

# OUTDOOR STRUCTURES

*Outlasts and outperforms*

## January 2015 Newsletter

Written by Ted Stubbersfield

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Dear Reader

[Durability of Thermally Modified Wood](#)



Back in the late 80's I visited a friend in central Finland, an incredible place. My friend took me to see a the Petäjavesi Old Church which was nearby. This was not long before It was inscribed in the UNESCO World Heritage List. This church was built between 1763 and 1765 and the bell tower was built in 1821. We will come back to this in a short while.

After a CPD seminar last year I was asked to comment on thermally modified wood which is fairly common in Europe. I was also sent a brochure claiming the wonderful benefits of this product. What we can say about the product is that it does improve the stability of the softwoods it is used on but question whether you get better stability than you achieve with our dense hardwoods. The trade off for this increased stability is that the timber becomes brittle. You do get increased decay resistance but not enough to raise it to a H3 level. A claim of "higher durability" should not be confused with "high durability". But we also have to look to termite resistance and thermal modification offers no resistance to termites. Some studies have shown that termites actually prefer thermally modified wood! Here is a link to a report on modified timber.

The brochure cited some documents to prove the claim of higher durability but when I checked them they were all from Finland where you can have a 250 year old softwood church. Now that church has been repaired many times but I did see very old pine log cabins that were original. The point is that you cannot rely on European and particularly Finnish testing to base your decisions on. The climate is too different as are expectations. See the [April 2014 newsletter](#) where international durability ratings are compared. Durability 1 in Europe is rated as 5 years plus whereas for us it starts at 25 years.

Demand Australian testing before you commit to this product.

### [Feedback on 150x150 warning](#)

Last month I included a warning, [yet again about 150x150 hardwood](#). I received the following supporting feedback from Richard Forester of Richard Forester Timber Inspection. Please take the issue seriously.

"Heart in material should never been allowed unless 175mm or larger. Even that is probably not enough (Ted here: That is also our experience) but that is how the standard has been for many years. I was happy for the change (i.e. to allow heart in timber in all sizes for many species) provided the timber was seasoned.

The problem is if you test the timber green (destructive testing) the timber (That is the timber with heart in) will pass. If you test it dry it will pass. It appears nobody on standards took into account what can happen during seasoning. To suggest a piece of Blackbutt 100 x 50 can be sold as F17 with heart when green is ludicrous. You just end up with 2 50 x 50's. I and my inspectors refuse to pass any green timber to this new clause introduced in 2082 in 2007. . . . If AS 2082 is rewritten I will be pushing to have the new clause allowed for seasoned timber only."



Mango Hill Market Place





We keep saying that we are different to other companies but if you need convincing read the following note from a very happy customer. We supplied his company with six [Continuum shelters](#), some Flinders seats and a custom version of our eclipse bollards.

Ted we are writing to express my gratitude for the quality work done in relation to the Bollards we used at Mango Hill Market Place.

I recall reviewing the architectural specs and then more fully investigating the proposed bollard solution put to us by our architects. I drew the conclusion that a more sturdy and aesthetically appealing bollard must exist within the budget which had been allocated. Starting from the position that we needed a hardwood solution to soften the hard surfaces in the overall development we began an extensive search for comparable products to that which were specified. Whilst cost was an important consideration we were prepared to pay for a product which would last the test of time. The western face of the development gets sun blasted and we wanted a bollard that could cope with the heat and stand proud for years to come as it was our intention to hold the asset long term.

Scouring the internet worldwide we were unable to find a product that met our criteria of being aesthetically appealing, hard wearing, long lasting and functional ( within a reasonable budget). Little did we know our search would lead us to a little timber mill at Gatton and that there we would find a passionate advocate of Australian hardwood with the capability of customising a solution which met our needs. Before meeting with you we thought that we knew a bit about hardwood but quickly realised the extent of your expertise and placed ourselves in your hands to help us customise the eventual product.

As a consequence of our initial meeting we also sought advice on options available in relation to bus shelters as we were not happy with the aluminium solution proposed. Our criteria remained the same as the bollards. We were delighted with the solution proposed which also incorporated the use of spotted gum in a unique design integrating with galvanised steel supports. The overall design was simple, aesthetically appealing, unique and functional. We believe the incorporation of the street shelters



complemented the overall development and provided a consistent look and feel around the site. Like the bollards they are made to last.

The end result looks spectacular, is hard wearing, does its job and we fully expect will last the test of time. Thanks again Ted for your invaluable advice and for helping us to craft customised bollards and shelters. They may not yet be in the architectural digests but we fully expect you will be busy for years to come based on the positive comments we have received about the products from both builders and patrons.

Well done and many thanks to you and your team. You've set the standard.

Best

Darren McMullen  
Jackaroo Property Pty Ltd

### [Timber Induction Course eligible for CPD Points](#)

The guidelines for Engineers Australia and the Board of Architects Queensland allow me to award CPD points for the induction course or individual presentations. The same goes for landscape architects. These are available to deliver at your office or university. Ring me for a quote on 0414 770261

Timber Preservation.  
Hardwood Grading.  
Timber Decks – Designing for Durability,  
Utilising Small Diameter Hardwood.  
The Seven Deadly Sins of Timber Design. .

### [Deck, Queen Elizabeth Drive Canberra](#)

While on Christmas holidays I again visited the deck in our national capital near the High Court. Now you cannot fault the architectural intent, when you look at the aerial view, it is stunning.



But like our politicians down there keep reminding us, the devil is in the detail. And here we do have a very serious gremlin. The deck, in my opinion should not have been built as detailed. Let's have a look at the details. It is a timely to remember that whatever you put on paper people will fall over themselves to supply and build (and pass the buck back to you).



When I was asked to quote against the plans for this deck in early February 2005 I realised it did not stand a chance of being safe if there were not changes made. It was basic primary school maths. I then wrote to one the parties offering our assistance to make this deck a success. Of course no one wanted to know. Why would you listen to an old sawmiller when everyone else everyone else was happy to send truckloads of timber to site without question. So the deck got built without modification. On my next trip to Canberra in 2010 I went to inspect the deck and of course it did all that I said it would, it simply had to do. It should have been closed to the public long before my visit as the gaps were dangerous. I could find gaps of up to 18 mm easily. This is exactly the situation our Deckwood system was developed for and would not have happened if it had been followed.

By chance one of my readers told me in mid 2010 how he had an accident on that same deck when the bike he was riding dropped down between an even larger gap. Over the handlebars he went and was injured. I went to Canberra over Christmas and went to photograph the deck again to show how they had

ripped up the deck and relaid it to make it safe. I was going to write a reminder on designing your gaps properly. I was appalled to see that those responsible had not done so, only placing solid barriers in front of the deck, each with a sign "dismount area". Not good enough! If it is unsafe for a cyclists, it is definitely also unsafe for a wheelchair, it is definitely unsafe for someone with a walking stick and the potential consequences for women with high heels doesn't bear thinking about. I can't see any solution other than to re-deck the area and then some bureaucrat will say it is all timbers fault and use some other even worse solution like plastic.

I offer a service where I check plans for obvious issues like those encountered here but too few people take it up to make it worthwhile persisting with. I would have done it for free back then! My book **Deck and Boardwalk Design Essentials** has a check list in the back to work through so to avoid these problems but except for notable exceptions I can't get designers unfamiliar with the timber to even purchase even that. I should have said something in 2010 but my cynicism made me think that bureaucrats will normally only respond to lawyers. Nothing has changed to cause me to think otherwise.

As for the seats, not a good look. They need not have looked like that if they were processed differently. Refer to my **Seven Deadly Sins of Timber Design** to see how to do this. If you are serious about your commercial decks talk to Keith Smith (0403 601 030) or myself (0414 770 261).

### Canberra Bollards







When you step out of the airport at Canberra you can see an extremely attractive crash resistant bollards designed by Guida Moseley Brown Architects. They are everything a bollards should be, functional, incorporating timber and attractive. I would love to have something like this in our range. This is design at its finest.

Throughout the city I have never seen so many bollards but while they are functional and made of timber I would not say they are attractive. They are as cheap as is possible with little concession to the need to accommodate timber's weaknesses. Most did not have even a weathering cut on the top. My contacts in Canberra tell me that price rules there. You would have to look hard to find this type of very basic traffic barrier in Queensland. For our bollard options speak to Keith Smith (0403 601 030) or myself (0414 770 261).

**ADVANCED TIMBER BRIDGE MAINTENANCE, RESTORATION  
AND INSPECTION PRACTICES INTERMEDIATE CERTIFICATION COURSE**  
(Not a paid advertisement)

My friend, Dr Dan Tingley is running another timber bridge inspection course, I have done the course and it is fantastic. If you have timber bridges in your inventory, you should be attending. Here is some info on the course.

**Who Should Attend:** Bridge maintenance workers, bridge inspectors, bridge engineers and bridge asset managers.

**What will be gained by attending this seminar:** The understanding of advanced timber bridge non-destructive testing techniques, the knowledge of timber bridge maintenance to extend longevity and reduce maintenance costs; and you will receive certification as a Timber Bridge Intermediate Maintenance Restoration and Inspection Technician.

**When:** Wednesday 4th and Thursday 5th February 2015



**Location:** Cessnock Performing Arts Centre, 198 Vincent Street, Cessnock, NSW 2325  
**Instructor:** Dr. Dan Tingley Ph.D., P.Eng. (Canada), MIEAust CPEng, RPEQ (Australia)  
**Contact Details:** Timber Restoration Systems Pty Ltd. 35 Beachmere Road, Caboolture Qld 4510, Phone: 07 5428 3689, Fax: 07 5428 3745. Please contact –Robert Carroll at robert.c@timberrestorationsystems.com.au for a list of other accommodation in the area.

How good is this course? Here is a testimonial

**“Prior to attending this course I had received nothing but bad news on our timber bridges. Every inspection gave more problems than solutions, suggesting that on most bridges further inspections and major works were required, or, that they were beyond repair and should be replaced. This was coupled with, timber costs increasing rapidly and the costs of conventional replacement being unaffordable to the community. Attending this course has opened my eyes to many of the reasons for the short life span of our timber bridge components, provided an understanding of what is required to extend their lives and given hope to the restoration of timber bridges that had already been written off.”** ~ David Goodman, Manager Civil Works, Cassowary Coast Regional Council

### [Blog being written for Timber+DESIGN Magazine](#)

My tenth blog written for Timber+DESIGN web magazine is on collapsing decks. [Click here for the link.](#) Why not subscribe (it's free) - see the details below. Timber+DESIGN is a very useful magazine for those interested in timber that has been used imaginatively. .

[Click here for a link to the website of Timber+DESIGN magazine.](#)

[Blog on surface finish of decking](#)

[Blog on whether decking should be a product in its own right](#)

[Blog on whether plastic decking all its cracked up to be](#)

[Blog on H4 and H5 treatment](#)

[Blog on whether to use stainless or galvanised fasteners.](#)

[Blog on using the correct decking fastener.](#)

[Blog on timber finishes on external timber](#)

[Blog on whether to use 50 or 75 mm joist](#)

[Blog on whether to use lineal or set length decking](#)

To be on the mailing list, contact Kay Phillips [through this link.](#)

### **Bridge Quote Requests**

If there is any doubt that OSA make the best kit bridges in the country look at the [Berrinba Wetlands Project](#) . Not all bridges are equal. After encountering three bridges in one month that did not meet the Bridge Code I wrote the [May 2012 newsletter](#). Refer to it when assessing the suitability of quotes.

### **Outdoor Structures Australia**

E-Mail: [Ted@outdoorstructures.com.au](mailto:Ted@outdoorstructures.com.au)

Web:[www.outdoorstructures.com.au](http://www.outdoorstructures.com.au)

Phone: (07) 5462 4255

Fax (07) 5462 4077

Old College Road Gatton, Australia

PO Box 517 Gatton Q 4343

Australia

[Steel bridge Quotation Request Form](#)

ABN 60 152 463 020

[Timber Bridge Quotation Request Form](#)

**More information:**

If you have timber road/rail/heritage bridge issues,

we suggest you talk to:

Mr. Dan Tingley

Senior Engineer

Wood Research and Development

1760 SW 3rd Street,

Corvallis OR 97333

Office 0011 1 541 752 0188

Fax: 0011 1 541 752 0195

Cell: 04 5957 6314 or 04 28983328

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