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Talent alone cannot make a writer. There must be a man behind the book. [Representative Men, 'Goethe']

Ralph Waldo Emerson (1803–82)

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Preface

To carry out their chosen profession in a satisfactory manner, all practitioners associated with the building function must have some knowledge of and be familiar with the state of the art of 'building services'.

This book will be of use to students of all ages, levels and abilities engaged in studying for professional qualifications on any grade of course within the built environment. The author hopes that it will also assist those who have been given the opportunity of making a career change into the building services sector.

The useful life of building services can be in excess of 20 years and students must expect to encounter both 'old' and 'new' technology, often functioning together in the same premises. Such conditions make it a requirement that they should understand and appreciate the limitations of both the 'old' and the 'new' plant, so that they can exercise their function in operating, or altering, any part of any installation effectively. Clearly, practitioners must first appreciate the basic design parameters of the system and, to help in this, I have prefaced the introduction of most of the main topics with a short history of their development, and have also given the reasons for arranging the separate parts of each installation in the manner described.

I am confident that this book will prove to be of use to all architects and their assistants, to builders, sanitary and heating engineers, as well as to electrical and mechanical engineering consultants, building and quantity surveyors, and building managers and inspectors. Throughout the text, I have dealt with the topics from first principles, without assuming any prior knowledge of the subject on the part of the reader. Analytical work has been included only when the topic cannot be covered satisfactorily in any other way, such as in the chapter dealing with pipe sizing.

I also recommend this book as a 'first read' for engineers, who will discover that when describing and classifying the various thermodynamic processes currently in use in the built environment, I have categorised them using some of the descriptive terminology associated with applied thermodynamics.

One of the main functions of building services consultants, building

managers, inspectors and engineers is to deal with energy in the built environment. Such energy is available in electrical and in non-electrical forms, and is processed in separate stages, each of which requires a separate field of knowledge, expertise and equipment. I have found it to be both logical and convenient to describe the principal aspects of these stages over four chapters, each of which may be described as being 'energy based'. Chapters 3, 4 and 5 deal with the processing of energy in its non-electrical forms, while Chapter 6 deals with the processing of energy in its electrical form. Hence, for energy in its non-electrical form: Chapter 3 deals with its collection and storage, Chapter 4 deals with its release and absorption, and Chapter 5 deals with its distribution, emission and control. And for energy in its electrical form: Chapter 6 deals with its generation, transmission, distribution, emission and control.

Chelmsford, Essex

Dr George Hassan

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