

**THE PUZZLE OF ARCHITECTURE.** by Robin Boyd.  
Melbourne University Press, 1965. 188 pp., ill., index.  
(Price: £A 3/5/0 or \$A 6.50).

Australia has produced one architectural critic of international standing. Like Pevsner and Richards, Boyd writes with a clarity which makes his books eminently readable; unlike them, he is also a practising architect. One therefore starts with high hopes, which indeed are fulfilled in the first three parts. The author analyses the problem of modern architecture, the revolutionary phase of functional architecture, and the counter-revolution against functionalism in the nineteen-fifties. His criticism of the giants of modern architecture is impartial. Wright, Mendelsohn, Gropius, Corbusier, Mies, Johnson and Kahn all have their weaknesses exposed, and those who have been irritated by their work will read the analyses with enjoyment. Although the shafts are barbed, most of them hit the target by fair means. Boyd nevertheless fails to solve the *Puzzle of Architecture*, because he does not provide an answer, as he did in his books *Australia's Home* and *The Australian Ugliness*.

### **Home and The Australian Ugliness.**

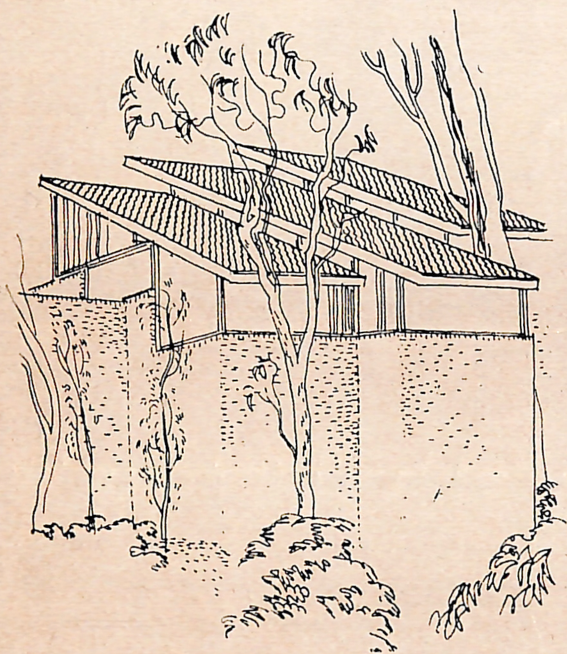
The author does not see the future architect as becoming more scientific; on the contrary, in an age of increasing technical specialisation he can survive only as a creative artist. Boyd recognises the importance of structure, but says little about the environmental design problems, and the mechanical and electrical services. He does not mention

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the possibility of a scientific analysis of architectural planning problems. This solution seems outdated, because structure, with a few notable exceptions like the Sydney Opera House, today rarely causes real trouble; the co-operation between the architect and his mechanical, electrical and acoustic consultants is far from satisfactory, however, and the cost of the building services is still rising. It is doubtful if any technical consultant can solve the architect's planning problems, and yet many of these are capable of scientific analysis, if one interprets "scientific"



House near Sydney by Ken Woolley

as including the techniques of social science. The final part "Solutions" is therefore unlikely to provide the blueprint for an important architectural profession.

There are also minor faults. The author's argument includes the proposition that "shell concrete had hardly been used in building (before 1950) apart from a simple parabolic vault of concrete in Maillart's Cement Hall in the Swiss National Exhibition Zurich in 1939". This ignores a vast amount of fine work designed by Dischinger, Finsterwalder, Torroia and Nervi in the late twenties and in the thirties. Elsewhere suspension structures are credited to Nowicki and Otto, without reference to Sarger who designed most of the early buildings. LeCorbusier's Philips Pavilion at the Brussels World Fair of 1958 is described as consisting of metallic hyperbolic paraboloids; actually it was assembled from concrete slabs by external prestressing.

However, these may be accepted as minor faults in a book which covers such a large and important problem. Most architects and structural engineers will read it with pleasure, although some will draw different conclusions.

**THIN SHELL THEORY.** by V. V. Novozhilov. Translated from the Second Russian Edition by P. G. Lowe and edited by J. R. M. Radok. Noordhoff, Groningen (Holland) 1965. xvi + 417 pp., index. (Price: \$US 14.60).

**TABLES FOR THE COMPUTATION OF TOROIDAL SHELLS,** by L. N. Osipova and S. A. Tumarkin. Translated by M. D. Friedmann. Noordhoff, Groningen (Holland) 1965. 126 pp. (Price: \$US 7.00).

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perfect; others do not fully appreciate that discomfort, normal in older buildings, should not occur in modern design. This systematic investigation has therefore produced results not readily obtainable.

All the buildings were in the United Kingdom, and the period covered was the one in which curtain walls were largely an experimental mode of construction. It is interesting to note that the failure most feared by architects, viz. excessive heat loss in winter, was observed in only one building; but the opposite fault of summer heat gain proved a widespread nuisance. Another common fault is the dirt penetration behind translucent spandrel panels which produced a virtually insoluble cleaning problem.

Maintenance was a fairly common trouble in many buildings. Particularly in schools, repairs by the caretaker tended to spoil the appearance of carefully designed details. The authors emphasise the need for a proper maintenance staff in buildings which use non-traditional materials.

The final volume deals with a much earlier period. Behne wrote his book on modern functional architecture in 1923, but was unable to find a publisher for a book which was then extremely unorthodox. In 1925 Gropius published *Internationale Architektur*, and when in 1926 Drei Masken Verlag in Munich printed Behne's manuscript, much of his thunder had been stolen. There followed an ill-tempered correspondence during which Behne accused Gropius of plagiarism. The reproduction without any alterations or additions, of Behne's book in the Ullstein series *Bauwelt Fundamente*, is welcome, although it seems tame enough today. Behne need not have worried unduly that Gropius used the same illustrations. Some still appear in most current textbooks on modern architecture; others have happily been forgotten.

**ECONOMIC SITE ORGANISATION AND BUILDING SUPERVISION**, by H. F. Broughton. E. & F. N. Spon, London 1965. x + 134 pp., index. (Price: £stg. 1/17/6).

**PROJECT PLANNING PLANNING AND CONTROL IN THE CONSTRUCTION INDUSTRY**, by G. Turner and K. Elliott. Cassell, London 1964. ix + 300 pp., ill., index. (Price: £sg. 2/6/0).

**OPERATIONAL RESEARCH FOR MANAGEMENT**, by M. J. Sargeant. Heinemann, London 1965. viii + 157 pp., index. (Price: £stg. 1/5/0).

**L'EVALUATION DES BATIMENTS — METRE ET ESTIMATION**, by Jacques Dupuis. Fourth Edition. Eyrolles, Paris 1965. 543 pp., ill. (Price: F 66.26).

**GROUP MEASUREMENT OF BUILDING WORKS**, by L. G. Holes. Crosby Lockwood, London 1965. xxiv + 200 pp., index. (Price £stg. 1/4/0).

**CONTRACT ADMINISTRATION FOR ARCHITECTS AND QUANTITY SURVEYORS**, by the Aqua Group. Crosby Lockwood, London 1965. xiv + 66 pp., ill., index. (Price: £stg. 0/18/0).

Mr. Broughton was until recently Group Head in charge of research into Building Production and Costs at the British Building Research Station. It is fortunate that he has decided to use part of his time after retirement to write this book, which relates in simple language some of the lessons learned through research. It is intended for building contractors, their agents, general foremen, and site staffs; and for the use of students on courses in the Diploma in Building and for the Associate Membership of the Institute of Building. The author uses no mathematics or complex terminology. He starts with a description of progress planning and supervision, using the bar chart method, and briefly introducing critical path programming. Then follows a discussion of the potential of

ately, gives most of the credit for prestressed concrete to Freyssinet and Mautner. Apparently the firm which sponsored the book has been profited more from the Monier and Freyssinet patents, than those of their competitors. One's main criticism of the second volume, on bridges, is its over-emphasis of Central European work, although the Gladesville Bridge in Sidney (*sic*) gets a mention.

There are a few minor errors. Some names, e.g. Maillard (*sic*) are mis-spelled, and Mendelsohn's Einstein Tower, a cement-rendered brick-structure, is credited to reinforced concrete design. Against this, however, must be set the numerous felicities: the details of the harbour installations at the Roman ports of Pozzuoli and Ostia, the account of the German cement research by Bleibtreu and Michaelis; the details of the remarkable, but relatively unknown lighthouse at Nikolayev, built in Russia in 1903, the fires in the 1880's at the Paris Opera Comique and of the Vienna Ringtheater; and the collapse of the Campanile of St. Mark's, Venice, in 1902.

Christiani and Nielsen, of Copenhagen, have produced a far less ambitious work on the occasion of the Golden Jubilee of their firm. Although it gives an account of the history of cement and of plain, reinforced and prestressed concrete, this is fairly brief. Apart from a few early historical pictures, all the illustrations are of work built by the firm. The operations of Christiani and Nielsen have been world-wide, and in England alone their work has included the Medway Bridge, the Chiswick-Langley