection of buildings are not the people who made the mistakes; they are taxpayers who often had no part in the process. That may be regarded as unfair, although there could be a social preference for having some risk borne by all of society.

The government's second intervention was the modification of the Building Act to be slightly more prescriptive about building techniques. As a rule, legislation should be modified either when society's preferences change, or when a better regime is identified. In this case it may be that there was a change in societal risk preferences for less risky regime with less scope for innovation. However, the legislative change may also have been intended to minimise the risk of losses, rather than to maximise some net public benefit criterion. If this was the case then the change in the regulatory regime may actually decrease social welfare. That would particularly be the case if some participants in the building industry had made significant investments based on some element of the previous regime that has now been eliminated. The costs associated with stranded assets and the loss of certainty in investment decisions reduces dynamic efficiency by discouraging investment in innovation.

In summary, the government's ad hoc intervention to socialise losses has certainly introduced inefficiency into the market and encouraged participants to be less wary of risk, although more prescriptive legislation will reduce the leeway for such behaviour. It may also be inequitable in its transfers of wealth from taxpayers to those who incurred liability. The changes to the Building Act are far more ambiguous in their impact. They may reduce the riskiness of buildings without notably reducing the level of innovation, as is their intention. On the other hand, they may also reduce innovation and come at the cost of investment in the sector.

2.3 The problem of durability

Thus far we have claimed that the evidence that welfare decreased because of the introduction of performance-based building regulation is inconclusive. We have further claimed that the government's intervention, while it may have been politically expedient, is not likely to increase welfare in the long run. This should not be read as approval of the initial Building Act 1991's approach; it would certainly be preferable to obtain the benefits of innovation without encountering the problems of leaky buildings.

As Brian Easton has pointed out, the primary failure in the initial regulations is that there was no strategy in place for the regulator to deal with large, concentrated losses.¹⁰ Such losses are always a possibility when one allows a broad range of innovation and there should be a mechanism in place to either avoid them or deal with them if they should

¹⁰ Brian Easton, 'Regulatory Lessons from the Leaky Home Experience', *Policy Quarter* 6, no. 2 (May 2010), <http://www.eastonbh.ac.nz/?p=1099>.

arise. The lack of such a mechanism in the legislation led directly to the ad hoc socialisation of losses and modification of the Building Act. The lesson of the Building Act 1991 is that even legislation that may have a net public benefit cannot endure if it does not either avoid or deal with the risk of large, concentrated losses.

In the following chapters we ask, what mechanisms could be employed to ensure the durability of legislation, and how might they have avoided the consequences we observe in the case of leaky homes?

2.4 Specific building industry issues

When considering the problem of constructing durable legislation in the context of the building industry, it is helpful to review the problems faced by the regulator. There are two issues in particular that Mumford and Layton have highlighted, which were not adequately addressed by the Building Act 1991:

- builders had inadequate knowledge of the uncertainty that they faced when building with new materials and techniques; and
- consumers had little information about the possible risks of the techniques used to construct their homes.

The first problem is one of uncertainty, as opposed to risk. The likely problems with the techniques were not fully known and the probability of failure was not available to builders. (In addition the problems would have taken some time to appear and their causes were complex. Therefore the appearance of the problem itself to builders would probably have suggested a need to replace a faulty component rather than a change to the system.) The second problem is one of asymmetric information: consumers were not aware that using a new building technique entailed greater risks of weathertightness failure. In general, they were under the impression that the building consent authority was certifying that the building was weathertight and did not take the risks of failure into account. Layton suggests that this may be related to the slightly ambiguous role of local authorities and their lack of expertise.¹¹

In concert, these two factors suggest that market participants had inadequate information to manage the risks and uncertainty that they faced. Consequently, there may have been overinvestment in new housing designs, and under-consumption of warranties, guarantees, sureties and expert advice to mitigate the information problems. That does not, of itself, suggest that the government should intervene or that there has been a market failure. However, the possibility that the lack of information could lead to large losses and consequent failure of the legislation should have been considered during the design of the regulations.

¹¹ Layton, *Regulating the Building Industry – A Case of Regulatory Failure*, 336.

3. Designing durable regulations

This section outlines three approaches that regulators could use to design “durable” regulation. We use the term “durable regulation” to describe regulation that includes a framework for addressing the risk of large losses concentrated among groups of individuals large enough to influence politicians.

Performance failures often trigger calls for the introduction or revision of regulation to translate “lessons learned” from the failure into new regulations that in hindsight would have prevented the failure or at least dispersed the cost. Sometimes the failure also triggers demands for taxpayer-funded compensation of those affected by the crisis – “socialisation of losses.”

The Government response to these demands varies according to a number of factors¹² and is often difficult to predict. However a review and change of existing regulation is often part of the response. (Demands for socialisation of losses are particularly hard for the Government to resist when the performance failure is attributed to flaws or gaps in regulations.) Crisis driven reviews of regulation create two practical challenges for regulators in designing “durable” regulations:

- Ad hoc reviews tend to be narrowly focused and the responses undermine and sometimes supplant the objective of the regulation; and
- Individuals are encouraged to develop a mind-set that individual losses from risky behaviour will be socialised – moral hazard.

3.1 Regulation affects uncertainty and risk

Reduction of uncertainty and reallocation of risk are direct consequences (and sometimes core objectives) of regulation. Regulations define processes and standards or roles and responsibilities in the exchange of goods and services that narrow the range of possibilities of what can be exchanged, how it can be exchanged and what buyers, sellers and potentially other stakeholders can expect from that exchange.

Prescriptive regulation reduces uncertainty and allocates risk by requiring compliance with a set of standards and process that are “known” to produce a specified range of performance outcomes. Providers of goods and services are responsible for complying with the processes and standards. End users can select a product or service with reasonable certainty that it will meet a pre-defined standard. The regulator is effectively providing a recipe to reduce uncertainty and reduce the risk of poor performance.

Performance -based regulation establishes the roles, responsibilities and reasonable expectations for providers, end-user and other stakeholders but does not specify how providers should construct their goods and services. The regulator is reducing uncertainty and risk by specifying a common set of expectations for outputs but leaving the participants to decide how they will meet the performance expectations.

Prescriptive regulation is exposed to failure if the assumptions on which the standard processes are based change or are found to be incomplete – for example the Christchurch

¹² The response seems to be driven by perceptions of fairness, significance of the loss to the affected individuals, visibility of the compensation when spread over taxpayers, etc.

earthquake has highlighted the risk posed by poor understanding of geotechnical conditions to the performance of houses that comply with prescriptive building codes. Performance -based regulation is exposed to failure if the testing and verification of the performance of alternative solutions cannot keep-up with the pace of innovation either because of the range of innovation or the time required for performance problems to be recognised. Irrespective of the type of regulation, the decision to regulate usually includes a reallocation of risk of product or service performance failure. However these risks are not always visible at the time the regulation is implemented. Therefore the regulator needs to build capacity into the regulation to deal with generic types of risk.

3.2 Difficulty for regulators

It is difficult for regulators to design a framework for dealing with unanticipated downside risks that will be supported by the Government in response to a "crisis" (instead of an ad hoc change to the regulations and socialisation of losses.) The approach needs to be accepted as fair and reasonable both at the time the regulation is implemented, and when addressing future risks that were not specifically envisaged when the regulation was implemented.

As a starting point for discussion we consider three alternative frameworks for addressing large concentrated risks for performance-based regulation:

- Qualified approval for products or services using innovation;
- Regulation as a managed experiment; and
- Social insurance.

The approaches can be arranged on a continuum based on the extent to which risk is addressed through design of regulation (in anticipation of an event) versus provision for compensation.

A drawback of both the qualified approval and managed experiment approaches is that they rely on prescriptive regulation to manage risks in performance-based regulation. This increases the cost of innovation and slows the adoption rate of innovation.

Social insurance allows for more risk taking within the bounds of durable regulation, but may also encourage such risks. The following sections briefly describe each of these approaches and the circumstances in which they are likely to be most effective.

3.3 Qualified approval as a signal of risk

The most light-handed approach to the problem is to attempt to remedy the information problems that lead to under-insurance against losses (see Section 2.4), and then hope that the market deals with the possibility of losses. Of the two informational problems identified in the building industry at the time, the most straightforward to address is asymmetric information, which has well-known causes, consequences, and solutions.

Layton identifies the greater knowledge of the builders, relative to the purchasers of a home, as a source of asymmetry. When purchasers cannot assess the integrity of the home prior to purchase then they are unlikely to pay for the home as if it were of great integrity. That leads to developers cutting corners because they know that they will not be rewarded for their efforts with a higher sale price. This process is known as adverse selection and leads to a disproportionately high number of low quality homes on the market.

The standard solution to this problem is for the seller of the home to provide warranties or guarantees against failure, thus signalling the high quality of the home.¹³ That mechanism is implemented in the case of building by the assignment of liability for failure to the parties with the best knowledge of the building's quality: the builder, architect and building inspector. However, in the case of leaky homes, the problem took so long to surface that the liable parties had largely dissolved by the time liability was established. That left only the building consent authorities to defend proceedings and they were primarily composed of territorial authorities. The threat to TLA's solvency caused the central government to step in and create the moral hazard problem.

To supplement the market mechanism the government could provide a signal of its own: a qualified approval rating would be used to signal the regulators assessment of the extent to which a building meets the performance standards described in the regulation. The assessment provides the purchaser with a clear indication of the expected reliability and lifespan of the product and reduces the potential for dissatisfied purchasers to later claim performance standards "promised" in the regulation were not delivered.

This assessment could consider a number of factors such as the construction techniques, materials used as well as the availability of evidence on the reliability and lifespan of the product. To make the rating easier to interpret the performance standards could be ordered into a hierarchy. The foundation of the hierarchy would be minimum requirements for safety and reliability for a defined period. Higher levels in the hierarchy could show ratings of expected lifespan based on evidence of performance either in New Zealand or overseas.

This type of approach is best suited to relatively simple products with a limited number of performance measures and a short life span (compared to the pace of innovation). For more complex products the rating approach becomes cumbersome to apply and difficult for purchasers to translate into a useable comparison of the risk of different product offerings.

3.4 Explicit regulatory experiments

A precautionary approach to dealing with the uncertainty of losses would be to limit exposure to until the risks are known. Mumford recommends viewing regulation as an experiment to encourage better recognition of the need for continued monitoring and consequential adjustments to ensure that regimes continue to be effective and efficient.¹⁴ For example, the regulator could allow one thousand houses to be consented in particular new design. The outcome for those houses could be regularly reviewed until the regulator was confident that they had a good idea of the risks involved in building that type of house. They could then decide on how to proceed, given society's risk preferences.

The word "experiment" carries connotations of "measurement" and "opportunity to learn." These connotations suggest a managed approach to both regulatory risk and evidence-based evolution of the regulation in response to changing circumstances. Applying the analogy of an "experiment" to regulation raises several practical issues for regulators establishing the experiment including the following:

- How to define a "control" and "trial" for the experiment ;
- How to set and manage the target level of participation in the trial;

¹³ G. Akerlof, 'The Market for "Lemons": Quality Uncertainty and the Market Mechanism', *The Quarterly Journal of Economics* (1970): 488–500.

¹⁴ Mumford, 'Enhancing Performance-Based Regulation', 153.

- How will participants choose to join the trial or remain in the control group; and,
- How long will the experiment need to run to allow measurement of results.

3.4.1 Establishing feedback and learning loops

A key question for regulators is how they can design and manage a more effective and efficient experiment to test the effect of a change in regulation.. The challenges for regulators to apply an “experimental” approach to changing regulation for complex long-life products because of the complexity of difficulty in defining and controlling the experiment, and the time required to complete the experiment.

3.4.2 Defining a control and a trial

Ideally, defining a control for the experiment requires being able to operate the old and new regulatory regimes side by side for a defined period. Operating regulations as an experiment may require the scope, size, and speed of the trial to be defined as part of the regulation. This implies that the regulator needs to have a prior view about the type of changes that could occur because of the regulation, and which of these changes are risky enough to require trialling. The trials need to be set up to give reliable and usable measures of how well the innovation is meeting the performance objectives of the regulation.

In practice the distinction between a control and a trial may need to be blurred to accommodate the potential combination of multiple innovations. There may be multiple trials running at any given time and each trial may contain cohorts of innovation that have been underway for different periods of time.

3.4.3 Set and manage target level for participation

The purpose of the trial is to limit the adoption of a particular change to a defined group until the efficacy of the change can be tested. Limiting the adoption rate caps the downside risk of failure but also prevents the evolution of the innovation over time. Data gathered from the trial allows uncertainty about the innovation to be translated into a measure of risk of failure.

3.4.4 Choosing to be in the “control” or the “trial”

Participants’ choice of whether to join the control or the trial group will depend on their perception of the benefits of each and their appetite for risk/uncertainty. The issue for the regulator is how to ensure that participants recognise the asymmetry of information between the “control” and the “trial” and make an informed decision about the level of uncertainty or risk they are accepting.

The regulator will need to determine in advance what if any losses incurred by the trial group will be socialised and over what group these risks will be socialised.

3.4.5 Duration of the experiment

The duration of the experiment needs to balance the trade-off between the time required to gain confidence that the performance of the innovation is understood and the cost of deferring the realisation of benefits from the innovation. The required duration of the experiment limits the applicability of this approach to products where the cycle of innovation is considerably shorter than the time required for the innovation to fail.

3.5 Insurance against risk

Both the signalling and experimentation approaches seek to control, or manage, the level of risk such that no socialisation of losses is required. The drawback of these approaches is that they correspondingly limit the gains from innovation, while also failing to eliminate the risk of socialisation. An alternative approach is to acknowledge that the government will sometimes be forced to act as a large, mutual insurance co-operative. That induces moral hazard, as previously described, and increased the incidence of risky behaviour. A possible response is to formalise the system of insurance and induce or compel people to insure against the events that might induce the government to step in.

3.5.1 Inducing private insurance

The least invasive such measure would be to induce people to take out private insurance against the possible losses. If people are paying the cost of the risk that they take on then moral hazard problems are avoided because people take the full cost of risk into account. However, it is doubtful whether a large enough proportion of the population could be induced to take out insurance to avoid the risk of socialisation. Layton points particularly to the events that followed the Christchurch earthquakes as a situation where the risk was fully insurable and yet the government chose to step in to aid those who did not purchase insurance of their own.¹⁵

That view is also taken by the Department of Building and Housing in their advice to Cabinet.¹⁶ They claim that private insurers in New Zealand are uninterested in providing such cover because:

- there is a lack of information about the level of risk
- there is a long period of cover required
- there is a lack of regulatory certainty, with regular changes to the legislation governing the sector.

Because of these factors, private insurers are reluctant to enter the market for providing comprehensive home warranty insurance. Part of their reluctance is also likely to be due to the adverse selection that would arise in the market. It is likely that the premiums would be high enough to deter people who are very confident of the quality of their home from purchasing the insurance. That leaves only the risky participants in the market and pushes up premiums further. Consequently, it becomes untenable for the insurance company to profitably provide insurance unless it can distinguish between high and low-risk participants. This is borne out by the products that do exist on the market, which have significant limitations and exclusions.¹⁷

3.5.2 Compelling private insurance

The next step in the continuum of compulsion would be to require people to take out such insurance, and compel insurance companies to provide it. This approach would overcome the adverse selection problem by preventing anyone from opting out of the market. However, without good information on the riskiness of market participants, there would remain moral hazard in the market: home buyers and builders may act in a riskier fashion than if they did not have insurance. These risks can be mitigated to some extent by the

¹⁵ Layton, *Regulating the Building Industry – A Case of Regulatory Failure*, 328.

¹⁶ Office of the Minister for Building and Construction, 'Building Act Review: Review of Joint and Several Liability' (Prepared for Cabinet Economic Growth and Infrastructure Committee, 2011), 7.

¹⁷ *Ibid.*, para. 43–46.

use of incentives in the insurance contract—co-payments in the event of a claim, for example—but not eliminated.

The costs associated with a functioning compulsory insurance market are largely related to the loss of efficiency that occurs due to compulsion. There are some people for whom it is not worthwhile to purchase insurance, and some people for whom it is not profitable to sell them insurance, yet all must obtain it. For each of those transactions there is a loss of social welfare, which is a cost that must be weighed against the costs of ad hoc socialisation. However, ad hoc socialisation also imposes many such costs since it is effectively insurance without the premium. That means it does not charge the people who incur the risk for the cost of providing the cover, which significantly increases the moral hazard of the implicit scheme.

There are also risks to the insurance market. If companies do not consider it profitable to enter the market at all then it may end up being extremely thin. There is also the risk of companies entering the market and under-pricing the cover to gain market share, in the belief that the government will socialise losses if the insurance company ends up being unable to cover them. This situation occurred with AMI Insurance following the Christchurch earthquakes and may have generated moral hazard in the insurance market itself.¹⁸

3.5.3 Social insurance

The final option is a social insurance scheme that involves the government establishing its own, formal scheme to insure against the risks of failure. That allows the legislation to internally cope with losses and ensures its durability in the face of realised risks. However, it also engenders significant moral hazard and may have negative effects on the existing market. The Cabinet paper points out that the effect on the market depends upon how the scheme is implemented:

- use of a compulsory levy on building consents would be likely to drive out existing schemes and would therefore meet with industry resistance. However, if the current schemes are not sufficient to compensate for the problems of the weathertight homes, then this may not be particularly costly from a social perspective
- a competing guarantee scheme (presumably with a requirement to have some cover) would likely result in adverse selection driving all of the high-risk customers to the government-run scheme. Given that the government would be implicitly covering these participants through ad hoc socialisation anyway, that may not be an additional cost relative to the status quo.

The advantage of social insurance over ad hoc socialisation is twofold: First, the people who create the risk pay for the consequences of it, which is more equitable. Secondly, the existence of a payment for taking on risk reduces the incidence of risky behaviour, which diminishes the moral hazard imposed on the government and, consequently, on the taxpayer.

¹⁸ Marta Steeman, 'Quake-hit AMI Insurance Bailout Could Cost \$1 Billion', *Fairfax NZ News*, April 7, 2011.

4. Application to weathertight building problem

In this section we consider how the approaches to designing durable regulation outlined in Section 3 could be applied to resolving the issues that led to the weather-tight building problem described in Section 2 in particular, and to innovation in house construction generally.

4.1 Features of residential housing construction

The market for newly constructed residential houses has several features that make it a high-risk area to regulate and prone to pressures to socialise losses.

4.1.1 Owners are likely to seek compensation

Owners are likely to seek compensation for performance failure in residential housing because, for most owners, the value of the asset is a large part of their wealth. They do not have the financial capacity to repair major premature failure of the building and expect houses to have a long lifespan. Those expectations are based on both their previous experience and on the quality assurance implied by compliance with local building regulations.

4.1.2 Suppliers have limited ability to pay

Suppliers tend to have limited ability to pay compensation because of the small size of many construction firms. Building and design firms tend to be small businesses with modest reserves and an average business life span that is relatively short. Furthermore, many may not be operating by the time homeowners begin claiming compensation. Construction defects can take a long time to emerge and may be aggravated by other factors such as poor maintenance and unrepaired damage, which lead to more complex legal actions.

4.1.3 Alternative risk-assessment is not readily available:

Alternative methods of assessing and re-allocating risk are not readily available to homeowners since information on the performance of different building methods is not widely available or easily accessible to lay people. In addition, private insurers are generally reluctant to provide comprehensive home warranty insurance in New Zealand.

4.2 Schemes for creating durable regulations

4.2.1 Qualified approval

Qualified approval attempts to reduce the risk of demands for socialisation of losses by providing the owner with a quality rating at the time of purchase. Development and implementation of a rating scale would be complicated and may not be technically feasible.

However this approach does not change either the owners' lack of ability to afford the cost of premature building failure or the lack of alternative source of risk protection. In the event of a widespread failure, homeowners may be able to convince politicians that either the rating scheme failed to assess risk correctly, or they did not understand the implications of the rating. Accordingly there is still likely to be strong demand for socialisation of losses under this approach.

4.2.2 Explicit regulatory experiments

The structured learning and continuous improvement objectives of the explicit experiment approach do provide a way to limit regulators' exposure to losses. However the management and organisational challenges of operating explicit regulatory requirements as well as the time required to complete the experiment for house construction are likely to make this solution unworkable.

4.2.3 Insurance

The report of Sapere and Buddle Findlay suggests that the question of insurance is intertwined with the liability imposed on contracting parties.¹⁹ At present, the builders, architects, materials suppliers and building consent authority are jointly and severally liable for the consequences of failure. A switch to an insurance model of some sort would require a move to proportionate liability, which entails numerous additional effects on the behaviour of contracting parties. These issues are complex enough that the Government has referred the matter to the Law Commission for further investigation.²⁰

As discussed, it is unlikely that sufficient private insurance can be induced without compulsion to ensure durable regulations. That suggests a move to social insurance may have been required in order to ensure that the legislation remained durable and robust to the losses that eventuated. Such a scheme was previously in effect in New Zealand: the Building Performance Guarantee Corporation performed the role until 1987. Indeed, in its report to Parliament, the Department of Internal Affairs' Building Industry Commission recommended that a similar body be re-introduced to manage the risks created by the switch to performance-based regulation.²¹

¹⁹ Buddle Findlay and Sapere Research Group, *Review of the Application of Joint and Several Liability to the Building and Construction Sector*, Report to the Department of Building and Housing, April 26, 2011.

²⁰ Office of the Minister for Building and Construction, 'Building Act Review: Review of Joint and Several Liability', para. 64–67.

²¹ Building Industry Commission, *Reform of Building Controls*, Report to the Minister of Internal Affairs, January 1990.

5. Summary

The weathertightness failures in New Zealand were costly, but perhaps not in a net public benefit sense. That the government chose to react so strongly suggests that it was not acting purely in the interests of maximising net public benefits. Indeed, some of its actions generated increased risk in the building industry and were, arguably, also inequitable.

That raises the question of how regulations should be designed to avoid being so susceptible to breaking down in the face of realised losses, the risk of which could have been anticipated at the outset. We term regulations that are robust to such losses “durable regulations.”

Three options present themselves:

- light-handed signalling by the government to increase the information available in the market;
- explicit experimentation by the government that limits exposure to risk; and
- government-provided or induced insurance schemes to cover such losses.

Each would work in some circumstances, but the particular nature of the building industry suggests that government-provided social insurance would have been the most likely to succeed in this case.

More generally, the question of durability is one that should be taken in to account in the design of regulations. Policy-makers should ask themselves what is likely to happen if things turn out badly, and whether their regulatory scheme is robust to those outcomes. That is not simply a case of maximising net public benefit but also of avoiding instances in which large losses create vocal lobby groups. Accounting for the effect of future political responses may not create the most efficient regulation in a static sense, but it has the potential to increase both dynamic efficiency and be more equitable in the long-run.