Brian Easton

Regulatory Lessons from the Leaky Home Experience

I begin this paper with a manufacturer's warning: that I use the term 'regulation' slightly differently from the way it is used in some other papers presented in this symposium, coming as I do as an economist from the tradition of mathematical systems analysis. By that tradition's standards, a market is a regulatory system, so it finds limiting the use of the term 'regulation' to just statutes and the regulations that are derived from them. It also recognises that some administrative practices are regulatory. The legal framework for regulation may be quite adequate but the administrators may fail to implement it effectively. So when I write about the global financial crisis being a result of regulatory failure I am allowing that the law, the market and the administration may all have had a role in that failure. Thus the statement has little informational content; its importance is that when we try to disentangle what happened, or remedy it, we do not concentrate on one element of the regulatory system: they are intricately interrelated.

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Behind this is a view that much public policy is concerned with designing or improving the regulatory system of the economy (and sometimes of non-economic activities). Typically, the change is not the imposition or removal of regulation, but a modification of the current regulatory system to one which is intended to be more effective. In particular the so-called 'deregulation' of 1984–1994 is better thought of as a change in the overall regulatory system, with greater emphasis on market regulation. Hence my preference for calling this 'market liberalisation'. Even the most extreme proponents of this liberalisation knew that there was a need for law to enable the effective working of markets.

Humpty Dumpy said that he could make words mean what he chose them to mean. While that may be true, the danger is that others will misunderstand what their meaning is and that they get trapped into sterile and misleading uses. That has happened, I think, with 'regulation'.

The size of economic crises

I do not propose to give much attention to the global financial crisis, whose regulation is outside the scope of this symposium. But we might note that its direct costs to the United States government from the bail-outs are estimated at US$90 billion, or about 0.6% of US annual output. The equivalent cost in New Zealand would be NZ$1.1 billion. The cost of fixing leaky buildings is put at least ten times as much. There are a variety of estimates, depending on assumptions, but currently the lowest is NZ$11.3 billion (i.e. 6 % of annual GDP), with estimates going up to $33 billion (18% of annual GDP), based

on 110,000 dwellings costing an average of $300,000 to fix or replace.

Comparing the two figures is not quite right, since the American one does not include the private costs of the crisis, and the leaky building figure does not include health and trauma costs. However, the comparison does suggest that the failure to build watertight homes is an economic disaster comparable in magnitude locally to the global financial crisis internationally.

Thus, the leaky buildings episode is a major instance of regulatory failure in New Zealand. This paper uses the experience to evaluate the proposed Regulatory Responsibility Bill.

Leaky homes: the beginnings

There is no authoritative account of how the leaky building syndrome (LBS) arose. Here follows a sketch, with particular attention to the role of regulation.

Home construction is a long-established industry, which historically might be characterised as a craft one. Technology was slowly changing, and learning was on the job, with an increasingly formalised system of apprenticeship training. Quality control was by reputation, by professional membership of organisations such as the Master Builders Association (which has been around for over 100 years), and by local government which approved plans and had building inspectors check a builder's work. Typically the inspectors were retired builders – retired perhaps because of physical infirmity but very knowledgeable about building practices. (The role of the building inspector was nicely recalled by one person who said the builder of his now 30-year-plus-old home was described by his building inspector as 'your friend'. No doubt some builders took a less charitable view of the inspector.) Some new housing also involved architects or engineers.

Until the late 1980s, local authority by-laws prescribed the manner in which construction was to be carried out, although different councils prescribed different building methods, a heterogeneity which the building industry found unsatisfactory. Of course mistakes were made, but they were not widespread and the building industry learned from them and corrected its methods.

From about the 1970s the rate of technological innovation in house construction began to accelerate. How the innovations were incorporated into the building programme is not clear. Probably at some point it became evident that 'learning on the job' would no longer be sufficient to ensure that the new technologies could be used effectively, although it is not clear what happened instead. By 1979 the innovation challenge was sufficiently serious to be mentioned in public fora.

[In the 1990s] The system of regulating dwelling construction was changed dramatically through a building code which set performance criteria to be achieved rather than prescribing the manner in which buildings were to be constructed.

Various institutions had been developed to protect new house purchasers, including the Building Performance Guarantee Corporation. This was decommissioned in 1987. By doing this the government may have markedly reduced the Crown's financial exposure to risk from poor quality building and, with hindsight, the enormous LBS bill. Had the Building Performance Guarantee Corporation existed in the 1990s, it might have identified the problem earlier or even encouraged better standards of building. (The parallel here is the Earthquake and War Damage Corporation (now the Earthquake Commission), which has insufficient funds to deal with a major earthquake but deals expeditiously with the consequences of smaller ones, while pursuing an active programme of prevention.)

Another institution disestablished in the late 1980s was the Ministry of Works and Development. This decision is usually seen as reflecting the downgrading of engineering relative to accounting in the priorities of policy makers. The extent to which it had an impact on the housing construction sector is unclear, so it is uncertain whether the LBS can be grouped with the Cave Creek tragedy and the Auckland CBD blackout. However, the Ministry of Works and Development's disestablishment symbolises the fact that engineering standards became less significant in public policy thinking.

Some of the functions of the ministry, including those involving housing construction, were transferred to the Department of Internal Affairs which established a Building Industries Commission, whose 1990 report is discussed below.

Other events of the 1980s also contributed to the concatenation which led to the LBS. One was the reform of local government, which must have led to upheaval in many planning approval offices and among building inspectors. There is a view that funding was reduced, so there was poorer supervision. A second was the labour market upheaval in the late 1980s, as many manufacturing workers were laid off, which may have resulted in many under-qualified workers becoming self-employed builders. A third was the reduction in apprenticeship training.

Leaky buildings: the 1990s

In January 1990 the Department of Internal Affairs' Building Industry Commission reported. Its general recommendations were incorporated in a bill introduced into parliament by the Labour government later in the year, to be passed under the National government, with bipartisan agreement, as the Building Industry Act 1991. Instructively for this story, the report's proposal to reintroduce something

like the recently disestablished Building Performance Guarantee Corporation was not proceeded with.

The system of regulating dwelling construction was changed dramatically through a building code which set performance criteria to be achieved rather than prescribing the manner in which buildings were to be constructed. For instance, builders were told just that the structure must last 50 years, the cladding 15 years, and that the walls and roofs must be impermeable to water. The belief was that the old regime had stifled the use of new materials, design and construction, thereby discouraging innovation and raising building costs. Under the new regime new methods would be introduced more easily. The minister in charge of the bill, Graham Lee, who was once a builder, said its most important element was the development of private building inspectors. (If only that had been correct.)

The act came into force in 1992 with the introduction of the Building Code. There is a view that the code was the 'cause' of LBS. However, as the preceding section indicates, there were numerous factors coming together which led to the failure.

The early 1990s was a period when the market extremists were still triumphant, and there was frequent reference to 'light-handed regulation', referring to a regulatory system in which the government is not very active but the regulation is based upon normal market practices, including litigation for breach of contract (perhaps under the Consumer Guarantees Act in cases where the contract was not very elaborate). Ideally, the threat of litigation is sufficient to ensure that the contractor maintains the agreed standards.

It appears that little thought was put into considering the issue of what redress the house owner would have if the performance standards were not attained. Suppose the cladding fell off after 14 years? Under light-handed regulation the aggrieved party can take the matter to litigation, but who exactly is to be sued? The above account suggests that there are many involved, and all, to some extent, may be at fault: the local authority, its building inspector, the builder, the architect, the buildings material supplier, the developer, the home owner who onsold, and even the legislators and their advisers who passed the relevant legislation. In such situations fault can be very difficult to establish in law. A favoured explanation is James Reason's 'Swiss cheese causative model', in which there are a series of slices with holes in them and a particular untoward event occurs when there is an alignment of the holes. While this may be useful for explaining a single event, its relevance to explaining a repeated failure is less clear. The LBS involves thousands – perhaps over 100,000 – homes. Alignment of the holes in all these cases cannot be an unfortunate coincidence. The failure was systemic.

Given so many potential groups at fault, and given that the building failures took time to identify, that litigation is not always quick, that many of those involved will have passed on and companies will have disappeared, and that in any case they cannot possibly collectively find the $11–$33 billion required to fix the problem, outcomes for the victims of LBS have frequently been unsatisfactory and costly. (Suing the government is not really an option. Parliament is too clever to allow that, yet many think the government of the day has the greatest culpability – although were it to own up it would be the taxpayer who would pay. In any case the current Minister for Building and Construction has said (New Zealand Herald, 27 February 2010) that the fiscal realities are that even the government's pockets are not that deep.)

The Swiss cheese model which might be useful for a particular court case is not particularly helpful when the cases get repeated. In the end one must ask why there was no self-correcting mechanism. Or, to use a much-loved New Zealand image, why there was inadequate fencing at the top of the cliff instead of relying on courts at the bottom.

The LBS appears to be associated with at least two innovations which, no doubt, were cost-saving at the time. The first was the use of a 'monolithic cladding' which has proved not to be watertight unless it was used strictly according to specification. The second was the use of untreated timber, without the realisation that treating for borer also better sealed the wood from water. Additionally, some house designers cut back water-protecting features such as eaves.

The problems of construction may not be confined to leaky homes. They extend to apartments and may involve commercial buildings. The collapse of the apprenticeship system and the operation of some not-very-qualified builders has meant that the quality of the workmanship has not always been high. The use of other new materials, often imported – following the ending of import controls – means that poor and unsustainable construction may plague other elements of the housing stock in a manner similar to leaky houses.

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Ironically, the LBS should not have been as much of a surprise as it was. The Canadians experienced it too, but a little earlier. I have heard it claimed that there were people who knew of the construction failures long before they were a public issue, but their response was inadequate. If that is true, then a further regulatory failure was that there was a political environment in which individuals were discouraged from speaking out.

We might summarise the conclusion by noting that when Marcellus in Hamlet

said 'Something is rotten in the state of Denmark', he was not referring to the buildings but to the governance.

The Major Projects

The LBS may not be the greatest regulatory failure in to New Zealand's economic history – even ignoring macroeconomic crises such as the Great Depression, which, in any case, can be attributed to a severe external shock arising from offshore regulatory failure. Although there is no authoritative estimate of the collective cost to the economy of the energy-based Major Projects (Think Big) programme, it is likely to have been of a similar order of magnitude as leaky buildings.

The Major Projects taught some of us an important lesson. In the early 1980s, considerable effort was put into evaluating the public return on the investments and there was much debate on the criteria to measure this. However, with hindsight we know the evaluation exercises missed the point. Suppose the assumptions were not fulfilled. Who would bear the cost of the failure?

Those doing the evaluations in the private sector were unaware that the downside risks were not borne equally, while those in the public sector, who did know, did not seem to have taken these asymmetries into account. In particular, it turned out that if there were cost over-runs (there were some), or the world price of oil was lower than projected (as it proved to be), the cost of the failure was borne almost entirely by taxpayers and consumer-motorists, because the corporate investors had their returns guaranteed – one way and another – by the state.

There is a parallel here with the leaky buildings. As in the case of the development of the Building Code, insufficient attention was paid to what would happen if something went wrong. It is true that in both cases there were means to settle the failure. In the case of the Major Projects the financial deficits were covered by taxpayers and motorists. In the case of leaky buildings, a slow, cumbersome and expensive process of litigation is settling the costs of redress erratically. Part is borne by the house owner, part by the private suppliers and the local authorities, with the central government offering to pay about 10%. Many would say that the costs are not being borne equitably.

Murphy's law and regulatory assessment

This is all a nice example of Murphy's law. Not the 'if anything can go wrong, it will' version, but Edward Murphy's original aim to design a system on the assumption that anything which can go wrong will go wrong. I doubt that this thought was uppermost in the minds of the designers of the Building Code, and I don't recall much attention to it in the evaluation of the Major Projects.

Of course, accident prevention cannot be all-encompassing. Murphy was in the aircraft industry trying to minimise crashes; the easiest way to do this is to not let planes fly. Similarly, there are going to be some risks from the building code. However, a lot of grief could have been prevented had its designers asked 'if things go wrong, what happens next?' That so few aircraft crashes have occurred compared to the total number of flights, and that even fewer have led to death, indicates the value of the design principle that Murphy enunciated.

Should we build Murphy's design principle into our policy process? The evidence is that we have often not done so in the past. As far as I can judge, it is not there in current policy evaluation, and it was certainly not in terms of the two major regulatory failures I have just identified.

The Major Projects were handled outside the legal process as entirely an administrative matter. As it happens, some of the omissions are covered by the 1989 Public Finance Act, in so far as the risks the government exposed itself to should now appear as contingent liabilities in the government accounts. However, I am not sure whether the guarantees the government gave, which ended up as additional costs to motorists, are covered by the new procedures. The precise guarantees could not occur today, because of the greater use of market regulation – such as there being no restrictions on imports of oil. They resulted in tax increases which would not have been anticipated at the time of the agreement, and so would not be mentioned under the contingent liabilities provisions.

However, the LBS, with the benefit of hindsight, is very revealing as to the inadequacy of our approach to regulation in the early 1990s. It demonstrates that 'light-handed regulation' with recourse to the courts if there is failure may not always be an adequate answer.

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Regulatory impact analysis

Suppose the Building Industries Act and the Building Code had been reviewed under the current regulatory impact analysis procedures. It would be too much to expect the review to forecast the LBS, but reasonable questions, like our earlier one – what if the cladding fell off the house after 14 years? – would have anticipated the issue of what happens if the construction did not meet the performance standards in the code. (Note the importance of the time horizon: if the cladding fell off during the construction process there is a reasonably effective redress process.)

The checklist in the Treasury's Regulatory Impact Analysis Handbook is set out in the appendix to this article. While each of its items may be reasonable in its own right, at no point is the evaluator asked to consider what might go wrong and what would be the consequences if that happened. The

analysis is not interested in what redress process might be triggered if something goes wrong. (One colleague argued that the going-wrong issue is implicitly in the handbook, and she explicitly teaches it in her training sessions. So much the better for her students, but I have no doubt the checklist dominates consultants' thinking when they are doing regulatory impact reports.)

The handbook is a lineal descendant of the project evaluation approach that was used in the Major Project appraisals. It does not require a cost-benefit analysis (although these are sometimes included for particular cases), but it adds the sort of caveat analysis which should be done with a cost-benefit analysis (but was often not in the early 1980s). The handbook shows no evidence of having learned the chief lesson of the application of cost-benefit analysis to the Major Projects – to ask what happens if things go wrong? The basis of the approach seems to be that 'the policy will work, but there may be some collateral impacts. Please identify them.' Thus, the handbook approach would have done nothing to prevent the LBS, nor the enormous costs which it has generated.

The proposed Regulatory Responsibility Bill

The Regulatory Responsibility Taskforce submitted a Regulatory Responsibility Bill in September 2009. Again we ask: would the bill, were it a statute at the time, have done anything to prevent or forewarn of the inadequacies of the Building Act and the Building Code?

Again, the answer is no. The bill establishes a set of principles, not one of which addresses the issue of what happens if some statute or regulation fails to deliver on its intent. From this perspective the proposed Regulatory Responsibility Bill is ineffective. It would not have made a single difference to the adoption of the Building Act or the Building Code, nor resulted in a single additional watertight home. This is surely a major test of its relevance. If the proposed bill would have been useless for dealing with one of our greatest past crises, it is unlikely to be much use for preventing future ones.

One could well argue that that is not the intention of the bill, whose purpose is described as 'to improve the quality of Acts of Parliament and other kinds of legislation by specifying principles of responsible regulation ... and requiring those proposing new legislation to state whether the legislation is compatible with those principles ... and granting courts the power to declare legislation to be incompatible with those principles'. If so, the bill has the wrong name, not only in terms of the definition of regulation given earlier in this article, but also in terms of the normal meanings of the narrow legalistic term regulation. Its title is a Humpty Dumpty exercise of choosing a phrase which appears to mean something quite different to the public generally. I leave others to find a more appropriate name, but the proposed bill seems to me to be more one about legislative process than one about regulatory responsibility.

This failure is all the more surprising given that three of the members of the taskforce were deeply involved with the Major Projects. They were on the side of the angels, but are repeating the previous

Appendix: Checklist in the *Regulatory Impact Analysis Handbook* (pp.33-4)

Will any policy options that may be considered, potentially

- Take or impair existing private property rights?
- Affect the structure or openness of a particular market or industry?
- Impact on the environment, such as regulations that affect the use and management of natural resources?
- Have any significant distributional or equity effects? ...
- Alter the human rights or freedoms of choice and action of individuals?
- Have any other significant costs or benefits on businesses, individuals or not-for-profit organisations? ...

Is the evidence-base for the effectiveness of different policy options weak or absent?

Are the expected benefits or costs of the policy options likely to be highly uncertain?

Is the success of any of the options likely to be dependent on other policy initiatives or legislative changes?

Are any of the legislative options likely to have flow-on implications for the future form or effectiveness of related legislation?

Are any of the legislative options likely to be novel, or unprecedented?

Are any of the legislative options likely to be inconsistent with fundamental common law principles?

Are any of the legislative options likely to be inconsistent with New Zealand's international obligations, or New Zealand's commitment toward a single economic market with Australia?

Are any of the legislative options likely to include a new power to create delegated legislation, or grant a broad discretionary power to a public body?

Are any of the legislative options likely to include provisions that depart from existing legislative norms for like issues or situations?

Are there other issues with the clarity or navigability of, or costs of compliance with, the current legislation that it might be good to address at the same time?

Will people with expertise in implementation provide input on the policy design before policy decisions are taken?

Are implementation timeframes likely to be challenging?

Are the actual costs or benefits highly dependent on the capability or discretionary action of the regulator?

mistake by assuming that the intent of the policy will be carried out, rather than asking what happens if the policy outcome is different from the intent. As the taskforce report makes clear, this proposal belongs to the same stable as regulatory impact analysis, the lineal descendent of the cost-benefit analysis which was so misleading during the Major Projects debate.

Conclusion: the Murphy gap

What this paper has identified is a major gap in the formal policy process. Let us call it the 'Murphy gap'. There is not built into the policy process a test of what happens when a policy outcome differs from that which was promised. Of course it is rare for promises to be exactly attained, but what we have shown is that in the case of the Building Code (and the Major Projects) the failure was very large – gigantic. While in principle it could have been anticipated, it was not.

Neither the Regulatory Impact Analysis Handbook nor the proposed Regulatory Responsibility Bill address the Murphy gap. One might argue that by ignoring it, and yet giving the impression that they provide a comprehensive review of regulatory impact, they exacerbate it by complacency.

Who knows whether a current or future piece of legislation (and associated regulations) may result in a failure with an economic impact the size of the Major Projects, the LBS or the global financial crisis? There is still no systematic way of such a possibility being brought to the attention of those who are passing or implementing the laws. From this perspective, the proposed bill is irrelevant as a means of improving regulatory responsibility.

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