

5. THE TIMBER FRAME

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The timber frame is probably the most fundamental element of Australia building construction in both the nineteenth and the twentieth centuries, and yet it is one of the hardest to document in any reliable way. The source of what I here call 'eaves joist construction' remains largely a mystery. So does the date and the manner of arrival of what we now call the 'stud frame', and its relationship to the balloon frame of the United States. I have previously argued against the idea that the stud frame came from America, only to be confronted by Peter Bell, who made use of my work, was then only reluctantly persuaded to my view, and finally claimed the conclusion as his own discovery. I recount the substance of that debate below so far as necessary. Whilst I reprehend Bell's ungraciousness, I take the opportunity at this point to say that his work has been very valuable, and also to concede that my own arguments have been considerably tightened up as a result of the confrontation.

There has been an even more satisfactory outcome in relation to the exposed frame so common in Queensland. In 1981 I asserted boldly (but on sufficient general grounds) that this distinctive feature was an outgrowth of the ecclesiological movement as expressed in various colonial churches, and especially those of the 'Selwyn school' in New Zealand. This seems to have come upon Queenslanders like a bolt from the blue. Bell tended to dismiss the idea, and particularly to avoid any reference to my own name: 'It is tempting to look for antecedents to the southern frame in romantic European imitations of half-timbering ...'.¹ Sumner acknowledged the idea credited to me,² but remained surprisingly equivocal about its significance. Watson immediately took up the idea,³ though he gave me no credit for it, and subsequently established unequivocally that Richard Suter was the critical figure in introducing the system to Queensland, and was rooted in

¹ Peter Bell. 'Square Wooden Boxes', *Historic Environment*, VI, 2 & 3 (1988), p 35.

² Ray Sumner, 'The Queensland Style', in Robert Irving [ed], *The History and Design of the Australian House* (OUP, Melbourne 1985), p 300 & note 19, p 323.

³ Donald Watson, 'The Queensland House' (typescript report, Brisbane 1981), pp 5.5-5.6.

ecclesiological Cambridge and undoubtedly cognisant of developments in New Zealand.

In dealing with timber construction one must bear in mind that carpentry is one of the strongest craft traditions, and the classic texts like Tredgold's,⁴ which deal extensively with stereometry and the representation of the classical orders, are of little help in understanding normal framing practice. In surviving examples the frame itself is often completely clad and concealed from view, and the lower parts, which can be critical to our understanding, have often rotted away. Thus physical investigation is as difficult as documentary research. The case has been made worse by the attitudes of architects and architectural historians. Moulded by European prejudices, they have tended instinctively to regard timber buildings as second rate, and to pay less attention to them than to those of brick and stone. Of the fifty plates in Hardy Wilson's pioneering *Old Colonial Architecture in New South Wales and Tasmania*,⁵ not one showed a timber building.

An aspect of timber construction which must be mentioned here, because it belongs nowhere else, is timber block flooring. This was commonly used in stables to provide comfortable standing for the horses at the same time as effectively draining off urine. Blocks of redgum 250 x 259 x 200 mm were laid in the police stables at Maldon in 1861,⁶ while at 'Gulf Station', Yarra Glen, the stable floor was of cylindrical sections of tree trunk of varying diameter. The stable at 'Lanyon', ACT, which may date from as early as the 1840s, has a hexagonal block floor, and I am informed that there is another at 'Gidley'. At Lanyon the blocks differ in size, which shows that they have been cut direct from the trunks. At 'Tarrawatta', Angaston, South Australia, the wool room of the woolshed, claimed to have been built in 1840, has a beautifully regular floor of hexagonal bluegum blocks about 900 mm in diameter.⁷ Wood blocks were sometimes used in milking bails for similar reasons, and in one instance in the 1880s they were used to floor the kitchen of a cottage at Innamincka, South Australia.⁸

As will appear below, imported timbers were used extensively in the nineteenth century, especially near the coast, for somewhat mixed reasons. In some cases their physical properties were better than those of local types, and in other cases their appearance was preferred, but often it can have been little more than conservatism. For example 'dry oak wedges' were specified for the herringbone strutting of a Melbourne house of 1854,⁹ though it is inconceivable that some local timber could not have performed the same function equally well. The qualities of Australian timbers were confusing to

⁴ Thomas Tredgold, *Elementary Principles of Carpentry* (1st ed, London 1820).

⁵ W H Wilson, *Old Colonial Architecture in New South Wales and Tasmania* (Sydney 1924).

⁶ Miles Lewis, *The Essential Maldon* (Melbourne 1983), p 24.

⁷ Harry Sowden, *Australian Woolsheds* (Cassell Australia, North Melbourne 1972), pp 210-211.

⁸ H M Tolcher, *Innamincka* (Innamincka [South Australia] 1990), p 10.

⁹ Russell, Watts & Pritchard, 'Specifications for ... Dwelling houses ... at Elwood, for Joseph Docker, 13 December 1854' (Docker Papers, Manuscripts Collection, SLV).

early settlers: timbers that appeared sound were not. Timbers that appeared irregular and defective were in fact extremely durable. And most good timbers were very difficult to cut with British tools. Moreover, it was more than a century before something approaching a common nomenclature was established for Australian species, so that a merchant in one colony could be sure what he would get from a supplier in another. By the 1920s it was being argued that there would be a worldwide shortage of timber, especially softwood, within the next twenty years. This argument was used by a Melbourne-based company, New Zealand Pine Lands, to encourage Victorians to invest in their *Pinus insignia* plantations on Matakana Island, New Zealand.¹⁰

The first scientific testing of the strengths of Australian timbers took place in Van Diemen's Land in 1851, at a time before many had been properly identified and named.¹¹ In 1887 Professor W H Warren of Sydney published his *Strength and Elasticity of New South Wales Timbers*,¹² but it was the publication of his *Australian Timbers*¹³ in 1892 that set a new threshold in the scientific testing of timbers and presentation of engineering data, even though it was very much biased towards New South Welsh species.

In 1900 James Mann published his *Australian Timber*,¹⁴ which was somewhat more national in scope, and in which he gave strength data on fifty of the best known Australian engineering timbers, derived both from his own tests and from others. His presentation was somewhat novel in that it was largely by means of graphs, which gave a much clearer overall picture. Mann acknowledged his debt to his predecessors, especially Ferdinand von Mueller, former Victorian government botanist, W H Maiden, author of *Useful Native Plants of Australia*, and G S Perrin, author of *Australian Timber*. A much expanded second edition of Mann appeared in 1921, and a number of more detailed studies were published in the various states, such as the New South Wales Forestry Commission's *Principal Timbers of New South Wales*,¹⁵ *Notes on the Timbers of Western Australia*¹⁶ in 1908, R W Chapman's *Strength of South Australian Timbers*¹⁷ of 1922 and, notably, E H F Swain's *Timbers and Forest Products of Queensland*, of 1928.¹⁸

¹⁰ New Zealand Pinelands Proprietary Limited *Pines for Profit* (New Zealand Pinelands, Melbourne, no date [c 1926]), passim.

¹¹ Victorian Intercolonial Exhibition, 1875, *Official Catalogue of Exhibits* (Melbourne 1875), quoting James Mitchell, in the *Proceedings of the Royal Society of Van Diemen's Land*, 1851. For subsequent testing of Australian timbers see Lewis, 'Victorian Building', I, pp 157-161.

¹² W H Warren, *The Strength and Elasticity of New South Wales Timbers of Commercial Value* (Sydney 1887).

¹³ Warren, *Australian Timbers*, op cit.

¹⁴ James Mann, *Australian Timber* (Melbourne 1900).

¹⁵ *The Principal Timbers of New South Wales and their Uses* (4th ed, Sydney 1921).

¹⁶ *Notes on the Timbers of Western Australia* (Perth 1908).

¹⁷ R W Chapman, *The Strength of South Australian Timbers* (Adelaide 1922).

¹⁸ E H F Swain, *Timbers and Forest Products of Queensland* (Brisbane 1928).