What is happening to our timber preservation legacy?

Sir

A pamphlet released by a major timber supplier early this year through building supply outlets, apparently to assure buyers about the merits of kiln dried radiata pine for building framing, challenged my understanding of the radiata pine industry we have built up over the last 50 or more years.

The extent to which New Zealand has developed a radiata pine forest estate probably stems more from internal rate of return accountancy based on growth rate than from inherent wood properties. The fact is the species produces non-durable, low to medium density, lumber.

In recognition of that fact a great deal of research and development effort was carried out over the last half century aimed at upgrading the use and reputation of the species. As a result, comprehensive standards for upgrading durability and strength were developed which, when adhered to, allowed radiata pine and other softwoods to be used in situations where specified structural integrity and minimum life of service could be reasonably guaranteed. Accordingly the species has been assured a major place in meeting our own building programmes and its international reputation was enhanced.

A comprehensive set of timber preservation standards, which established quality assurance for products ranging from marine piling to enclosed framing, was developed. It seems that until the 1990s these standards did ensure good in-service performance.

In recent years there has been a dramatic failure of the species in low hazard situations, particularly in new housing. One commentator has indicated that one in five houses built in the last five years has significant rot problems. Why?

I suggest the pamphlet that I picked up off the shelf at a building supplies outlet gives some insight. It is titled **Anyone who thinks H1 framing can prevent dry rot needs treatment**. To stress the point, the statement is made anyone who suggests framing timber that has been H1 treated can prevent dry rot is full of it.

The pamphlet concludes that the company's kiln dried product is *BRANZ appraised under certificate No. 279A (1998). When used in accordance with NZS 3604 and 3602 [it] will have a serviceable life of 50 years.*

The quotes from the pamphlet which follow have got me scratching my head. I number them so as to return to them later.

1. An expert is quoted as saying, *it* (the rot problem) *has everything to do with poor building practice and nothing whatsoever to do with whether the framing is treated or not. The fact is that framing timber has never been treated to guard against dry rot which is a fungus. The H1 Boric treatment is specifically for borer.*

A series of questions is then answered.

2. Is treatment free framing more susceptible to dry rot than H1 treated timber? No. Boron and LOSP H1 treated framing timber is designed and specified to provide protection solely against borer and not against termites, beetles or rot.
3. I've heard that the H1 treatment for borer also provides some protection against dry rot. Is this true? At best the treatment might provide very temporary protection against fungus attack. However borates in H1 treatment are naturally soluble and in the presence of 'free' water in an enclosed wall frame, would be leached out over time greatly diminishing the effectiveness of the treatment.
4. *Why do you recommend using treated [timber] in sub floor areas? Research shows that the borer's life cycle requires wet pine with sugars and that the borer has difficulty digesting Radiata pine that has been kiln dried and kept dry. H1 treatment provides extra protection to kiln dried sub floor timber in which moisture content may rise above ideal levels through ground moisture contact.*

I know I am an old timer who has been out of the timber industry for a number of years but my questions arise from my experience as a warranted Timber Preservation Officer for the then Timber Preservation Authority during the 1970s and 1980s.

1. How could H1 treated timber never be intended to guard *against dry rot which is a fungus* when the Timber Preservation Regulations 1955 stated, " 'Preservative treated' in relation to any timber means treated by chemical substance with the object of protecting the timber from injury by any timber destroying fungus, insect, or other animal; and includes sapstain treatment"?
   Building timbers treated for low hazard situations were to be branded H1 (initially C8). The Regulations required timber branded for low hazard situations be protected against all injurious insects, animals and fungal rots. Isn't boric acid highly toxic to wood decay fungi?
2. How can boron and LOSP H1 treatment be *designed and specified to provide protection solely against borer and not against termites, beetles or rot?* Is it toxic to the common house borer *Annobium punctatum*, but not to other organisms which live in and digest wood such as the powder post beetle *Lyctus* spp., two-tooth long-horn beetle and subterranean termites?
3. I understood leaching out of boron requires considerable flow of 'free' water. So if boron treated timber is acknowledged to give better life under 'normal' timber framing situations why is it not being promoted above kiln dried untreated timber?
4. Why is H1 boron treated timber being suggested for *extra protection* for sub floors where there is ground contact when H1 treated timber was never permitted under the Timber Preservation Regulations for this purpose? H4 and H5 are the appropriate lev-

els of treatment for such situations.

The pamphlet does not mention copper-chrome-arsenate treatment (CCA), but as this formulation was also used to treat to H1 standard it is encompassed in the broad claim that *anyone who suggests framing timber that has been H1 treated can prevent rot is full of it.* Was not the function of copper in CCA to be a fungicide?

So could the abandonment by our timber industry of artificial preservation of our non durable timbers for housing framing and self supporting balconies in high rise houses pose a major threat to the future of New Zealand's radiata pine industry?

I believe that the 'rotting houses' issue is one in which the Institute could and should play a full and public role.

G V Buckley

Forestry valuation - discount rates - the courts

Sir,

I was recently flicking through the May edition of the Journal with its excellent series of articles on forest valuation and reading some of the discussion around determining the appropriate discount rate in a forest valuation exercise. Upon reflection I thought it might be interesting to review briefly how the New Zealand Courts have handled this issue in relation to disputes involving valuation of a forest or woodlot. I am aware of four relatively recent New Zealand High Court cases that deal with this issue.

The facts of the various cases range from matters such as:

1. a claim for damages following a fire spreading from one person's land to another's forest;
2. a claim arising from cancellation of a contract as a result of wind throw damage to the forest the subject of the contract;
3. a claim for damages based on the value of forest on land that was incorrectly transferred; and
4. a claim for damages following an allegation of poor planting techniques.

At this point it is timely to note the truism that " *the only certainty about litigation is uncertainty*". In layman terms this means that in addition to "the law" a number of other factors may, on the day, impact on the decision in an unanticipated manner. For example the factual circumstances, quality of legal representation, quality of the parties' experts both in terms of professional expertise and in the witness stand, and the overall views, impressions and experience or otherwise of the Judge concerned. It is also worth noting that the first NZ case was heard in the early '80s and the next three in the mid to late '90s.

It is perhaps not surprising to find that the case decided in the early 80s adopted a discount rate of **3%** (despite the defendant arguing for 6%). In reaching this view the Judge noted some (then) recent decisions in the High Court of Australia which concerned the setting of discount rates in relation to loss of earning capacity following work-related accidents. Here discount rates of 2% and 3% were thought appropriate.

However, perhaps what **is** surprising is the range of discount values set by the NZ courts in the later cases. In the next two cases the Judges concerned seemed fairly comfortable with adopting discount rates of around **9%** or in other words what seems to be the increasingly accepted norm within the industry.

However, in the last (and most recent case) the Judge adopted a discount rate of **6%.** In reaching this conclusion the Judge seemed to find greater comfort in the guidance offered by the first New Zealand case and its discussion of and links to the two Australian High Court cases. Reading between the lines of the judgment (and bearing in mind an aside from the Judge in the judgement to the effect that perhaps mathematics was not the Judge's strong suit) perhaps the respective plaintiff and defendant experts' evidence/discussion in relation to discount rates, how they worked and their link to internal rate of returns may have meant that the Judge followed more clearly the discussion in the first New Zealand case and found accordingly.

Clearly, trying to discern judicial trends from such a small sample is fraught with difficulty. However, prospective litigants in matters involving forest valuations and choice of discount rates would be well advised, I suggest, to ensure that their expert witnesses have both the technical qualifications and excellent communication skills or the gap between industry views on rates and Court imposed ones may continue to exist.

Andrew Caddie

Five-yearly Reviews

The follow have applied to have their five-yearly consultant review:

Ross Bawden
Noel Grey Burn-Murdoch
Murray Inglis
Michael Keith Krausse
Jeff Alan Schnell
Garry Alexander Townley
Anthony Watt
Rene Weterings

The Registrar, NZIF Registration Board, PO Box 1860, WHANGAREI