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Determining equipment and process needs and how this affects food factory design
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PART 1 REGULATORY ISSUES AND RETAILER REQUIREMENTS

EU food hygiene law and implications for food factory design
M van der Velde and B van der Meulen
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Regulations on the hygienic design of food processing factories in the United States
N D Fortin, Michigan State University, USA
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N Nakagawa, Kibun Foods Inc. and H Omura, The Japan Food Machinery Manufacturers’
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J Gruber and D Panasiak, Food Liaison, Australia and I Thomas, Food Assurance Systems, New Zealand

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A Murray, Andrew Murray Consulting, South Africa

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S Pfaff, Food Information Service (FIS) Europe, Germany

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M Hennessey, F Busta and E Cunningham, National Center for Food Protection and Defense and J Spink, Michigan State University, USA
Minimum hygienic design requirements for food processing factories
J Holah, Campden BRI, UK
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PART 2 SITE SELECTION AND FACTORY LAYOUT

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The impact of factory layout on hygiene in food factories
R R Maller Jr., PepsiCo America Beverages, USA
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- Layout of the outer plant building
- General interior building layout requirements
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Hazard control by segregation in food factories
J Holah, Campden BRI, UK
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- Barrier 2: factory building
- Barrier 3: high care/risk areas
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Managing airflow and air filtration to improve hygiene in food factories
S Wray, Filtration Engineering Ltd, UK
PART 3 HYGIENIC DESIGN OF WALLS, CEILINGS AND FLOORS

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D Cattell, Kemtile Ltd., UK
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Hygienic design of ceilings for food factories
F Wessels, Unilever R&D, The Netherlands
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Hygienic floor finishes for food processing areas
K Cook, Altro Ltd, UK
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Hygienic design of floor drains in food processing areas
M Fairley, ACO Technologies plc, UK
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- Channel and gully system functional overview
- Floor drains as a point of contamination
- Material choice for floor drainage
- Modelling flow in drainage channels
- Incorporating hygienic design principles in drain design
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PART 4 HYGIENIC DESIGN OF SELECTED FIXTURES, UTILITY SYSTEMS AND PROCESS SUPPORT SYSTEMS

Hygienic supply of electricity in food factories
F Moerman, European Hygienic Engineering and Design Group, Belgium
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- Use of electrical equipment in the food industry
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- Hygienic supply of electricity
- Electrical cabinets and field boxes
- Hygienic design and installation of electrical equipment
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- References

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- Special duty lighting
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F Moerman, European Hygienic Engineering and Design Group, Belgium
- Introduction
- Location of support systems and building services within the food factory
- General hygienic requirements for food processing support piping within the factory
- Specific hygienic design requirements for food processing support piping in rooms of different hygienic class
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F Moerman, European Hygienic Engineering and Design Group, Belgium
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- Hygienic design of exhaust systems for the removal of steam, heat, odours, grease- and water-laden vapour outside the food factory
- Hygienic design of specific exhaust systems used to handle effluents produced during the processing of food by means of heat
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- Hygienic design of dust control systems
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R Stanley and F Pedrosa, Spirax Sarco Ltd., UK
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- Steam grade definitions
- Plant steam
- Filtered steam
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- Installation, operation and maintenance
- Boiler installation
- Steam pipe insulation
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Hygienic design of walkways, stairways and other installations in food factories
H Schmidt, Endress+Hauser Messtechnik GmbH, Germany
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Hygienic design of entries, exits, other openings in the building envelope and dry warehousing areas in food factories
D Graham, Graham Sanitary Design Consulting LLC, USA
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Effluents from the food industry
G Tommaso, University of Sao Paulo, Brazil
- Introduction
- Effluent characterization
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- Microbiological hazards for the food factory
- Sources of further information and advice
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Design of food storage facilities
J Hofmann, Hygienic Design Weihenstephan, Germany
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- Storage facilities for dry products and dry cleaning requirements
- Wet cleaning of storage facilities and storage of liquid products
- Future trends
- References

Design, installation and operation of cleaning and disinfectant chemical storage, distribution and application systems in food factories
P Brougham, Ecolab Ltd., UK
- Introduction
- Storage of industrial detergents, disinfectants and associated products
- Hygiene chemical distribution and point of use location within production areas
- Dose, control and application of hygiene chemicals
- Dry cleaning and goods area
- Cleaning rooms and utensil washing
- Maintenance and cleaning of the cleaning systems
- Requirements for transition to operation
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Design of food factory changing rooms
D Smith and J Holah, Campden BRI, UK
- Introduction
- Legislation
- Facilities design
- Low risk/high risk barriers
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PART 6 MANAGING BUILDING WORK AND ADDITIONAL FACTORY DESIGN CONSIDERATIONS

Managing a factory building project: from development of a construction brief to commissioning and handover
K England, Morgan Sindall Professional Services, UK
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P Overbosch, Metro AG, Germany and M Freund, Kraft Foods, USA
- Inspecting for commissioning of manufacturing sites for hygienic design and practice
- A site that has been newly designed and built for food manufacture
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An insurance industry perspective on property protection and liability issues in food factory design
H Haymerle, Zürich Versicherungs – Aktiengesellschaft, Austria
- Introduction
- Hazard analysis
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