Ted's News
August 2017

Important Changes to Consultancy Arrangements

I am pleased to advise that I am now a Senior Timber Consultant with the leading firm of durability consultants, BCRC (www.bcrc.com.au). The BCRC team is led by some of the most well know people in the construction materials area, Frank Papworth, Bob Munn and Marton Marosszeky. It is an honour to have my knowledge recognised by such people.

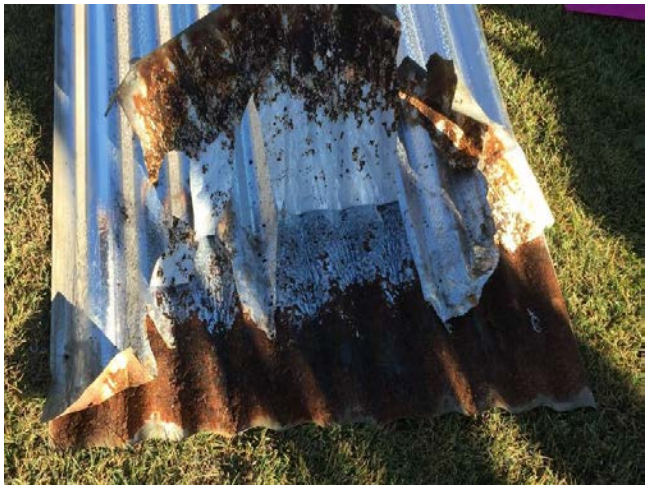
BCRC assist with specifying materials for new projects that will be durable or assessing existing structures to determine their state of deterioration, why materials used were not durable and how to rectify the issue using materials or protection systems that will be durable. By linking with BCRC, my timber services can be integrated with a wide range of international technical experts specialising in different fields of construction materials, including concrete, steel, coatings, brickwork and others. Overall, we are able to bring to bear the most up to date thinking from some of the best minds in the world. This combines with unsurpassed experience and state-of-the-art diagnostic equipment to give leading support.

The new arrangements are:

- Where there are existing arrangements – No change
- Smaller or simpler consultancies, I will still deal direct
- All larger or complex consultancies will be through BCRC
- All Expert Witness work will be through BCRC

With offices in most states, you should look no further than BCRC when you need a Durability Consultant. Here is a link to the BCRC website , Here is a link to BCRC Brochure.

It Seemed a Good Idea at the Time



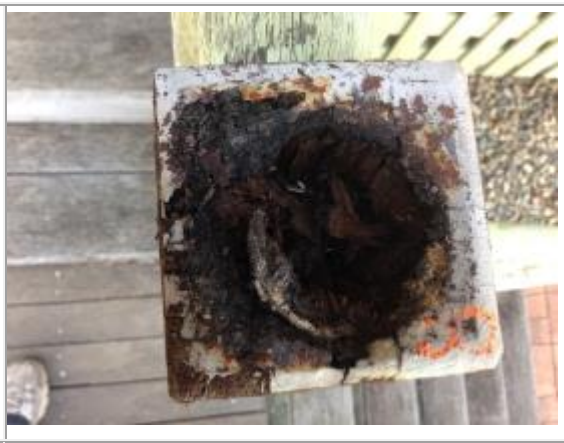
Let me tell you a sad story: recently I replaced the roof of our home. Back in 1992 when I built our home I decided to use a new product called Lysaght Coolclad roofing instead of tried and tested colorbond. The foil backing was marketed as an effective insulation and I thought I was very clever to use it. That was until a couple of years ago when I started to get some mould on the inside of the house. The plumber had bad news, the end of all the sheets were badly rusted and I needed a new roof and of course the warranty had expired. Moisture had entered between the foil and the sheet and rust ensued.

What I see of timber substitutes, such as plastic and composite decking, seems to me to be in much the same category of seeming a good idea at the time. Like my iron, the runs simply aren't on the board yet and I have seen enough to believe that when used correctly, royal species Australian hardwood is still the best answer for external timber applications. The image shows how fire has affected a plastic deck. I urge you to be cautious when considering timber alternatives.

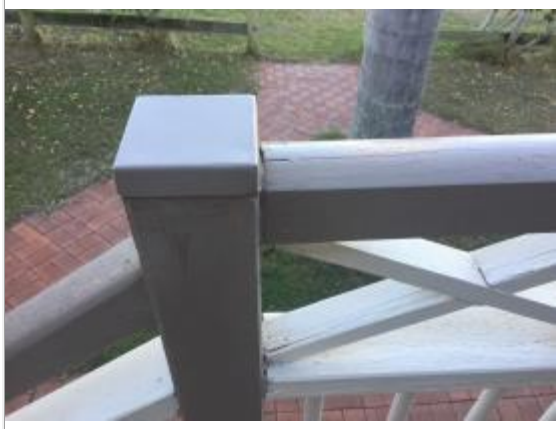
Something Else That Seemed a Good Idea

(or Treat End Grain With Respect)

Decorative ball on top of post



Resultant decay



The repair

End grain opening up

If you have attended My CPD session on *Utilising Heart In Timber* you would have learnt the difference between two very confusing terms, heartwood and wood with heart. What we are looking at here is the end grain of heartwood and the images show why you need to treat it with respect. Also, if you are going to make a mistake, at least do it on your own home, not a client's.

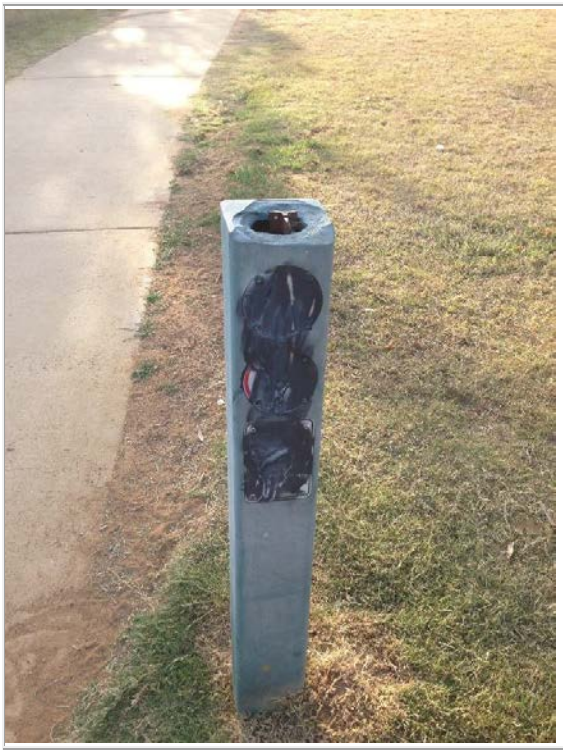
My home is a reproduction pre-federation Queenslander. I thought it would be a nice idea to dress up the posts with decorative timber balls. I drilled into the tops of the posts and glued them in. No problem on the back steps on the northern side (see the first top image) but as for the front steps, it was a disaster (second top image). The handrails are fitted close to the top of the posts so this decay very nearly cost me a complete rebuild of my front stairs. Fortunately I was able to cap them in time.

The fourth image shows the top of the stairs on the eastern side which were not "dressed up" and you can see how 25 years of exposure to the elements has caused the end gran to open. Most of

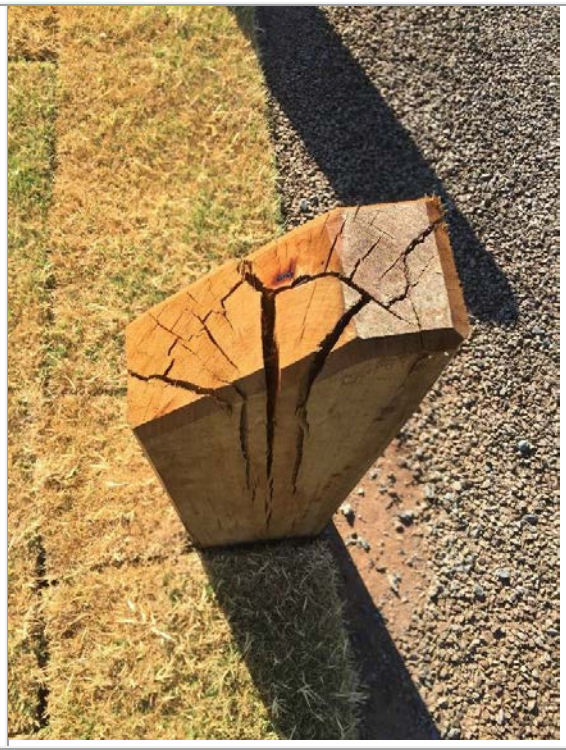
the time it was unpainted. Moisture enters the end grain 8 times faster than through the side grain. I should have just put a sloping top on all the posts. There is no problem with balls in the internal steps but then there is no weather to deal with.

I had planned to reprint an article from Roads and Civil Works Australia entitled *Timber Bridge Renewal and Repair: A Renewed Focus* but it was too long. I have selected portions of it and abridged it (and added a bit in the section below) Click Here for the full article. It is very worthwhile reading as it touches the whole subject of timber use, particularly its environmental credentials, not just bridges. *This article appeared in the June/July issue of Roads & Civil Works Australia and is republished with the publisher's permission.*

A Wood Encouragement Policy - A Mixed Blessing?



An atrocious plastic bollard



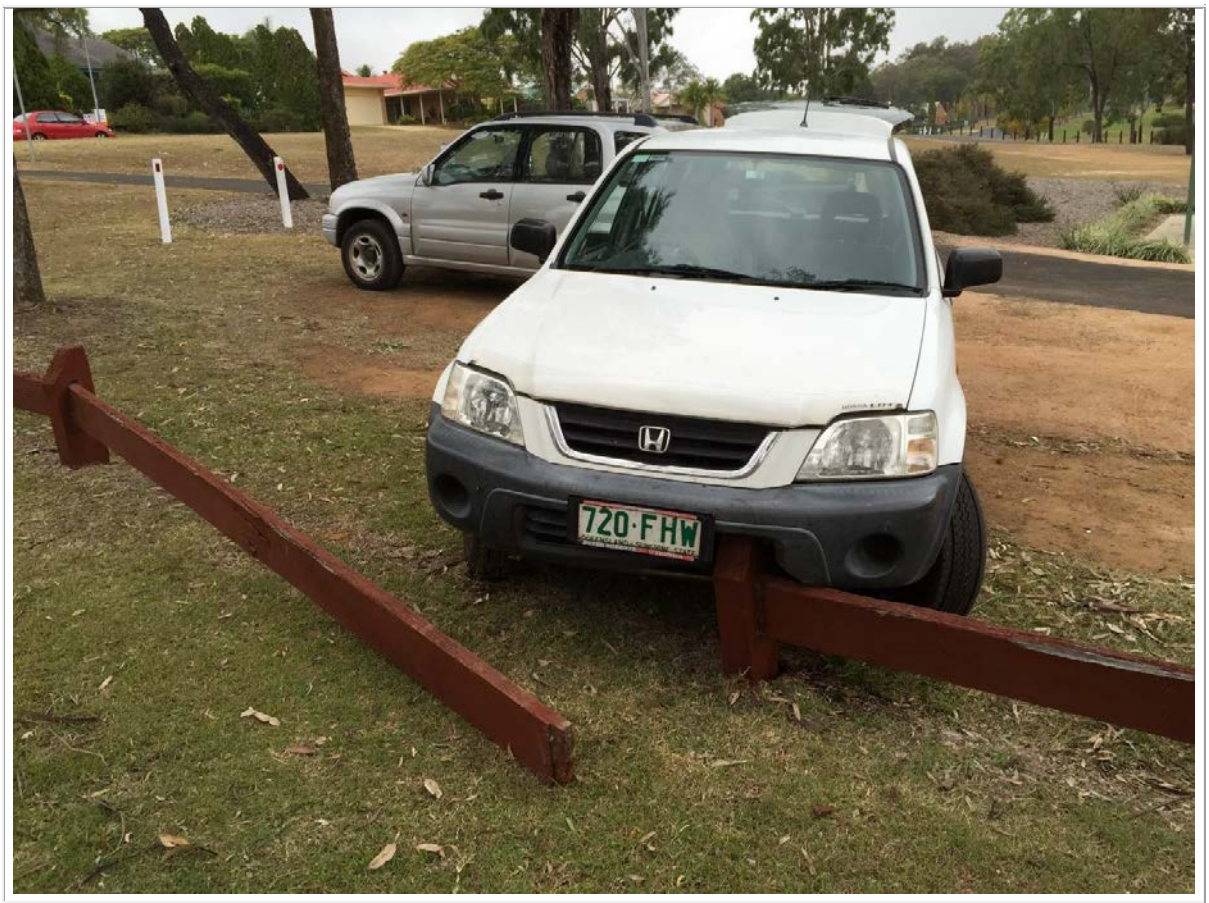
An equally atrocious timber bollard

Dr Dan Tingly, the timber bridge expert (and a valued close friend) commented, "We've talked to some council representatives who went through three courses each for concrete and steel (12-13 weeks per course), compared to two weeks of timber design in a materials class. This lack of training and understanding has them discarding or passing over timber options in favour of steel and concrete as they get into the work force."

Corresponding to a decreasing knowledge of timber, there is an increasing trend by governments globally to adopt a wood encouragement policy (WEP), which requires timber to be considered the preferred construction material in projects when it is equally fit-for-purpose. "Within Australia, 12

councils across four states have already adopted a WEP, including Fraser Coast and Gympie Councils, who became the first councils in [Queensland] to do so.

(Ted's comment from here) While it is a positive move I fear that it could be counterproductive without an increase in timber knowledge. As much as I love timber, a poorly designed, supplied and constructed timber structure ultimately hurts our industry, not assists it. We can't even get simple things right. I supplied 1200 timber bollards to one local government back in 2012. Someone in that authority, not understanding what he/she was looking at, about a year after installation thought they needed to be oiled and then came to the conclusion that timber represented an unacceptable maintenance burden and swung that council on to plastic bollards. But plastic had already failed, as per the image of the 10 year old bollard above which needed a star picket to hold it together. It is not hard for appropriate timber to hold its own against this product.

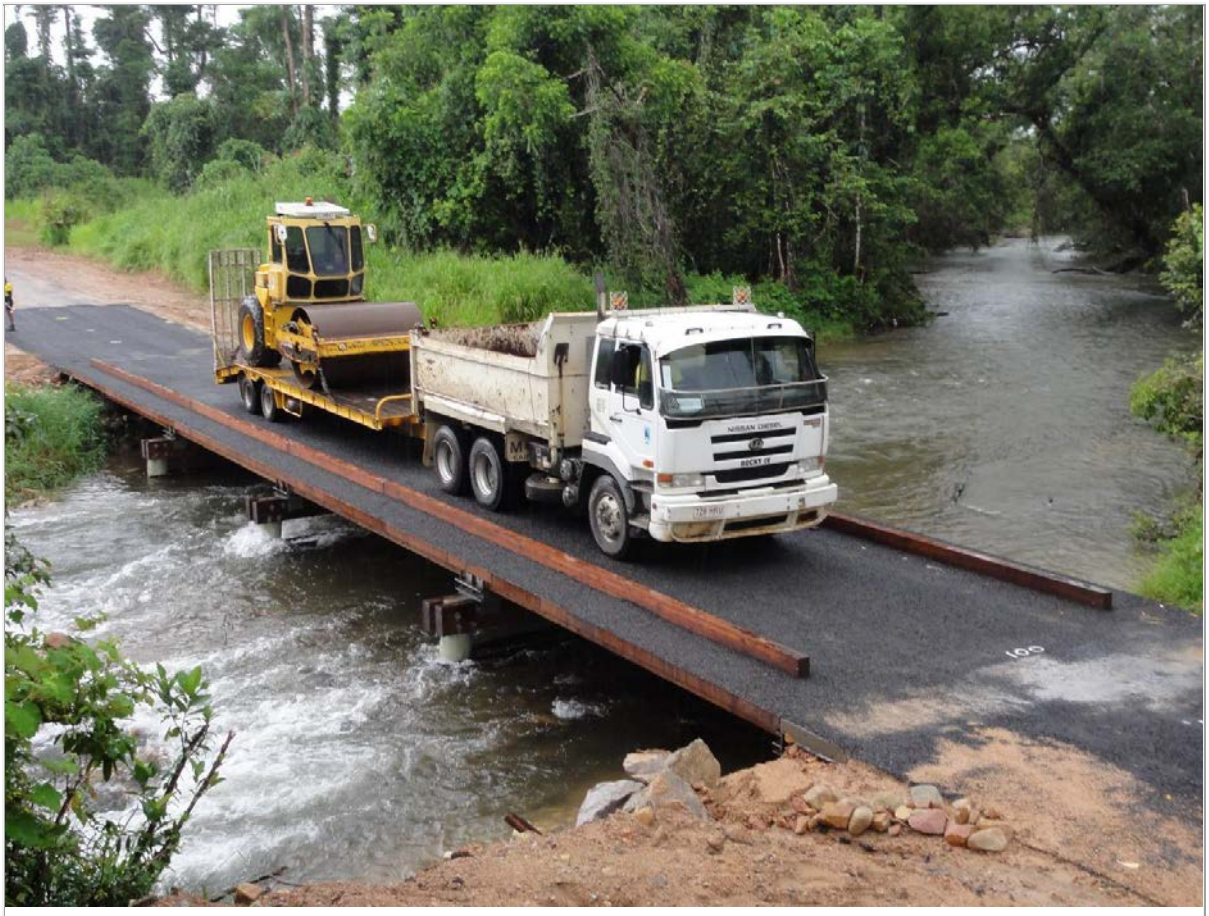


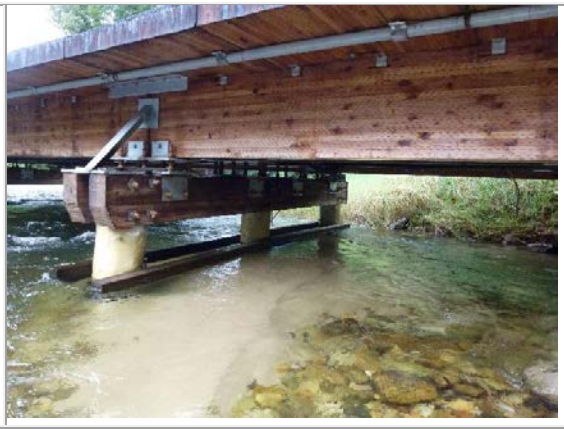
One of my 30 year old bollards writes off a car and protects a playground
(bent cross member, radiator into engine)

For the next large bollard project, that council reverted to timber but used landscaping sleepers with the heart in the centre which will not age gracefully. See the image beside the plastic bollard above. How do you ever get that council to consider timber again?

Good intentions must also be backed up with increased knowledge, appropriate specifications, and independent grade conformation. If you need assistance in this area I can offer training and consultancy services.

Mareeba Shire Turns to Timber Bridges over Concrete





Mareeba Shire Council, on the Atherton Tableland in Far North Queensland, has a mix of 20 timber and concrete bridges and like other councils “doesn’t have the means to fund replacements,” says Glenda Kirk, Contracts & Project Management Officer at Mareeba Shire Council. The council has

recently begun a program of works to repair and renew three timber bridges on low-order roads. “If we were to put them under road project priorities, we’d never get them over the line,” Ms Kirk says. Fortunately she had brought experiences and learnings in this area from her previous role with the Cassowary Coast Regional Council.

Ms. Kirk says the focus on timber bridge renewal rather than replacement proved effective and financially beneficial for Cassowary Coast, and the goal is to achieve the same at Mareeba. “The main thing about single-lane timber bridges is that the abutments will be fine, but the girders are what will be failing or inadequate. If you put a concrete deck on abutments that are built to support timber, you may possibly ruin the substructure by overloading it.”

Rather than repairing or restoring the original timber structure, she says the common alternative here is often to replace the bridge entirely with concrete. However, for rural councils, such as Mareeba Shire Council, which have an extensive road network and low population base, it’s not a cost-effective option. “One of the things that’s driving councils back to timber is cost – the costs of renewing a timber bridge asset can be three to five times cheaper than replacing it entirely,” explains Ms. Kirk.

She says that people realise timber bridge renewal is not the silver bullet and, like other treatments, doesn’t last forever, but advancements in timber engineering are beginning to establish timber bridge renewal as a viable and cost-effective option.

Based on Timber Restoration Systems’ own experience, Mr. Tingley says timber bridge treatments usually cost 80 per cent less than the estimated price to replace a structure with concrete. “The cost of typical restoration strategies can range down to $600 to $1200 per square metre versus a greenfield concrete bridge, which can cost up to $6000 per square metre, with typical costs being in the $3500-per-square-metre range. Even when the super and deck are gone, if the timber substructure can be saved it will lead to costs for restoration from $1800 to $2200 per square metre. This is much less than greenfield concrete costs. Want to know more, Here is a link to Dan's company, Timber Restoration Systems

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