

Preface

Food manufacturing has evolved over the centuries from a kitchen industry to a modern and sophisticated operation involving a wide range of different disciplines. Thus, the design of food factories requires a holistic approach based on a knowledge of the natural and biological sciences, most engineering disciplines, relevant legislation, operations management, and economic evaluation. A typical factory includes the food-processing and packaging lines, the buildings and exterior landscaping, and the utility-supply and waste treatment facilities. Design of the production line, the heart of the factory, is in itself interdisciplinary in nature and can involve food scientists; microbiologists; and chemical, mechanical, and control engineers as well as other specialists. The specification and design of the buildings is naturally a civil engineering responsibility but inputs from other members of the design team are essential. Finally, provision of the utilities (e.g., water, steam, electricity, HVAC, and compressed air) and waste treatment facilities requires other specialist engineering input. The project manager has a vital role to play in coordinating all required activities both in the design and construction phases. It is his responsibility to ensure that all tasks are completed on time and within budget.

This Handbook attempts to compress comprehensive, up-to-date coverage of the areas listed above into a single volume. Naturally, compromises have to be made, particularly when attempting to balance breadth versus depth. Thus, many of the topics covered as a chapter herein could and, in some cases have, been the subject of complete books. References to these more comprehensive texts are given in the chapters concerned. Another difficulty is that every country has its own body of legislation covering all aspects of food manufacture. In this work, reference has been made almost exclusively to US, EU, and UK legislation. Information pertaining to other countries is widely available on the Internet, which also enables the reader to keep up with legislative changes. Use of the Internet, however, should not be used as a substitute for sound professional advice in this area.

It is hoped that the Handbook of Food Factory Design will prove to be of value across the food-manufacturing community. It will undoubtedly be of interest to professionals involved in construction projects. The multidisciplinary nature of the subject matter should facilitate more informed communication between individual specialists on the team. It should also provide useful background information on food factory design for a wider range of professionals with a more peripheral interest in the subject: for example, process plant suppliers, contractors, HSE specialists, retailers, consultants, and financial institutions. Finally, it is hoped that it will also prove to be a valuable reference for students and instructors in the areas of food technology, chemical engineering, and mechanical engineering, in particular.

I would like to express my gratitude to each of the authors who has provided chapters for this book. Their knowledge, patience, and professionalism cannot be acknowledged too highly. Special thanks are also due to Campden BRI, Leatherhead Food Research, and the UK Health and Safety Executive who granted permission for their work to be freely quoted and adapted for use in this Handbook.

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