



CONSERVING HISTORIC TIMBER BRIDGES

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UNDERSTANDING TIMBER

Timber is a successful traditional construction material, now almost forgotten, misunderstood and neglected for bridge construction. Favourably selected, cut, seasoned, treated and placed, timber will last indefinitely. Some species are more durable than others, and well seasoned timber is always more durable than unseasoned timber. All bridge repairs should use appropriate materials correctly selected, cut, seasoned, treated, prepared, protected and fastened. Large sections of high grade timber are sometimes required, and if we are to maintain historic timber structures, we need to plan with long lead times. Mills need to source good logs and allow for appropriate seasoning and milling of the timber.

REPAIR AND MAINTENANCE

The life of historic timber bridges can be prolonged almost indefinitely using sound repair, maintenance, and reconstruction procedures. While design and maintenance skills are becoming more specialised, they are still available. Some of the major techniques for preserving and prolonging the life of timber bridges include:



- Protection from damage from water penetration, fungi and insects. Traditional use of moisture barriers, such as tar papers, or malthoid, to prevent water penetration, particularly over major members, appears to have considerably improved the life of bridges. Decks are especially important. New waterproofing products, or in some cases new decks of concrete and bitumen, may be appropriate;
- Bolting of timber components with no or few exposed drilled holes. Spiking of timber members instead of bolting has led to splitting of deck and structural timbers, water penetration, movement and more

rapid deterioration of connected timber members;

- Using modern chemical treatments (eg polesaver) to prolong the life of existing or poorer grade timber;
- Protection from overloading, general wear and tear and accidental damage by vehicles is also needed to reduce risks both to users and the structure;
- Reducing the risks to the structure from fire and flood damage, by managing surrounding vegetation, maintaining the waterways and removing built-up flood debris;
- Removing built-up dirt, leaf litter and weeds from the decks and approaches;

TRAFFIC MANAGEMENT AND BRIDGE DESIGN

It is better to keep an historic timber bridge in use, rather than as a 'saved' relic requiring special funding to prevent its decay and ruin. There is also an economic incentive for this - it is often cheaper to continue to repair and maintain rather than replace all of our timber bridges with new reinforced concrete structures. Solutions need to be found to problems created by new traffic and safety standards. Load limits are rising to exceed the strength of many bridges. Traffic network planning could ensure that the higher load limits and wider vehicles are restricted to principal roads wherever possible. Bridges can be strengthened by adding steel beams, splicing new timber onto rotting piles, and adding concrete sleeves onto the vulnerable wet-dry zones of piles. Alternatives to the ugly and intrusive 'Armco' steel barrier railings are available (eg, cable barriers as used at Halls Gap bridge), and other solutions need to be designed.



'REDUNDANT" BRIDGES

Historic out-of-service bridges are vulnerable to vandalism and pilfering of timbers and even stone abutments.

Many bridges can be converted for recreation or tourism purposes, and maintained at the lighter levels required for walking, cycling or equestrian paths. For bridges of identified heritage significance, at least a brief interim Conservation Policy and Plan should be prepared before any works are undertaken. This helps to identify why the structure is important, what elements in that structure reflect this significance and how the structure can be managed and maintained to reflect those elements and to protect the structure.

Many disused and derelict bridges are impressive ruins in the landscape. Some should simply be appreciated as cultural icons, expressing historical uses and constructional techniques, and a sense of the passage of time. Many moss covered ruinous timber tramway bridges are an integral part of our network of forest walking tracks. Some disused railway bridges have the same potential.



IMPROVING INTERPRETATION

Load limit and speed limit signs help reduce the 'wear and tear' on historic structures, but carry negative connotations. They could be complemented with 'Historic Bridge' signs, parking bays, viewing platforms and interpretive signage. So perhaps the next time you see a load limit or speed limit on a bridge, stop and have a good look - the limit signs might be protecting an important historic structure worthy of your appreciation.

Images

Stewarts Bridge, Goulbourn River, Echuca (1878-9). Photograph: Don Chambers.
Martins Bridge, Morses Creek, Wandiligong. Photograph: Ken Young
Noojee Bridge. Photograph: Chris Smith

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(This report was adapted from Ken McInne's article for Trustnews, August 1997, p.19)

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