

Design Manual for both graduates and chartered engineers

A new publication from the U.K. Concrete Centre provides an invaluable reference source for the design office and acts as a useful reference guide for candidates taking the Institution of Structural Engineers examination.

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The manual is structured to reflect the examination questions of the



Institution of Structural Engineers, including a whole section devoted to assisting engineers in developing their structural solutions. This includes span – to – depth tables of a large range of concrete options, including in-situ concrete, precast concrete and a combination of the two (i.e. hybrid concrete construction) as well as other tools for initial sizing.

The manual provides quick reference tables to assist in selecting appropriate solutions for concrete floors, foundations, piles and retaining walls. There is guidance given on issues to consider when undertaking the design appraisal, which should be just as useful for reporting back to a client as it is for convincing an examiner that the candidate has the most appropriate solution.

Examples of functional framing and load transfer diagrams assist the examination candidate to appreciate the standard expected of her / him. A chapter is also devoted to design calculations. It includes essential figures and tables from BS 8110 (1) for quick reference. There are example calculations which serve as a prompt for those familiar with concrete design and who just need to refresh themselves with the essential requirements. There is guidance on identifying the principal elements to design, which, again will be useful both in the examination or the design office. The guidance includes beams, slabs, columns, stability walls, piles and ground-bearing slabs.

The requirement to produce plans, sections and elevations is covered by a further chapter which gives numerous examples including slabs, waterproofing,

foundations, cladding supports and movement joints. These are intended to act as a prompt to help ensure features are included in the drawings, rather than a source to copy from.

Although programmes and method statements are often neglected by candidates in the examination, this publication devotes a short chapter to the subject. This sets out the essential requirements for a designer's method statement as well pointers to help the designer consider health and safety issues at the early stage of the project, whether it is a real or a hypothetical project. Examples of project programmes are provided along with generic guidance on the procurement and construction periods for various construction types.

The publication concludes with a series of appendices providing information on the robustness of precast frames, useful tables and charts (e.g. column charts) and coefficients for bending moments and shear forces.

The design manual is a major design tool for the engineer. Based on the latest available information, it is all engineers will need for the majority of concrete structures.

Reference

British Standard Institution. BS 8110. Structural use of concrete. Code of practice for design and construction. 1997. Code of practice for special circumstances, 68pp.

To purchase your copy of the Concrete Buildings Scheme Design Manual visit www.concretebookshop.com