

THE INSURANCE INDUSTRY'S ROLE IN TOWN PLANNING

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That this Conference is being held, and widely publicised, and that it is promoted by the Earthquake and War Damage Commission, is evidence that the Insurance Industry does have and will continue to have a role in Town Planning, and therefore Regional and District Planning Schemes. The purpose of this paper is to advocate a wider and increased participation, both directly and indirectly, by the insurance industry in the formulation and review procedures of such planning schemes.

Since my working life has been spent in the City of Wellington, and because I was involved with the Wellington City Council for 15 of those years, and much of that time devoted to the formulation and subsequent review of the District planning scheme, I will use Wellington as the canvas upon which to sketch the thrust of my advocacy.

The long history of Wellington has been marked by seismic effect. In the early days of maori settlement, what we now refer to as the Miramar Peninsular was an island. I remain comforted by the fact that living as we do above the intersection of the Indian and Pacific plates as they grind together, seismic movements in this area over the last 1000 years have tended to raise the land mass rather than lower it. Therefore the Miramar Peninsular became linked, albeit by swamp lands (now the airport) to Kilbirnie by the time European settlement began. Similarly the 1855 earthquake thwarted the formation of the proposed Graving Dock which we now know as the Basin Reserve because the excavated canal which is now called Kent & Cambridge Terraces was raised 2 metres in that earthquake. Since European settlement, there have been 4 major earthquakes in Wellington: 1848, 1855, 1931 and 1942. These earthquakes amongst hundreds of others of a lesser intensity felt (or latterly recorded) in Wellington had their epicentres well

distanced from the City. For example, the 1848 earthquake was centred in Marlborough with an assumed magnitude of 7.1. The 1855 earthquake was centred in south west Wairarapa, with a probable magnitude of 8.1, while the 1931 was centred in Hawkes Bay, magnitude 7.9, and 1942 the epicentre was again in Wairarapa, magnitude 7.0.

The plate intersection below this part of New Zealand is roughly below the line connecting the Alpine fault in the South Island to White Island in Bay of Plenty. Between these two points of course, are the Wairau and Wellington fault lines. Fortunately, the close relationship between the earthquakes and the surface faulting found in California along the San Andreas Fault is not present in New Zealand.

The history of the Wellington City Council's involvement over the last 20 years, in requiring the upgrading of buildings within the Central Business District to withstand earthquakes has been well documented, both by City Engineers through the NZEI, and by elected representatives. I spoke on this subject in the Dobson Lecture in 1983 and the Hopkins Lecture in Christchurch in 1985. It can be briefly summarised as follows:

- 1968. The Government passed legislation enabling local authorities to declare themselves as a categorised earthquake risk and thus take to themselves powers requiring the upgrading of buildings to meet that risk.
- 1969. The then City Engineer, Mr. J.S. Roberts recommended that the Council so declare itself.
- 1970. The Council did so, and a storm of protest arose from building owners, developers and the Chamber of Commerce.
- 1972. The Council determined that all earthquake risk buildings on Lambton Quay and Willis Street be demolished or strengthened by 1982, and all other earthquake risk buildings be

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replaced or strengthened by the year 2000.

1974. A survey of all the above buildings was completed.

1985. Of the 187 earthquake risk buildings existing in the main streets identified in the 1974 survey, only 94 remained. Currently, in 1989, this has been reduced to 60.

In other areas of the CBD, the 1974 survey identified 405 earthquake risk buildings and by 1985 this was reduced to 271, and currently, in 1989 to under 200.

It is quite conceivable that the total CBD programme will be completed by the year 2000.

During those years, the pace of new development in the CBD was astounding, and though there were parallel forces encouraging development in the capital city, it is unarguable that the firm stance of the Council was a trigger for much new building, as well as retrofitting. In 1977, the Wellington City Council, along with the NZIA and NZEI invited Peter Cully, a Wellingtonian then and now San Francisco based, to describe the work of his structural engineering practice in the lateral bracing of masonry structures in and around San Francisco. Subsequently some consultancy practices in Wellington, notably Rankin Hill and Smith Leuchars developed expertise which has led to the seismic strengthening of many CBD buildings.

It was also during this period that the Council began to acquire and/or develop small open spaces within the CBD, which, in the general perception of the citizenry were applauded as lunch time recreation areas, and certainly they serve that delightful purpose. The more serious motivation however, was to provide open space where in the event of earthquake, people could shelter from falling masonry and glass, rolling vehicles and where helicopters could land.

I have dwelt on the 1970s and 1980s in Wellington to illustrate the awareness of that community, through its Council, that it is a city at risk.

Now parallel with this period of concern, the Wellington City Council was formulating, and subsequently reviewing its District Planning Scheme.

Relevant to this conference, and this paper, it is worth recording that developers are encouraged to retrofit and strengthen their buildings by a bonus offered within the District Scheme. Namely, they are offered a plot ratio bonus of 1, over the allowable plot ratio development, and the ability to transfer all undeveloped plot ratio to another site.

A further refinement upon the current District Scheme and its accompanying plan sheets is the approximate definition of the

Class 1 Fault Line which runs parallel with the Tinakori Hills close by Tinakori Road, and in an area of relatively high density residential development. Efforts promoted by the Council to have all land subdivision titles within 20 metres of the fault line noting this fact have, for obvious reasons, been unsuccessful to date.

I turn now to the role of the Insurance Industry in town planning - the formulation and review of District Schemes. I regret it is non-existent, or at least appears to be so.

I find this regrettable, because over the many decades of urban settlement in this country, there must be a wealth of recorded knowledge built up by individual insurance companies, the Insurance Council of New Zealand and of course the Earthquake & War Damage Commission. I am unaware that this information is comprehensively formulated into reference works, nor am I aware of any representations, delegations or advocacy mounted by the insurance industry to the current certifying authority for planning approvals and building permits - the local authorities.

I say current certifying authorities because local authorities may not remain in their traditional role as certifying authorities, depending upon present studies undertaken by the Building Industry Council. There are alternatives, including "Design Certification", or even insurance based building approval authorities as is currently the position in France.

Since deregulation of the insurance industry began in 1975, up to which time it was fairly severely controlled, competition between companies has become rampant. Competitive rates quoted are so fine in the current volatile market that it is hard to see a clear categorisation of risk. The hitherto reduction in premium of about 40% for the installation of sprinkler systems has reduced to 20% or less, but even that becomes meaningless when some companies are tendering at prices which could indicate the risk at minimal whether or not a sprinkler system is installed.

Clearly some major companies take cognisance of the differing earthquake zones in New Zealand, limiting their total exposure in the zones of greater risk.

And obviously all companies take comfort from the approvals to site and build constructions issued by the local authority. But some companies take no cognisance of a building's proximity to a known fault line, and while a few may consider the risk of liquefaction of filled ground adjoining harbours, e.g., Gracefield at Petone, others do not.

My thesis is that as society becomes more sophisticated, so should our insurers. There should be a much greater degree of categorisation of risk, and recognition firstly by the insurance company and then by the client that the correct siting and the subsequent construction of a safe building will reflect materially and

beneficially upon the owner.

The Insurance Council of New Zealand might well be the organ, along with the Earthquake & War Damage Commission to initiate not only a greater public awareness of these matters, but instil into its members a need for research and finite classifications.

Yet as I say that, I understand the N.Z. Insurance Council is no longer involved as an approving authority for the design and installation of sprinkler systems, a valuable role it played in that field for many years. But it is my view, that the insurance industry and its re-insurers should more finely tune their tariffs to identify safety or risk relevant to local siting, and standards of foundation and building, fire protection, means of egress, installation of glass, verandahs, and the lessening of damage to ceilings, partitions, fittings, lifts and water supplies, is but part of the challenge.

I realise that the earthquake component in a building insurance premium is not large and as I understand it, probably in the order of 20% as under:-

Earthquake insurance premium	say	20%
Fire insurance premium	"	25%
Fire Servica Commission Levy	"	20%
Government levies (non specific)		20%
Insurance Co. profit	"	15%
		<u>100%</u>

However, if that be the case it is well appreciated that fire is usually the disaster to follow severe earthquakes, which would seem to elevate the earthquake component to a majority risk in such zones in this country.

It follows then, that the insurance industry, in conjunction with the local or regional authorities (in Wellington's case the Wellington Regional Council has begun in producing definitive maps of areas of fault lines, flood plains, slip plains, and liquifaction, in co-operation with the DSIR in certain instances), might well address the dissemination of information to local authorities touching on areas of risk in ground conditions, with particular reference to those sites at greatest risk to life and investment, namely concentrated urban centres.

If there is no great resource of expertise within the insurance industry on these subjects, and I remain unconvinced on that matter bearing in mind the wealth of commonsense and experience of past disasters inherent in insurance, then such expertise is readily available through the DSIR, widely recognised for an ability to produce seismo-tectonic hazard reports.

The eventual inclusion of microzoning plans within District & Regional Schemes will benefit not only present and future owners of land, but the wider community and the insurance industry itself.

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