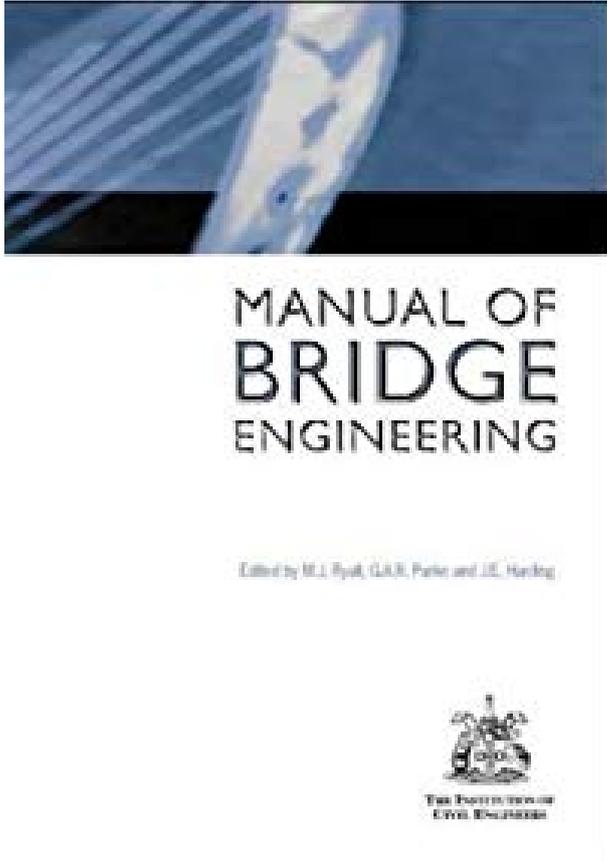


The Manual Of Bridge Engineering



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The bridge engineering industry creates an ever-increasing variation of challenges. This landmark publication brings together all topics which are of interest to bridge engineers around the world in one comprehensive manual, and will quickly establish itself as an invaluable reference work. It not only provides a broad overview of the whole subject of bridge engineering, but also focuses on some of the detailed aspects of analysis, design, construction and maintenance. "The Manual of Bridge Engineering" will be a definitive text for practising civil and structural engineers in consulting firms and government agencies, bridge contractors, research institutes, universities and colleges - in short, all engineers involved in any aspect of the design, construction and repair, maintenance and refurbishment of bridges. The manual begins with a chapter introducing readers to all of the bridge types encountered in bridge construction, from the simplest beam, through arches, to the more complex cable stayed and suspension bridges, and describes their behaviour in a qualitative manner. The second chapter is devoted to the loads which have to be sustained by bridge structures, and in particular looks at traffic load specifications around the world. It covers the brief history of loading specifications, looks in detail at some current code specifications and makes reference to loads due to wind, temperature, shrinkage and construction. This chapter also introduces the reader to the concepts of load distribution and explains the use of influence lines in bridge design. The middle section of the manual deals with the analysis, design and the construction of the more commonly known bridge types. It discusses the analysis tools normally employed and explains the general design concepts - both globally and locally.

Finally, for each particular bridge type, the modern methods of construction are explained. These chapters cover a vast area of work, and provide enough information for the understanding of the design process of many different kinds of bridges. The manual then deals with modern developments in the construction of bridges and the consideration of aluminium, fibre composites, bridge enclosures and intelligent structures. There are also chapters dealing with expansion joints, bearings, parapets, drainage, waterproofing, and substructures. The final chapters cover in some detail those topics akin to bridge management. These are vital for a full appreciation of bridge engineering, and give guidance on what is to be considered once the bridge has been commissioned.

The subjects covered include protection of both concrete and steel (also with reference to scour protection), project planning, management systems and strategies, inspection, monitoring, assessment and repair and strengthening.