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SUBMISSION Roles & Responsibilities

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Preamble.

This submission is divided into separate sections however they cannot be entirely separated as they all impinge on one another. Section 3 *Issues with the current regulatory framework* form the basis of this submission while section 4.4. is also addressed. Although the questions are not answered specifically they are all covered in the submission.

While identifying problems every effort has been made to offer an achievable solution.

Although the Canterbury Royal Commission's primary responsibility centres around recent earthquakes, the opportunity has and can be taken to broaden the investigation into best practice of all building design, construction and maintenance. This is considered a wise move because changes made purely because of failure due to earthquakes need to be addressed holistically with regulatory requirements, Standards, inspection, peer-review, skill based qualifications and training required for all building and construction work.

The errors that followed the Hunn report into the leaky building problems were made because they were the result of actions purely addressing rotting timber and not the fundamental cause of the problems.

*Page 8 3.1* Simply blaming communications or lack of guidance of the building regulatory framework as not being user-friendly is nonsense. There is a systemic issue with the building control framework as explained below.

*Page 8 3.1.1* Simply making a national policy statement similarly would not address the main issues

The power that DBH assumed from the 1992 Building Act (and still have), has been the cause of much confusion and antagonism that has arisen between the regulatory bodies –DBH, BCA's and the Building Industry.

Building needs to be given back to the Building Industry and the LBP scheme (with all its warts) is a great start.

The Role of the BHG (Building & Housing Group) is not to write prescriptive compliance documents but to approve them.

1.0.

### **Responsibility**

Earthquakes do not kill people – buildings do.

In the view of the writer there were many reasons for the Christchurch disaster and that which followed the earthquakes and these can be divided into separate cause-and-effect.

While one of them undoubtedly was lack of peer review and supervision on site of the modern buildings that collapsed, the reason for the collapse of older buildings was different.

There is no doubt that the seismic regulations have changed markedly over the years but the procrastination of the Christchurch City Council and the lack of legal power for the DBH to enforce its findings played a major part in the failure of many of the older buildings

To provide a perspective on New Zealand Building Controls their history is important and it all started with an earthquake!.

1931 Hawke's Bay Napier earthquake destroyed the majority of large commercial unreinforced masonry buildings (URM's) in Napier, Hastings and central Hawke's Bay were largely destroyed, resulting in the death of 256 people.

1932 The government moved to take action and New Zealand Standards Institute was established

1935 Standards model building bylaw first introduced into New Zealand however it was not mandatory. Local authorities adopted, adapted or wrote their own.

1964 The first mandatory national building code introduced. The Chapters were published in A5 format so they could be put in your back pocket!

NZS 1900 chapter 8 1965 required all new buildings to have reinforced masonry construction to resist seismic movement.

Three different earthquake zones were identified.

1974 Local Government Act gave the territorial authorities the power to require existing unreinforced masonry buildings (URM) .less than half the strength of the earthquake loading of that required for new buildings in 1965 to be strengthened.

1978 Wellington City Council demolished perceived earthquake risk buildings but was criticised for failing to save heritage buildings. The Public Trust Building (NZ 's first steel frame building), Wellington Town Hall, the DIC, Hunter Building, the St James theatre and many others were saved and strengthened.

1990 Building Bill recommended a building should be considered an earthquake risk if it had less than half the strength of the 1968 loading provisions and it could cause loss of life in an earthquake having a return period of 150 years. The return period being the average interval between earthquakes of a specific intensity.

1991 After substantial public and Parliamentary debate the Building Act 1991 failed to introduce the new proposed standard and the basic 1968 remained in place!

2004 The Building Act 2004 introduced provisions to improve existing buildings (not houses) that were less than one third of the strength required for the current building design standards - 34% NBS.

2005 The DBH requested all local authorities to have developed and adopted a policy regarding local buildings most vulnerable in a moderate earthquake.

2006 30 May 2006 was the deadline for a policy to be in place. Each local authority had to take into account their own area's seismic, economic and social conditions, to develop a policy on earthquake prone buildings (EPB's) over an "appropriate" timeframe; policy to include the likely level, probability and severity of earthquake risk in their area, and what impact these would have on life and property.

2007 The New Zealand Society for Earthquake Engineering recommended that 67% of the NBS should be applied as the minimum target.

2007 Gisborne earthquake in December stimulated a further round of policy reconsiderations.

2009 The DBH again asked for an update on each of the TA's policies

2009 Christchurch C.C. had not decided what to do even though they were first asked in 2004.

2010 August 9<sup>th</sup> the CCC subcommittee met and decided on their earthquake policy recommendations to present to the Council which were that all unreinforced masonry buildings should be strengthened up to 34% by the year 2042 depending on their priority and level of risk. It was said '*clearly a major quake would have a catastrophic consequence of the city*'

2010 Unfortunately it was a case of too little and too late and on September 4<sup>th</sup> at 4.35a.m.the first earthquake struck at Darfield.

2010 Five days later on September 9<sup>th</sup> the Christchurch City Council met to consider the subcommittee's recommendations but these were rejected and they pushed through a new policy requiring EPB's to be strengthened to 67% of the building code but not until 2032! .

2010 The CCC were on a sharp learning curve because on September 9<sup>th</sup> Christchurch City councillor Sue Wells said

*"What we are trying to do is make sure buildings don't fall on people. What we have learned through the last little while is that buildings which are strengthened to 33 per cent of the building code will not provide the security that we are needing. Mayor Parker said the city had a "duty of care" to the people and the council had to react to the quake.*

2011 Unfortunately history did not wait for the CCC. Disaster struck on 22<sup>nd</sup> February and 13<sup>th</sup> June with very shallow earthquakes at 5km and 11km deep at an unprecedented peak ground acceleration of 1.8g vertical and horizontal movement.

Although this was well outside the present seismic requirements, you could say because they had not acted many years earlier the City was negligent (I could not possibly say that). Then again you could say that the DBH was also negligent because they failed to enforce their own requirements for strengthening.

We have learnt a lot about the techniques of building in a seismic country but we are not prepared for the social cost of upgrading. An old car gets to the stage when a WOF simply is going to cost too much and the car is a menace to other road users. There are a lot of NZ buildings without a seismic WOF.!

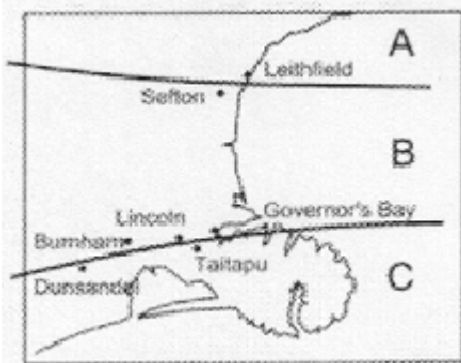
There is no doubt that many people were taken unawares that Christchurch could suffer so badly from earthquakes.

Earthquakes do not kill people, buildings do. Worldwide during earthquakes more people die because heavy roofs fall on them.

While seismologists are looking for a new fault line we should be looking at the faults that have allowed EPB's (earthquake prone buildings) to remain for so long without demolition or strengthening. Such events should not come as a surprise. A 7.8 Fiordland earthquake in 2009 brought New Zealand 300 mm in closer relations with Australia and it is likely that being within 100 kms of the main Alpine fault that Christchurch could soon have another 'biggie'.

A report commissioned by the New Zealand Earthquake Commission (EQC) in 1991 found that earthquakes causing significant property damage with loss of life possible could recur on average in the Christchurch area every 55 years. The study also highlighted the dangers of soil liquefaction of the alluvial sediments underlying the city, and the likelihood of significant damage to water, sewer and power supply services. So why was no one listening?

Recent changes in New Zealand standards reflect lessons learnt from the effects of earthquakes both internationally and in New Zealand, recognising the inadequacies of previous design practices when compared to current earthquake knowledge. Many existing buildings throughout New Zealand still fall short of the present standards particularly those built before 1976. The new provisions are directed only at the worst of the existing buildings those with less than one third of the strength of a new building posing about 10 to 20 times the risk of serious damage or collapse when compared to a new building.



The seismic map in NZS 3604:1999 (and 2011) shows Canterbury squarely in zones A,B, and C, low medium and high all within 40 km of one another! - as if that was ever possible? (Christchurch city is in the same zone as Auckland!)

**Loading Codes**

NZS 4203:1976 -contained basic earthquake provisions relying very much on the designer,

NZS 4203:1984 Part 3 Earthquake Provisions 27 pages of requirements and commentary

NZS 4203:1992 Part 4 Earthquake Provisions 23 pages of requirements and 39 pages of commentary

NZS 1170.5 2004 Earthquake Actions 76 pages of requirements and 79 pages of commentary.

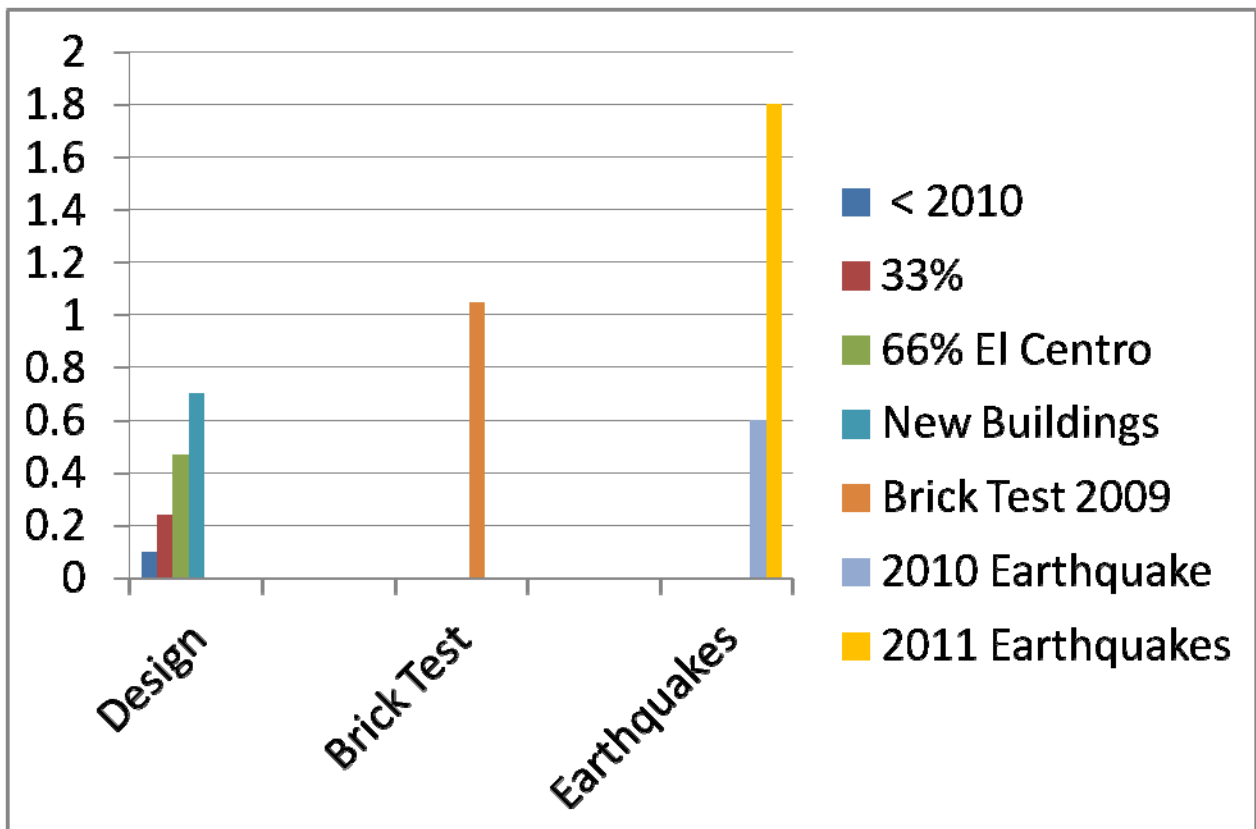
Such a document was a long overdue but welcome addition to the seismic design requirements for New Zealand. It however only gave Christchurch a Z hazard factor of 0.22 compared with Wellington 0.40 and Auckland 0.13. Both NZS 1170.5 2004, and NZS 3604: 2011 will need a major relook particularly at zoning.

It is obvious from the above chronicle that we have come a long way with knowledge but the lag of enforcement was a major cause of the Christchurch disaster.

**Solution**

Empower the BHG (Building and Housing Group of MBIE) so that this must not happen again. The building upgrade has to be addressed immediately and nationally.

**Building in the wrong way in the wrong place with the wrong materials.**



The unprecedented ground accelerations shown in the graph above of 2011 earthquakes, show that to design buildings to withstand these forces would be economic; but it also points out the danger of building high-rise concrete buildings on poor ground.

CCC were also very aware that Christchurch was built on swamp. This had been well documented but glossed over in importance. Warren & Mahoney stated that their buildings were always more expensive because they piled them whereas other designers built on top of the sand!

It can be noted that no steel framed commercial, industrial or residential buildings were badly damaged in the trio of Christchurch earthquakes only minimal damage occurred mostly at the designed active links. The brick test referred to in the graph was conducted by NASH (NZ) at the University of Melbourne in April 2009 using light Steel Framing and brick veneer.

Excellent performance was observed from tests

- no damage under SLS
- hairline cracking under ULS
- no loss of bricks at MCE
- some brick loss at 1.6x MCE (2.7x El Centro)

What was very heartening was that the results from the major 2011 earthquakes in Christchurch replicated the test results with very little damage occurring to brick or block veneer on light steel framed houses. The reason for this was the flexibility and ductility of the steel frames when compared with reinforced concrete or timber.

What we have learned is to construct buildings out of steel that is ductile so that they can bend. The increases in seismic resistance that have occurred regularly since 1932 have come at a cost and have been criticized for being prohibitively expensive. This is the main reason why local authorities have been procrastinating for years on upgrading their EPB's (Earthquake prone buildings).

### **Solution.**

Build high rise only in steel.

### **Failure of the present New Zealand Building Control System.**

The NZBC control system needs a fresh look.

The Building Act 1991 produced a performance based Building Code and set up the Building Industry Authority that was empowered under the Act to '*prepare or to approve*' a document establishing compliance with the building code.

Without the two words '*prepare or*' the course of building control in New Zealand during the last decade would have been vastly different.

Simply expressed at the time, the controls were to be *simpler, easier, cheaper and more innovative*, (which now appears to be in line with promised Government policy).

Unfortunately exactly the opposite has occurred.

The decision via the Building Act in 2004 to allow a government department to write prescriptive building compliance documents was a knee-jerk reaction to the leaky home crisis. While it is conceded that something was needed in such an emergency it is not an acceptable permanent solution for building controls.

The premise was that because the Acceptable Solution is not mandatory that other options would be acceptable on an equal footing; this has never happened for the following reasons:

The BCA's assumed (wrongly) that the Crown would accept liability if it could prove that an acceptable solution was the cause of failure. Conversely the BCA acceptance of an alternative solution exposed them to liability which they had been directed by their councils to avoid.

Similarly designers and builders chose the easy route where by default the acceptable solution became the norm. It became increasingly difficult to obtain consent when details which challenge such edicts as the risk matrix in E2/AS1 were presented for consent.

While the mandatory NZBC objectives, functional and performance requirements are sufficiently robust enough to ensure a good standard of building and cover all building construction, the prescriptive acceptable solutions are not.

The present process of building control is flawed. It allows a disparate collection of people scattered throughout the four corners of NZ employed by a local authority to apply complicated and difficult to understand controls in a uniform way. The skills needed to check the plans and specifications of all buildings and to inspect them as they are built are just not available, and more particularly if new products and methods are ever to be accepted in this country.

The reticence of the BCA's to allow the flexibility (that we saw a glimpse of after 1991) has gone forever. They have become risk averse because they have been given full blame for other people's mistakes. This is immoral and unjust.

Not all of the present problems are the fault of the Building Industry as NZ law as written does not adequately address the liability issues that are central to the problem.

In line with the egalitarian approach of the successive governments of the last seven decades it appears that everyone else is responsible for somebody else's mistakes, which is contrary to natural law. It could be said that without a significant and urgent change in the Joint and several liability law of New Zealand many of the present building control problems will remain.

Unfortunately the 2004 Building Act was so coloured by the 'leaky homes crisis' that decisions were based on views that did not stack up at the time and do not today. They were however a knee jerk reaction from bureaucrats and endorsed by politicians who went along with them to 'solve' the political problem.

### **Solution**

Remove the word 'prepare' from the Building Act.

Do not to have any Acceptable or Alternative Solutions - only Compliance documents and change Part 2 Subpart Section 22 of the Building Act 2004.

Change the Joint and several liability law.

### **Licensing.**

Although the licencing, and therefore the liability has now been shifted to the designer and the trade practitioner, an anomaly applies to the LBP scheme as it only applies to residential and light commercial construction. What this ignores that the same basic building skills are required whether the structure is a home, a factory or a high-rise. A roofer, electrician or plumber are not constrained in this manner and

such fragmentation and artificial divisibility makes our present building regulatory system inconsistent and inefficient

There is not, and never has been a clear cut demarcation line and qualifications for any building work must include all types of construction. Naturally there will be endorsement such as required for a driver's license but a license you must have.

Without registration or licensing you could take my appendix out.

By connecting the licensing of trades and their responsibilities was intended to sort the men from the boys. We have yet to see how effective LBP will be but it must be extended to all building construction

The whole idea of the Licensed Building Practitioner Scheme was to place the responsibility for building design and building integrity where it should lie, with the designer and the supervisor in charge of the job. The thinking that people, who do not have to be licenced, and designing and building larger buildings must know what they are doing is incorrect as the same design and installation mistakes are being made across the range of building types.

A well trained builder with experience who has qualified to be an LBP should be able to build a residence and use to that experience to be part of the team that builds a high rise. The difference is that on large construction sites the needed checks and balances via site meetings and professional oversight that are provided, which is often not the case with residential construction. The LBP license should reflect that in the same way that one has a heavy trade license.

The LBP Board is already set up to deal with the LBP who fails the job. Authority and responsibility are dancing partners. An automatic built in QA system much more effective than any Building Inspector.

### **Solution.**

Extend the LBP scheme to all building.

The LBP scheme and the same compliance documents apply to all building work.

All restricted building work must be signed off by an LBP.

### **Tendering**

The tendering process followed in New Zealand is seriously flawed.

We have built to a price not a standard and the NZBC durability requirement of 15 years for 'easily replaced' components is still contributing to the problem.

I need my appendix out. Do I put the job out to tender? The Government themselves have often set a poor example by accepting the lowest tender.

The blatant 'shopping around' that is now a normal part of the tendering process runs the same inherent risks as 'sleeping around.'

The habit of pricing low to obtain a contract and then by 'post-negotiation', screwing the subcontractors, has driven down the standard of workmanship

Everyone, client and contractors would benefit from a more reasoned approach, by accepting the closest tender to the average. This new rule would ensure good builders could survive and encourage everyone to quote accurately and fairly, and stop the 'buying' of contracts.



It could be argued that pricing is not part of the building control scene. However it has been a major cause of the building of sub-standard structures.

It was no coincidence that the appearance of 'cowboys', labour only contracting and the proliferation of 'design & build' companies arrived at the same period of time. Quality was driven down by price and the disparate collection of people assembled to build had no cause to cooperate with one another and produced a number of interface areas termed 'no-mans land'.

This interface problem between subcontractors translated into an interface problem with materials, which have now been pinpointed as 'leaky (or risky) areas'.

There are many good tradesmen out there and thousands of buildings that are well designed and built by companies who cannot compete fairly because they are not prepared to lower their workmanship to the lowest common denominator. The professionals have not escaped either. The architects and engineers have had their fees cut by competition and 'negotiation' with the predictable result.

### **Solution.**

When building high rise buildings only invited tenders should be called and it should be made known that the acceptance will be the closest tender to the average

### **Industry Training**

The root of the weathertightness and quality problems highlighted over the last two decades is has been somewhat unfairly blamed on the installer when many buildings were designed to fail. The decline in the level of design and trade skills while the increasing legislated increase in complexity in building has only exacerbated the problem. Methods of design and installation have been used by unskilled or uninformed people and the 'why' has not been taught. The importance of tying reinforcing and concrete slump has not been realised. Many timber buildings have rotted, not because they got wet but because they could not dry out. The use of insulation without the knowledge associated with condensation and ventilation, even in high places, will continue to make problems, not fix them. By teaching only the how, - 'dummy see dummy do' without teaching the why', the skill levels will remain as they are.

LBP's must learn the 'why'.

Like a learner driver there must be a benchmark below which a person must not be permitted to work in the building industry without the supervision of a licensed tradesperson. A level of skill requires both training and education and under our present system without off-site training there is little or no education. Training is the 'how' and education is the 'why'.

Today building skills are competency based and centred on unit standards and related certificates developed by the ITOs and NZQA . Off-job education is almost non-existent. Trainees are often judged competent when they not only lack many skills, but their trade education is woefully inadequate. The assessors in such cases may be the employer or other trades people.

The blind leading the blind - the moderation of training and assessment of trainees is at best-clumsy and inconsistent, at worst allowing a continuing decline in skills.

The next decade will demand greater skills than ever before as new products and systems need to be understood before they can effectively integrated.

Prior to the Building Act 1991 only minimal intervention was required by the Building Inspector because the technical skill and craftsmanship –(the know how) was still present in the older workforce. With their demise or retirement, coupled with the new skills required for new technology, it is important that at all levels, design and installation must be taught not just picked up as you go along..

Labour only contracts divorced the authority and responsibility and the real culprits escaped.

There can be no quick fix for the decline in the level of skills in building sector. It took 20 years for the 'dumbing down' to occur and it will take about that time to upskill the workforce again. It is a mistake to think that up-skilling will happen under the present system.

The only way to increase the level of skill in the Building Industry is to formalise off-site training. If Government does not provide additional funds, this education may have to be financed through an addition to the Building Levy.

This will eventually bring back the pride of workmanship which separates skill and labour but will be conditional on rewarding those who have gained such experience. A LBP requires a high level of skill and should be paid accordingly.

### **Solution.**

Reestablish formalised compulsory trade training including off-site training by Government or levy funding.

### **NZ Standards**

Products should conform to a standard. There are two types of Standard

A Standard is a performance document that often contains the test method to verify it.

A Code of Practice is a prescriptive document which demonstrates alternative methods of using or installing a product and fits the category described in section 22 of the Act. The difference, not always appreciated by those who write and use them, is that a successful recipe (Standard) contains a detailed description of how to put everything together.

The reason why appraisals (a form of certification) failed to stop rotting timber frames was that the performance Code of Practice was never written.

Product Certificates would be used like BRANZ appraisals, as means of promoting sales, but would not prevent one failure.

The huge cost of product certification to New Zealand could not provide any cost benefit compared to investing in trade Codes of Practice.

The real problem is how you design and install the product and the product certifiers are not the people who know that.

Those who do, belong to the industry who make and use them and must write their own generic Codes of Practice – not for individual company gain, but for the benefit for all New Zealanders who build or purchase homes or buildings.

These should be accepted by the new Building Authority (albeit the DBH) on a 'why not' philosophy, not the present 'why' expensive route. Money spent on these

compliance documents would achieve the aim and the cost would be less than that on any product certification scheme.

Formerly, N.Z. Standards were funded by the Government but now Industry has to not only write the Standard but pay for that privilege as well. They must be written by the Industry and not just by researchers or gangos or by the big companies whose vested interest can outvote commonsense. Codes of Practice should be funded from the Building Industry Levy directly to Standards New Zealand. These form the second part of the two tier system i.e. a performance based Building Code, alongside a prescriptive product Standard Code of Practice.

A Code of Practice supplies 'the why and the how' of the what.

Standards also have another very important role to play in the LBP structure as they will become the textbooks for the unit standards required for trades-people to become qualified and licensed. For this reason they must be available free on line, in the same way as DBH documents are at present,

One of the reasons for the failure of the present building control system in New Zealand stems from building act itself which allowed a government department to override New Zealand standards which were a consensus document. The lack of government funding for Standards New Zealand and the disinterest shown over the last decades has played a major part in not only the Christchurch catastrophe but the increased costs associated with building and additional building regulations providing little added value. If standards are to be universally used they should be free on the Internet in the same manner as the New Zealand Building Code. Cost is a detriment to the use of standards by designers and building practitioners alike.

The writer has been involved with standards for many decades and is present a member of three joint AS/NZS standards

The SNZ NZ Building Sector Board at present does not have the necessary funding to update, rewrite and implement Building standards unless funded separately from the DBH. The writer is also a member of one of these - the DCIAG the Design and Construction Industry Advisory Group.

The present system fails because money is supplied to SNZ by DBH conditionally on compliance with the Department's wishes. This situation must cease and SNZ must be funded independently and able to offer consensus building standards to the building industry free on line (as DBH documents are).

Compliance documents must carry equal status must include both Standards and Industry Codes of Practice and should be the product of the best expertise the country can muster organised via Standards and Trade Associations. They should be written by members of that Industry or Industry documents written by the National Body representing the majority of those companies working within it.

The courtroom determines that the tradesperson has a Duty of care to take ultimate responsibility notwithstanding any appraisal or Standard This is a rock and a hard place.

The present system costs money and causes unnecessary frustration. Compliance documents must not be written by lawyers or bureaucrats.

Regulations are decisions, notwithstanding some recent 'wider consultation' are not consensus documents as standards are required to be.

We could do without a lot of Standards and we could co-join others. For every standard there is a cost, and savings can be made by amalgamating committees or by reverting to citing an appropriate International or an Australian standard.

Compliance documents such as Codes of Practice can offer many different solutions all of which are 'deemed to comply' with the NZ Building Code.

This is a 'can do' control rather than the 'can't do control' in vogue at present. It means that the BCA does not have to make a choice every time a consent is required, as it has been made once and stands until rewritten or withdrawn.

The only good thing about Acceptable Solutions is that they are free on the internet which means to

The accepted standards process world-wide has the same disadvantages as any democratic process but it is better than a bureaucratic one.

### **Solution**

Fund Standards via the Building Industry Levy but ensure the money gets to those who write them not to the administration. Provide free and unlimited access to building standards free on the internet to all LBP's.

Each industry should be funded to write a Standard Code of Practice compliance document.

### **Durability.**

There has to be a mindset shift from the idea that building is a temporary affair which has been built into the legislation in the last two Building Acts. It is understandable therefore that it has been accepted by builders and Building Control Officers alike.

The NZ Building Code B2 -B2.3.1.(b) has placed an arbitrary time (15 years) on the replacement of any building cladding which has coloured the thinking of some builders who believe that is all that is required. ("*She'll be right it only has to last 15 years*").while the building itself only has to last for 50 years!

It is disputed that 15 years is a reasonable time for the durability of cladding materials as with maintenance, cladding can and does last in excess of 50 years.

The removal and replacement of cladding can require the evacuation of the building, and because of the loss of amenity the building could be unfit for habitation while repairs are being carried out. Such a major reconstruction demonstrates the 15 year requirement for cladding durability to be a flaw in the Act, as the lowest common denominator will apply and always be assumed. Being 'easily replaced' has nothing to do with durability. Public opinion is disbelieving of a law within New Zealand that requires only a 15 durability for the cladding of their homes and buildings.

It is believed that this factor has been a major contributor in the failure of building systems since the introduction of the performance NZ Building Code.

It is also disputed that the life of building should be only 50 years. The influence of the NZBC in these respects must not be underestimated when looking at the quality of buildings built.

The perception of durability should be related to reliability, security, peace of mind, value for money and protecting ones asset and saving economic loss to New Zealand.

The present requirements do not fit with the Governments policy on sustainability.

The consumer is also a participant and not an innocent bystander in his 'temporary affair' with building. If buildings are to be included as part of our throw-away society with a 'life cycle' and have a consumer driven 'product life', then there is a penalty. On average we only stay in our homes for less than seven years and as you only get what you pay for, failure is built into the product just as it is in electric appliance "consumables". Building tenancies are now also temporary affairs. If you want a building that is trouble and maintenance free then you will have to pay the price.

It is a mistake to regulate durability by 'ease of replacement' and implying building is temporary affair. This 'low-risk' philosophy, like the 15 year durability requirement of B2 sends the wrong message

### **Solution.**

Double the performance requirements of B2.3.1. (a) to 100 years and B2.3.1. (b) to 30 years.

### **Site supervision.**

It is unreasonable to expect any site quality assurance to occur unless the person or persons assigned to this task would be on site all the time the work is being carried out. This system was used previously for buildings over a certain value and complexity and this person was called the Clerk of Works He worked for the owner to ensure the plans and specifications as well as the current standards and building regulations were adhered to. He had power to make decisions on minor variations and was in constant communication with the engineer and architect in charge of the job. His daybook was a record of work done and who did it If the system had been in place the collapse of the Southland Stadium and the CTV building would most likely never happened.

### **Solution**

Bring back the Clerk of Works.

## **The role of the building consenting authority**

The new BCA must be a central crown entity with (say) offices in Auckland, Wellington, Christchurch, Dunedin and Hamilton with on-line facilities for consenting on a National basis with one voice and one authority. The liability issue disappears because the Crown assumes it and the Authority is staffed by professionals who are paid sufficiently to ensure that consents are dealt with efficiently on a 'why not' policy not a 'why' one as at present.

They will have a data base of 'multiple consent' approvals, product approvals and rely on the Code of Practice compliance documents as sufficient evidence of 'deemed to comply' with the NZBC Performance Building Code.

By the use of multiple standard algorithms, uniformity of process can be provided unlike the present system.

Only specific design or innovative design will require additional supportive evidence for which there must be no limit on consent time placed on the BCA. The time for this type of consent will be determined by the applicant by sufficient quality and quantity of the evidence, including test data, provided to the BCA.

The next decade will see pressure on the building industry and the consenting authorities alike to understand the new products and processes required to move the world towards sustainability. Approval must be done on a national basis.

The present building envelope has been sealed up by the Department set up to administer the Building Act.

What is needed is a co-ordination and cooperation that is not possible in the present over-regulated 'we know best' environment.

Requiring building Inspectors to be responsible for QA is not and never has been a sensible requirement.

The Joint and several liability law of New Zealand must be changed to avoid the possibility that the BCA will be responsible for other peoples mistakes..

The role of the TA's building inspector, when required, would be similar to that of the traffic officer – anytime- anywhere without warning. Depending on the seriousness of any breach, the TA building inspector could suspend the LBP's licence and refer him to the LBP Board. In the same manner this works well with the traffic officer issuing a ticket which is dealt with by the court.

The responsibility of the TA inspector is limited to compliance with the consented documents including 'minor changes' made on site on request of the builder.

More efficient building control administration could be obtained if the roles of approval for consent, and inspection are separated..

The role of the building Inspector is to inspect. His job is to check that the work has been done to the plans and specifications approved by others and to endorse minor changes as described elsewhere.

The economically and technologically frustrating regulations have to go.

If the recipe is bad then adding salt or sugar won't fix it .We need a new recipe.

## **Solution**

National consenting only by professionals. Local inspections when required.

## **Rewrite the Building Act**

The Act has been rewritten so many times that it now contradicts itself. There are double negatives in Schedule 1 and even lawyers do not understand them.

Take Dams out and put them somewhere else.

Make an attempt to have user friendly unambiguous regulations.

*Meaning of earthquake-prone building*

*(1) A building is earthquake prone for the purposes of this Act if, having regard to its condition and to the ground on which is built, and because of its construction, the building—*

*(a) will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations);*

*A moderate earthquake is legally defined as:*

*in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is*

*one-third as strong as, the earthquake shaking (determined by normal measures of acceleration, velocity and displacement) that would be used to design a new building at the site.*

The Building Act 2004 Part 2, 122 - this section has to be rewritten along with the regulations which defines a moderate earthquake.

Unless this is done we could have another Christchurch in other places in New Zealand – anytime soon..

Maintenance has not been defined.

BA 2004.Part 1 Subpart 1 Sec 4 (2) (a) (ii),(iii).

The need and desirability described in the Act will never happen unless it is enshrined in law by the Minister. (not the TA or RA).

When buying a car we expect the seller to provide a warranty – and it does. Volvo and Volkswagen both provide a 12 year warranty against corrosion. You can buy an extended warranty if required and they are mostly transferable to the new owner.

When buying a new house or building the owner is entitled to a current warrant of fitness ( as distinct from a CCC) and a total warranty conditional on maintenance. Warranties provided by building material suppliers are generally pro-rata and even 15 year warranties are effectively voided by the 10 year Statute of limitations while warranties for building workmanship are either 2 or 5 years. Warranties offered by Building Associations are mostly insurance policies paid for by the new owner Most people buying a house are not told about non-transferable warranties or maintenance. Most material warranties are 15 years simply because that is all that is required by the NZ Building Code!

Real Estate agents must become liable for the provision of a ‘Warrant of Fitness’ before a new or second hand house sale can take place. This would include a CCC if there is one, or a CA endorsed by ‘reasonable grounds’ for future maintenance. The residential WOF would include the warranties that were provided to the original owner and a maintenance schedule. Failure to adhere to these requirements could be held as contributory negligence if any claim on any surety was made.

The Building Industry must have a compulsory building indemnity insurance, similar to the A.C.C.(but better) to be in place when commercial warranties fail for whatever reason.

A lawyer free, transparent to all (to learn from past mistakes) blame-free pay-out for the unfortunate but with an excess to ensure the owners take some share of the responsibility.

Surety backing must be mandatory and the Crown must underwrite any fidelity fund. Such mandatory provision of surety would require regulation, with associated to administration costs (hopefully cheaper than insurance companies) and paid for if necessary by the building levy.

## **Solution**

The new Act must incorporate the changes outlined in this report to or we will be talking about all this again in another five years.