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THE ‘ART’ OF USING TIMBER EXTERNALLY

Eastern Australia, with its spotted gum and ironbark, is blessed with some of the most durable hardwoods on the planet, yet increasingly there is resistance to the use of timber, particularly in New South Wales and Victoria. Outdoor construction expert Ted Stubbersfield offers some explanations and solutions.

Every discipline is comprised of its science and its art. When it comes to external weather-exposed timber structures, the art is definitely more important than the science.

If an engineer miscalculates the size of a joist and uses 125 mm x 75 mm instead of 150 mm x 75 mm, should the structure ever reach the design load, it will simply deflect more than was intended. But if the engineer nominates a 50 mm member with the same properties as a 75 mm joist of the correct size, the structure will fail prematurely.

This is because equally, screws inserted in a straight line will invariably split the joist and allow water to enter, so promoting decay.

While it is unreasonable to expect a natural product like wood to perform precisely the same way every time, the market should expect certain minimum standards.

The introduction of ‘F’ rated timber to Australia emphasises strength rather than durability – even in weather-exposed situations. Critical properties such as durability, stability, shrinkage and appearance are ignored in favour of a single F rating, which designates no more than the strength on the day of milling, often referring to a lower grade of timber.

Solution: Go for proven and readily available species (my choice would be a mix of spotted gum and ironbark). For maximum life decking, the face you need is that means something like AS2082 Structural Grade 1, which in spotted gum is F22. By designing for durability, you automatically take care of strength and may also be able to specify smaller sizes.

Timber treatment

Treatment is not the total answer to ensuring durable external structures. And not everything is as it seems. A piece of timber with no sapwood and in a low durability 2 in-ground species can have the outside coloured with preservative chemical and be stamped H5. It is misleading to say that such timber is ‘treated’, and that it will give performance similar to a piece of untreated ironbark with little sapwood. Treatment is not going to stop the elements further deteriorating natural features such as unsound knots.

Solution: Treatment should not be instead of, but parallel with careful species and grade selection. Do not over-treat by introducing CCA where it is not needed, use natural rounds for in-ground contact [they have an envelope treatment] and please don’t set treated hardwood in concrete.

Non-structural

A number of mills are now producing landscaping timbers – often a mix of species meeting no structural grade and the total specification being something like “one good face, one good edge”. Because it is available in the same dimensions as structural timber, landscaping contractors buying on price rather than specification cannot be sure that the wood is fit for purpose. And when failure occurs, timber is the loser.

Solution: Beware of generic terms such as ‘sleepers’. It is important to be able to recognise conforming and non-conforming product, and those who substitute non-conforming product should be called to make good.

When in doubt on anything to do with the outdoor application of timber, the best advice of all is: asking questions of specialists. You will be surprised how easy it is to avoid known problems and to obtain good information.

(Article contributed by Ted Stubbersfield, director of Outdoor Structures Australia, www.outdoorstructures.com.au)

ABOVE Treatment goes parallel with careful species and grade selection (PHOTOGRAPHY: INWOOD IMAGES)