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Why Do We Do Things That Are Just Plain Wrong?



I saw these bollards in a small country town in South East Queensland recently. I have seen it too often to shake my head in utter disbelief. The timber was brilliant, exactly what is needed but they are set in concrete! They are likely to be decayed within 20 years and then some poor council employee will be out with a jackhammer breaking up this concrete so they can install new bollards. Fortunately, for sensitive ears, the jackhammer will drown out the words that will be said about the person responsible. With suitable embedment, natural earth would have been the best option. Fine crushed rock would have been good too and if clay soil. no fines concrete could then be used.

Until recently I wondered why, invariably, sound industry guidelines based on years of observation would be ignored when it came to something as basic as installing a bollard. Then I was shown

public works drawing GS-042 (Issue F) and it all dropped into place. It is just plain wrong and ignores readily available and easily accessible industry documents. If you are going to do a project with bollards you simply need to have my CPD course on the subject so you can circumvent some costly heartache down the track. See below for details and contact Stuart Madill of Outdoor Structures Australia on 0403 385 707 to arrange a time.

How do you put a bollard in the ground? Go to the <u>Wood Solutions</u> website, register if you have not done so already, and go into Resources and then Technical Design Guides and download No. 47, Timber Bollards. I explain it there.

Restoring a Timber Bridge for 1/10th Cost of Concrete (Not a paid advertisment)



View of the bridge before restoration and upgrade

The Staatz bridge, over Three Moons Creek, ten minutes outside of Monto in Queensland was over sixty years old when it was closed by the North Burnett Regional Council. This was necessary after a level two bridge inspection condemned several members. A new concrete bridge at \$4.5M under the Bridges Renewal Program was out of the question with only 60 vehicles using it a day.

Mv dood friends at Wood Research and Development and Timber Restoration Services were asked by North Burnett to bid on a design and construct option for a timber solution. They have done a remarkable job in restoring and upgrading that five-span wooden bridge, originally built for only 7 tonnes and now rating it at 44 tonnes. What is more remarkable is that it cost only \$430K, less than 1/10th the cost of concrete yet the bridge was given a further 75-year design life. The work was completed in seven weeks compared to a projected year for concrete. This image shows how all fastenings are now either horizontal or from underneath.



Non-destructive testing of the elements using their proprietary EPHOD system (compression wave technology through the Stress Wave Timer) showed only one member, a fender was unserviceable and two piles needed major repairs. The girders and other items were remediated on-site.

<u>Read the full report here</u> where the repair, and very importantly, the philosophy behind the repairs is explained. For more information, contact Patrick Bigg of Timber Restoration Services at 0487 665 335 or <u>email here.</u>



Guidelines for Installing Galvanised Steel in Concrete

Close to where I took the image of the bollards above was a new shelter. It was very architecturally pleasing and the timber was of appropriate high quality so there was much to commend it. Unfortunately, the steel brackets that everything was mounted on did not meet the requirements of the Galvanizers Association of Australia (GAA). I had just been researching them as they relate to steel step stringers which are part of my next guide.

I have reproduced Figure 7 from page 16 of their guide which gives the recommended practice when installing a galvanised post in concrete. It should have a protective paint finish (or wrap) a minimum of 100 mm above the concrete and a minimum of 250 mm below the concrete. A slope away from the steel of at least 30 degrees is also required. It also requires a paint finish between the steel and the timber. I am pleased to say that the sacrificial paint system for both applications was a part of my guidelines for a long time. In my guide, <u>Timber Playgrounds</u>, I discuss whether it can be better to go to an appropriately painted system instead of galvanising.

This image shows structural galvanised posts that were simply embedded in concrete in a shelter opposite my home. It failed after about 10 years with the regular hosing down of the slab. Corrosion will get you in the end if you do not take positive steps to minimise it. The durability guide can be downloaded from the <u>GAA</u> website.



Progress With External Timber Step Guide

I have completed the first draft of 35 pages of my book on timber stairs. The image below is a classic case of confusing an F rating with durability. This set of stairs could have caused serious injury and explains why such a book is needed.

When I was writing my other guides, e.g., <u>Timber Handrails</u> I had an embarrassment of riches when it came to images. Unfortunately, I am light on when it comes to steps. I really need a few more images. Can you help with images that show:

- Rusted steel stringer, especially at groundline,
- Good and bad case histories,
- Building a traditional set of steps,
- Decay in pine steps, and
- Treads with end, say 150 mm, painted.



Index To Past Issues

If you are a new reader or just want to find details on a particular topic such as 150x150 mm posts, here is a link to an index of articles back to 2015.

New CPD Course - Timber Bollards



I am putting the finishing touches to a new CPD course, *Timber Bollards*. The course will look at bollards in general and then look at issues with the Institute of Public Works drawing which does not follow industry guidelines such as Wood Solutions' excellent publication on bollards. Ring Stuart Madill for a booking on

0403 385 707. Outside of Queensland contact BCRC.

Signup for One of my Eleven CPD Courses



Learn from my four decades of experience with these CPD training sessions, some of which are available in eClassroom.

Topic 1	Timber Preservation	
Topic 2	Hardwood Grading	
Topic 3	Timber Decks - Designing for Durability	
Topic 4	Utilising Small Diameter Hardwood	
Topic 5	The Seven Deadly Sins of Timber Design	eClassroom link
Topic 6	Timber Joints	
Topic 7	Architectural Timber Battens	eClassroom link
Topic 8	Timber 101	eClassroom link
Topic 9	Boardwalk Design (recommend delivered with Timber 101)	
Topic 10	Timber Handrail Design	
Topic 11	Timber Bollards	

Click here to learn more about these courses

Are you aware that <u>Wilson Timbers/Outdoor Structures</u>, who I am affiliated with and are suppliers of quality timber, will have me come to your office (in person or remotely) and deliver one or two of my CPD sessions for free? The only condition for in-person presentations is that, with travel, we can do it in a day from Brisbane in Queensland. <u>Contact Stuart Madill by email to arrange a time</u> or call his mobile 0403 385 707.

Full-Day Courses



Don't embark on any major footbridge or coastal deck project before you do my full-day courses. These are serious courses run through <u>BCRC</u>, the durability experts, that are unmatched in the value you will extract from them by delivering expensive infrastructure that ages gracefully and with little maintenance. They both start by going through a design checklist and explaining, line by line, why you must attend to that point. They then look at a number of case studies, showing good and bad practice.

<u>Click here for the footbridge course brochure</u> <u>Click here for the coastal decks brochure</u>

Call me to discuss your training needs. These courses, which are eligible for CPD points, will give you an incredible understanding of good timber use. Call 0414 770 261 or <u>email me</u>.



