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Design of Structural Steelwork **to BS 5950 and C-EC3**

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To my parents Jeannie and Robert

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Preface

Most engineers/engineering technicians develop their initial understanding of structural design by undertaking a recognised, structured undergraduate course of study. The material covered in such courses requires the student to refer to and use relevant British Standard Codes of Practice. Many practising engineers/technicians do not become involved in design immediately following graduation and require reference material with which to update and refresh their knowledge of design.

This text has been prepared for both types of reader. It is suitable for students undertaking degree or diploma level studies in architecture, civil, structural or building engineering.

The aim of the text is to develop an understanding of Limit State Design as applied to structural steelwork. It is assumed that readers will have access to and use the relevant British Standard Codes of Practice, i.e. BS 5950:Part 1, BS 6399:Parts 1 and 2 and the Concise Eurocode C-EC3.

The British Standards Institution publishes a selection of extracts from various codes entitled *Extracts from British Standards for students of structural design*; students using this document will be undertaking a course of study which is less extensive than the range covered by the present text and they may choose to ignore the additional more detailed material and clause references that it includes.

The use of the codes, particularly BS 5950:Part 1 is explained and demonstrated in numerous worked example and illustrations. The text is both extensive and comprehensive; it includes explanations of structural analysis and load distribution techniques where considered appropriate. Student readers are strongly advised to read, use and familiarise themselves with the terminology adopted in design codes by frequent references to relevant clauses throughout the text. Structural design cannot be efficiently carried out without reference to design codes.

The complexity and nature of modern design codes necessitates reference to additional material for full explanations of the rationale behind their development; appropriate sources are provided in the bibliography.

A selection of design examples from Chapters 2, 5 and 6 are presented in a format typical of that used in a design office in order to encourage students to adopt a methodical and rational approach in preparing structural calculations. The solutions for these examples are given at the end of their respective chapters.

W.M.C. McKenzie

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C-EC3 – Concise Eurocode for the design of steel buildings in the United Kingdom

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