

## British Columbia Timber - An Architect's Perspective

By Matthew Hoad RIBA AIWS

In December last year I was asked to meet Mr Richard McRae (an Independent Forestry Consultant) at the Canadian High Commission to discuss UK architects' perceptions about using British Columbia (BC) timber. This article briefly outlines some of the key issues discussed.

The diverse landscape of BC makes it a place of extremes from frozen snow-capped mountains to lush temperate rainforest. Climatic conditions and geography have allowed some very special species to evolve. The principle export timbers to the UK are: -

Western red cedar (*Thuja plicata*) grows up to 60m tall western coastal hemlock (*Tsuga heterophylla*) up to 50m tall Douglas fir (*Pseudotsuga menziesii*) up to 85m tall lodge pole pine (*Pinus contorta* var. *latifolia*) tall and slender



Sunshine Coast temperate rainforest. M. Hoad 2002.

### Forests of British Columbia

I visited the Canadian forests with a British delegation in July 2002 as the RIBA representative and was able to see first hand the management of their forests. Over the last century some irresponsible logging practices have drawn attention to the sustainability of western red cedar (WRC). For an architect who wants to use this and other timbers this can present a dilemma.

During the visit different areas of forest which had been logged, replanted and regenerated were inspected. Exemplary forestry practice included selective logging, leaving wildlife trees, encouraging natural regeneration and undertaking remedial work to rectify older extraction damage. New trees could be seen covering hill sides from clear cut logging 30 or 40 years ago which modern 'natural' disturbance pattern forestry has now predominantly replaced balancing economics with environmental responsibility.



Sunshine Coast Forest District - Lighter hues of green indicate new tree growth; M. Hoad 2002.



Sunshine Coast Forest District - Riparian management area; M. Hoad 2002.

A forester commented; -

"15 or 20 years ago there wasn't the understanding of the way nature works in the forest, or the damage being done by logging. Now we are working with nature instead of against it and forestry practice is generally very good".

This forester, who had spent his entire life in the forests was as sincere as any hardened environmentalist and with 94% of the forests in publicly ownership it was evident that huge advances have been in sustainable forestry. What amazed me about the landscape was the sheer scale of the operation which makes the UK's look like a Sunday afternoons gardening.



A member of the British delegation in front of an old stump from logging perhaps 80 to 100 years ago; M. Hoad 2002.

The opportunities for using BC timber is vast and by understanding what is growing in the forest an architect can maximise its construction potential, to help avoid waste both in factory and forest.

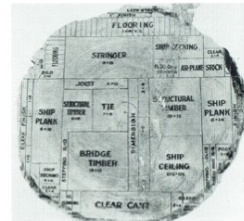


An unusual use of whole logs in BC; M. Hoad 2002.

Clause 13

'No defects what-so-ever' - is a ridiculous specification clause which occurs all too often! While the very best quality timber comes from the older trees, it should be remembered that for most applications it is completely unnecessary. Clear grade WRC for example is often used for cladding high up on a building where knots cannot be seen and a lesser grade might be better employed. Whilst I support the use of WRC, the use of high-grade timber for lower-grade applications cannot be justified even if it is certified.

Standardised specifications with catch-all liability clauses may be useful for mechanical or moisture related issues but may be un-realistic for visual requirements. While the myriad clauses now fill volumes the timber is in many cases doing the job it always used to.



Maximum use was made of this huge log, today it should now only be used for high grade applications; Wood 1937

Performance specification identifying an 'intent' are replacing the traditional document and usually from the point of an architect this is 'visual' (colour, grain, finish and 'defects') and perhaps 'sustainability' and 'durability'. Reference samples are often referred to in these specifications and whilst useful can lead to unrealistic expectations as they are often small in area. A contractor under pressure from an unachievable specification will just get the timber from another source, or worse still could use another material in its place.

Innovation in timber design is all about transcending fashion and challenging preconceptions. An example is the New Jubilee Campus cladding where an integrated design team which included the joinery specialist was essential for the development of a high performance system.

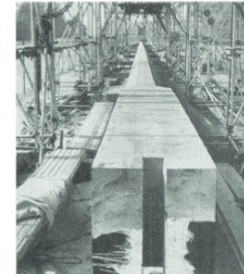


WRC cladding (now turned silver grey) for the New Jubilee Campus, Nottingham University (opened 1999) by Michael Hopkins and Partners; MHP 1999.

One of the finest examples of the use of Douglas fir in the UK is the flagpole at Kew gardens cut from a single tree 275 feet long and 270 years old in 1912'. The tree was worked to a length of 225 feet from an original log weight of 37 tons. The natural strength and durability of Douglas fir is ideal for this function and is a good example to architects and engineers who could be using more of the raw tree without cutting it into small pieces!

### Form Follows Forestry

The problem of specifying timber from BC is that you have a limited idea of how the forest are managed or certified. The main Canadian certification standards are:-  
CSA - Canadian Standards Association  
FSC - Forest Stewardship Council  
SFI - Sustainable Forestry Initiative



Flagstaff for Kew, Wood magazine, p.286, December 1959

BC timber will generally carry one or more of these certification standards but this may depend on species and grade required. Research is essential to identify potential importers and to check if a chain of custody certificate is available. By including this information in a specification the contractor will be obligated to get it right!

### Conclusion

The role of the architect is central to ensuring that BC timber is used as an integrated part of the building fabric and is clearly expressed and not hidden where a lesser timber might suffice. The tree has a second chance to live and by utilising more of the tree and by avoiding over-processing it can be used to its very best advantage.

BC timber is I believe unique in quality and character and should be employed to its full potential whether structurally, aesthetically or for its durability depending on species. Intelligent design will help ensure that this superb eco-material is an indefinitely renewable resource.



Old growth Forest on the Skwawka River; M. Hoad 2002.