

7. CEMENT & CONCRETE

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What follows is, except for the material on fireproof flooring, essentially an updated version of the relevant parts of my *Two Hundred Years of Concrete in Australia*, which I had always conceived largely as a dry run for this chapter.¹ I doubt that any apology is called for, as that book was addressed to concrete *aficionados*, and has therefore had but limited general circulation. What may call for an explanation here is the basis upon which topics have been chosen for treatment.

It will probably be accepted that we should not be concerned here with the more advanced engineering achievements discussed in the previous book: but it might well be asked why we should be concerned at all with so sophisticated a material as reinforced concrete. The fact is that concrete generally, first of all, and then reinforced concrete in particular, were taken up surprisingly quickly in the later nineteenth and the earlier twentieth century respectively - not by the home handyman, admittedly, but by the innovative small builder. It would be a serious omission if chapter were not to give some account of the various house building systems which resulted, for they are amongst the most interesting and least understood aspects of building in Australia. They are very much associated with particular localities and individuals, and affected by local conditions such as the availability and cost of alternative materials. It is also true that from the turn of the century concrete, both plain and reinforced, was being promoted as a material useful to farmers. Directions were given in agricultural handbooks and settlers' guides for the building of concrete fences, tanks and outbuildings, though much less so in Western Australia than in the east.² Though most farm structures of this sort are more or less undatable, it would seem that these publications were influential.

At a later date, from the 1920s, concrete generates a surprising amount of literature. This is of course largely the result of its deliberate promotion by individual companies and by what

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- 1 Miles Lewis, *Two Hundred Years of Concrete in Australia* (North Sydney 1988). When I was engaged to edit this book, and to write the major part of it, I accepted on the basis that by doing so I would be preparing a portion of the present work, and my agreement with the Concrete Institute of Australia was that I retained the right to re-use the material.
 - 2 Compare P Whicken, *Settlers' Handy Pamphlet* (Perth 1914), with K Synnott [ed], *The Farmer's Handbook* (5th ed, Sydney 1934), §§ III, XI, XIV.

was at first the Australian Cement Manufacturers' Association, then the Cement and Concrete Association of Australia.³ But that does not make it less interesting from our present viewpoint. Indeed the extent to which this promotional matter was able to penetrate legitimate publications like the *Australian Home Beautiful*, was far greater than for most other building materials, though the brick manufacturers also secured some good publicity. It was probably that the manufacturers were individually larger, and more united by way of their association, whilst the reading public accepted that concrete, unlike timber or brick, was a novel material about which they really needed guidance.

It is interesting, though marginal to our present concerns, that concrete has now become a conservation issue, in the sense both that concrete structures are beginning to be seen as worth preserving, and that the means of doing so are open to debate.⁴ The embarrassing extent to which concrete engineering structures have decayed has led to the development overseas of techniques for protecting them from new risks, arresting existing deterioration, and even reinstating lost strength. But these are techniques devised for functional reasons, to keep the structures operative, and are not usually acceptable for conserving them as authentic historic artefacts. Similar issues which have also arisen in relation to glazed terra cotta cladding materials, and will increasingly arise for other post industrial materials.

3 For these bodies see Lewis, *Two Hundred Years*, p 129.

4 See, for example, Andrew Powter, 'History, Deterioration, and Repair of Cement and Concrete in Nineteenth Century Fortifications', *APT Bulletin*, X, 3 (1978), pp 59 ff.