



OUTDOOR STRUCTURES

Outlasts and outperforms

October 2012 Newsletter

Written by Ted Stubbersfield for

Infrastrucxion Pty Ltd

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Dear Reader

URGENT: Reader Requires an Old Pigtail or Eye Bolt

One of our readers requires a 20 year old (approx,) 12 mm Australian made pig tail or eye bolt as used in swing sets. **This is needed for forensic testing to compare against a failed imported product.** If any of my readers can help please contact me and I will direct you to the person who needs it. It will make interesting reading in future newsletters. **If you are designing/building play grounds this concerns you also.**

Timber Design is Dead

Recently, I was talking to my friend Lindsay Toppenberg of Naturform. He was saying how timber design used to be called a *dark art* but it really should be called a *lost art*. Now he would be the first to admit that there are notable exceptions and they would all readers of my newsletter. Lindsay is a wise man, in my opinion, as he regularly rings me to ask about timber design matters. I am only a phone call or an email away. Unfortunately, unlike the old days, there may be a modest charge.

Coroners Report Released on Deck Fatality at Yeppoon

This September, the Rockhampton Coroner issued her findings into the death of baby Isabella on May 29, 2011. She died as a result of decay in boards in a 15 year old deck. Her report makes heartbreaking reading. The heart of any feeling person must go out to this family who have had to suffer such a deep and unnecessary loss. It is a reminder to all professionals to design to a specification, not a price. What follows is an extract from the Coroners report but adjusted not to reveal identities.

Isabella died after an accidental fall from her fathers arms over the edge of the front verandah of her familys rented home at Yeppoon. Her father lost hold of Isabella when he lost his balance as his foot

fell through a decking board on the front verandah. The board was significantly decayed and is likely to have had less than 10% of its new strength properties at this time. It is likely the failure was initiated by the board cracking under her fathers weight shortly before he stepped out lightly with his right foot on the board to show its location to Isabellas mother.

The parents had identified the presence of wood rot in the front verandah and reported this to the letting agents on at least four occasions prior to Isabellas death. The home owner was aware of the identification of wood rot in the front verandah prior to Isabellas death and some repairs had been made before the incident. Neither the tenants nor the owner had any knowledge of wood rot and did not properly understand the potential safety hazard it posed.

The owner engaged a close friend who was a trade qualified but unlicensed carpenter, to carry out repairs of defects identified in a prepurchase inspection conducted on 8 March 2010. These repairs included replacing five boards on the front verandah. The builder failed to conduct a sufficiently thorough investigation of the condition of the front verandah when carrying out these repairs in April and May 2010 and could and should have identified the extent to which the failed board and those adjacent to it had deteriorated.

The real estate agency practices *(they did not read reports)* and a lack of training about how to properly inspect a deck for property management purposes combined to prevent the property managers from identifying the potential safety hazard posed by wood rot as an emergency repair and from seeking appropriate and timely instructions from the owner for further independent expert inspection of the front verandah. There were sufficient visual indicators on the underside of the verandah to cause a person with building qualifications, skills and experience to have significant concerns about the extent of wood decay and termite damage.

Among the Coroners 13 recommendations was one that decks on rental homes be inspected after 10 years and every 3 years thereafter.

For years I have been saying, if you cut corners, it will always work its way to the surface. Unfortunately, the report does not say anything about building practices. I would have loved to know if timbers with the highest decay and termite resistance were used. I suspect not. Archicentre says that there are 8000 life threatening decks in Australia. It is so unnecessary. What hope is there for the industry when a builder cannot identify obvious fungal attack.

Best practice in deck design can be found in our LifePlus Decking Guide which can be purchased for \$22.00. Contact me for a copy. See our newsletter from Feb 2010 on decks that kill.

Links

Coroners report

http://www.courts.qld.gov.au/_data/assets/pdf_file/0019/163027/cif-diefenbach-iw-20120919.pdf

A guideline for the use, inspection and maintenance of decks, balconies and windows

<http://www.hpw.qld.gov.au/SiteCollectionDocuments/deck-balcony-guideline.pdf>

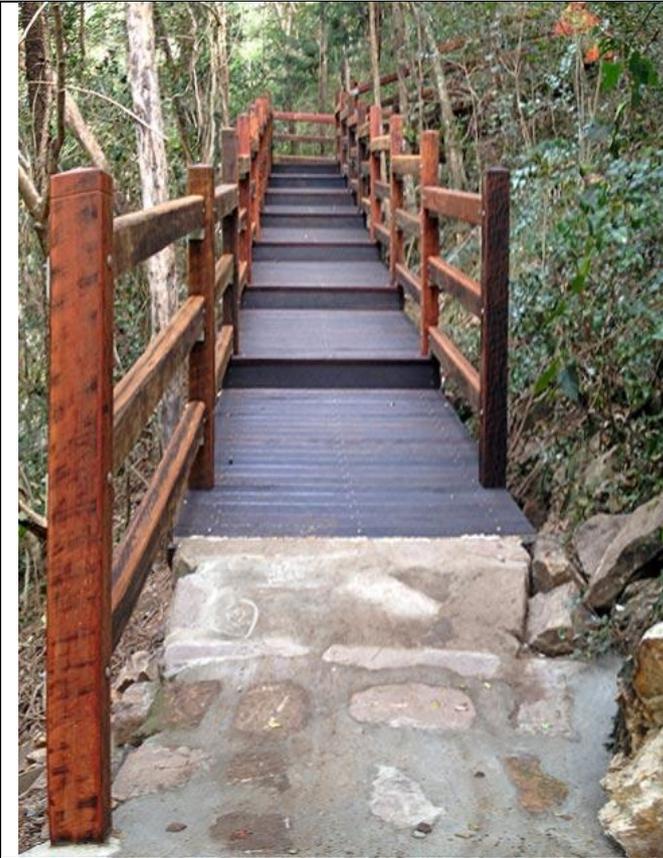
Decks that Kill (Feb 2010 newsletter)

http://www.outdoorstructures.com.au/pdf/osa_newsletter_02_10.pdf

Archicentre warning on decks

<http://industry.newsarticles.net.au/Architecture/Architects-Warn-On-Deadly-Decks-As-People-Gather-For-Xmas-And-New-Year.htm>

Boardwalk at Mt Coot Tha



(Sold at a similar time to TWP trails but installed at a different location)

Asset Owner: Brisbane City Council
Engineer: Jones Nicholson Pty Ltd
Builder: TWP Trails
Boardwalk systems: Infrastrucxion Pty Ltd.

The problem with boardwalk projects is that it is almost a case of if you have seen one you have seen them all. But the boardwalk at Mt Coot Tha is different in that it has steps. The site is sufficiently remote that they could be incorporated instead of utilising a 1 in 14 ramp (the path is not accessible by wheel chairs). Ted Stubbersfield was able to help Bill Van Haren of TWP trails initially by providing a non certified drawing of an arrangement that should have worked based on the span tables in our boardwalk design guide and incorporating simple modifications to our standard layouts. We supplied this as a CAD drawing to Bill who

forwarded it his engineers, Jones Nicholson, who checked my work, made changes as necessary and designed the footings. The final certified drawings were released on his titleblock. We think it is a good outcome for a difficult site.

Bill said *The assistance from Outdoor Structures was invaluable both in the design phase and supply of quality material for the boardwalk. Because of the terrain it was an interesting and challenging job with the narrow and remote location making it necessary to carry in by hand much of the material. We are very proud of the finished boardwalk and it blends well with the surrounding landscape. We thank Outdoor Structures for their assistance in the design & supply stages bring about an excellent outcome in this project.*

At about the same time, TWP also required a swale drain bridge for the Gilston Mountain bike track for Gold Coast Mountain Bike Club. Again we prepared an arrangement for certification. This time the bridge was supplied unassembled as the remote site would not allow it to be delivered assembled. The footings designed by Jones Nicholson Pty Ltd followed our recommendations.

Links

The footings followed our recommendations found at http://www.outdoorstructures.com.au/bridges_6.php

Our technical guides can be purchased by sending an email from http://www.outdoorstructures.com.au/timber_guides.php

Date Claimer Level 1 and 2 Bridge Inspection Course (Not a paid Advertisement)



EPHOD (trade mark) Electronic Pulse Highlight and Outline Diagnostic testing of failed stringer in Northern Queensland to establish the reading obtained in microseconds (ms) across a known defect. The girder defects were not visually apparent from below when inspected prior to the girder failing. Further, a sounding bore had been utilized in this log to confirm it was in satisfactory condition a few weeks before it failed. The annulus thickness at the point of bore sounding was over 100 mm. Clearly sounding bores are not satisfactory inspection methods for old timber bridges.

Dan Tingley of Timber restoration Systems will be running level 1 and 2 bridge inspection courses in coming months. If you inspect/maintain timber bridges these courses are a must.

Level 1 Course will be held at Surfers Paradise from November 21st and 22nd. Hopefully I will be there.

Level 2 Course will be held at the DPI Forestry during the week starting December 3. This course requires attendees to make repairs and then test them so the laboratory that the Forestry Department runs at Salisbury will be utilised.

Download the course applications from

http://www.timberrestorationsystems.com.au/training_courses.php

or contact Timber Restoration Systems Pty Ltd, Ph: (03) 5792 1099, fax: (03) 5799 0549

Consultancy Services by Ted Stubbersfield

In our area of expertise, often it is the art that proves more important than the science. Weather exposed structures normally do not fail because of incorrect member size calculations, but because a myriad of small points of detail are not taken care of.

As a timber design assistant we offer:

The provision of high quality technical guides on timber design.

The review of professional drawings to identify potential timber design issues that may impact service life

The preparation of proposed AutoCAD cross sections of structures

To be a sounding board for ideas

Lectures and presentations

The assessment of best practice in construction.

As a grader I can assist with grading for confirmation to a nominated grade but more importantly I can assess whether timber is graded to an appropriate grade. Often these are not the same thing.

Contact me on 07 54625532 or by email to discuss how I can be of assistance to your organisation

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.

[Steel bridge Quotation Request Form](#)

[Timber Bridge Quotation Request Form](#)

More information:

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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,

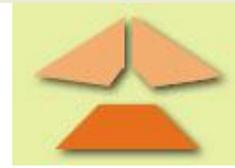
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Regards

[Ted Stubbersfield](#)

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Please advise if you wish to opt out of our email updates.