

# CONTENTS

- 1. Preface ..... 9
- 2. Tradition of contemporary spatial solutions for industry ..... 13
  - 2.1. Introduction ..... 15
  - 2.2. Phases of industrialization from the end of the 18th century to the 1980s..... 19
    - Paradigm of a facility and the beginnings of an industrial plant. Evolution of an industrial facility. Architecture of an industrial facility. Large-scale industrial hall. Evolution of work organisation methods.
  - 2.3. Spatial organisation of industry .....35
    - Industrial conurbation and agglomeration. Industry in the city. Charter of Athens.
  - 2.4. Summary ..... 41
    - Industrial landscape. Towards the contemporary times – the main slogans of the 2nd industrial revolution.
- 3. Urban planning for industry – outline of tendencies in the development of spatial layouts of industry ..... 45
  - 3.1. Introduction .....47
    - Development of the principles of spatial organization of industry. Beginnings of industrial towns. Relation between factories and workers housing estates. Change of the spatial organization of industry in the second half of the 19th century. Spatial division of workplaces from places of residence. Crisis of a 19th-century city and a new approach; Ebenezer Howard, Tony Garnier, Le Corbusier. Industrial zones.
  - 3.2. Spatial divisions of industry .....57
    - Basic groups and types of production activity. Typology of the general division of industry. Mining and energy industry. Processing industries. Migration of industry as a result of the globalisation of economy.
  - 3.3. Evolution of the philosophy of industrial areas planning .....61
    - Alfred Weber’s theory of the location of industry. General principles of spatial economy according to August Lösch. Growth poles. Fall of historical industrial districts. Towards a new paradigm.
  - 3.4. General principles of selecting locations of industrial plants and spatial clusters of industry ..... 66
    - Selection criteria for industrial locations. Effectiveness criterion in industrial location. Criterion of onerousness and effect on the environment in industrial location. Planning problems. Benefits of an agglomeration. Relations to the urbanised area – division attempt.
  - 3.5. Summary. Premises for the location selection in the urbanised structure .....78
- 4. Spatial clusters of industry and science .....81
  - 4.1. Introduction .....83
    - Contemporary industrial location factors.
  - 4.2. Characteristics of contemporary clusters of the functions of production and science ..... 84
    - Technofields / technopolises. Compact clusters of industrial and related facilities. Clusters of industrial and scientific facilities.

4.3. Technology parks – generations .....	88
1st generation 1970–1980. 2nd generation 1980–1990. 3rd generation after 1990.	
4.4. Examples of technopolises .....	89
Silicon valley. Sophia Antipolis. Corridor of the M4 motorway (London – Bristol).	
4.5. Examples of research parks and science and technology parks .....	94
Cambridge Science Park Uk. Stockley Park. Technologiepark, Dortmund. Inovalée (Zirst De Meylan). Berlin Adlershof.	
4.6. Other urban clusters with the function of production .....	101
Vega, The Park In Venice. Novartis Campus In Basel. Belval In Luxembourg.	
4.7. Summary – spatial limitations of technoparks in Poland .....	105
<b>5. Selected examples of industrial facilities .....</b>	<b>107</b>
5.1. Introduction .....	109
General qualities of spatial solutions for industry.	
5.2. Tables of selected facilities .....	113
Selection criteria	
tab.01. INMOS Factory in Newport (UK), tab. 02. 'SÜDDEUTSCHE ZEITUNG' Printing House in Steinhausen near Munich, tab. 03. FLONIC-SCHLUMBERGER Factory near Reims (France), tab. 04. DOMINUS Winery in California, tab. 05. OLEIFICIO BORELLI Factory in Pontedassio (Italy), tab. 06. CURIAL Ready-to-eat Factory in Paris, tab. 07. 'FINANCIAL TIMES' Print Works in London, tab. 08. RANK XEROX Research Centre in Wewlyn Garden City (UK), tab. 09. IMPRIMERIE NATIONALE near Paris, tab. 10. CARTIER Watches Factory in Villeret (Switzerland), tab. 11. RICOLA Europe S.A. Warehouse and Production Plant in Mulhouse (France), tab. 12. BENETTON Factory near Treviso, tab. 13. FOTONIKA Laboratory in Berlin, tab. 14. VEENMAN PRINTERS Printing House in Ede (Holland), tab. 15. TOBIAS GRAU Warehouses and Offices near Hamburg, tab. 16. 'EXPERIMENTAL FACTORY' in Magdeburg, tab. 17. HSE Administration and Workshops in Hamburg, tab. 18. MAX PLANCK INSTITUTE in Dresden, tab. 19. BANG & OLUFSEN MEDICOM in Struer (Denmark), tab. 20. MEKOPRINT production of printed circuit boards PCB in Støvring, (Denmark), tab. 21. VW Plant 'TRANSPARENT FACTORY' in Dresden, tab. 22. VACHERON CONSTANTIN near Geneva	
<b>6. Designing the form of an industrial facility .....</b>	<b>159</b>
6.1. Introduction .....	161
Traces of tradition	
6.2. Elements of spatial solutions .....	162
Main qualities of a functional system. Production technology and organisation. Workplace environment. Evolution of the view on the workplace environment	
6.3. Industrial facility .....	169
Industrial facility plot. Zoning. Modularity, development potential context of the surrounding area.	
6.4. Functional and spatial structure of an industrial facility .....	173
Technology vs. Spatial structure. Hall structures with a universal structure. Halls with the structure partially integrated with technological equipment. Production halls for heavy industry. Enveloped technological structures. Structure, outline of tendency.	
6.5. Form vs. Structure .....	179
Interpretation of the architectural geometry. Tectonics of a large-scale building. Buildings with expressive tectonics. Buildings with hidden tectonics. Industrial facility with fragmented tectonics.	



6.6. Envelope of an industrial facility .....	189
Façade evolution. Structure of an industrial facility – ‘the skin’ of a building. Photovoltaics at the service of architecture. Material, texture, colour, light, ornament.	
6.7. Architecture of an industrial facility .....	197
<b>7. Marketing function of urban planning and architecture of the contemporary industry.</b>	
<b>Summary</b> .....	203
7.1. Return to the city .....	206
Role of industry in competitiveness of cities. Contemporary function of a historical industrial facility – creative space.	
7.2. Marketing function of an industrial facility .....	220
In urban planning. In architecture.	
<b>Bibliography</b> .....	226
<b>Sources of illustrations</b> .....	230
<b>Abstract</b> .....	235