

# CONTENTS

---

<b>INTRODUCTION/PREFACE .....</b>	<b>9</b>
<b>1. INTRODUCTION TO THE FIELD OF WATER MANAGEMENT .....</b>	<b>11</b>
1.1 DEFINITION OF THE TOPIC AND SCOPE OF THIS PUBLICATION .....	11
1.2 A BRIEF HISTORICAL ACCOUNT OF THE DEVELOPMENT OF WATER MANAGEMENT.....	12
<b>2. THE CURRENT STATE OF HERITAGE PROTECTION AT WATER MANAGEMENT SITES IN THE CZECH REPUBLIC .....</b>	<b>19</b>
<b>3. EVALUATION OF WATER MANAGEMENT SITES FROM THE PERSPECTIVE OF HERITAGE MANAGEMENT .....</b>	<b>23</b>
3.1 THE APPROACH TO THE EVALUATION OF INDUSTRIAL HERITAGE IN OTHER COUNTRIES .....	23
3.2 THE APPROACH TO THE EVALUATION OF INDUSTRIAL HERITAGE IN THE CZECH REPUBLIC .....	26
3.3 APPROACHING THE EVALUATION OF WATER MANAGEMENT SITES.....	27
3.3.1 Typological value .....	29
3.3.2 Value deriving from the technological flow (process) .....	30
3.3.3 Value deriving from systemic interconnections .....	32
3.3.4 Value deriving from authenticity .....	32
3.3.5 Architectural value .....	34
3.3.6 Artistic-historical value .....	39
3.3.7 Landscape/urbanistic value .....	40
3.3.8 Historical value .....	41
3.3.9 Value deriving from age .....	43
3.3.10 Recommendations for evaluation .....	43
<b>4. DESCRIPTION AND EVALUATION OF SELECTED WATER MANAGEMENT GROUPS AND STRUCTURES .....</b>	<b>45</b>
4.1 DAMS .....	45
4.1.1 History of dams .....	47
4.1.2 Classification of dams according to their main building material .....	48
4.1.3 Construction types of concrete and masonry dams.....	58
4.1.4 Dam functional structures .....	62
4.1.5 Functional complexes .....	70
4.1.6 Evaluation from the point of view of heritage preservation based on specific examples .....	75
4.1.7 Register of locations .....	84

<b>4.2 SMALL WATER RESERVOIRS .....</b>	<b>85</b>
4.2.1 History of ponds .....	86
4.2.2 Classification of small water reservoirs .....	87
4.2.3 Basic functional structures of small water reservoirs.....	90
4.2.4 Functional complexes .....	103
4.2.5 Evaluation from the point of view of heritage preservation based on specific examples .....	106
4.2.6 Register of locations .....	110
<b>4.3 WATERWAYS.....</b>	<b>111</b>
4.3.1 Works for making rivers navigable.....	112
4.3.2 Races and other works for water transport .....	127
4.3.3 Weirs.....	134
4.3.4 Functional complexes .....	147
4.3.5 Evaluation from the point of view of heritage preservation based on specific examples .....	158
4.3.6 Register of locations .....	163
<b>4.4 STRUCTURES FOR THE USE OF HYDROPOWER .....</b>	<b>165</b>
4.4.1 The history of hydropower.....	165
4.4.2 Basic schemes of hydropower works.....	166
4.4.3 Impoundment structures .....	180
4.4.4 Inlet structures .....	180
4.4.5 Headraces, tailraces and surge chambers .....	188
4.4.6 Production structures (buildings).....	195
4.4.7 Technological part.....	198
4.4.8 Functional complexes .....	217
4.4.9 Evaluation from the point of view of heritage preservation based on specific examples .....	223
4.4.10 Register of locations .....	228
<b>4.5 THE WATERWORKS INDUSTRY .....</b>	<b>231</b>
4.5.1 History of the waterworks industry.....	231
4.5.2 Typology of water supply structures .....	247
4.5.3 Functional complexes .....	272
4.5.4 Evaluation from the point of view of heritage preservation based on specific examples .....	275
4.5.5 Register of locations .....	284
<b>4.6 SEWERAGE AND WASTEWATER TREATMENT .....</b>	<b>290</b>
4.6.1 History of sewerage and wastewater treatment .....	294
4.6.2 Basic functional structures for wastewater treatment.....	295
4.6.3 Functional complexes .....	310
4.6.4 Evaluation from the point of view of heritage preservation based on specific examples .....	322
4.6.5 Register of locations .....	329

## **5. GENERAL PRINCIPLES AND EXAMPLES OF PRESERVATION, RENOVATION AND NEW USE OF WATER MANAGEMENT STRUCTURES ..... 331**

5.1	WATER MANAGEMENT STRUCTURES IN THE CZECH REPUBLIC WITH A HERITAGE VALUE – RENOVATIONS, RECONSTRUCTIONS AND ADJUSTMENTS (examples of both good and bad practice) .....	331
5.1.1	Ostrava-Nová Ves, water treatment plant.....	331
5.1.2	Vítkov-Podhradí, water treatment plant .....	333
5.1.3	Hořín, lock .....	334
5.1.4	Znojmo-Oblekovice, weir .....	337
5.1.5	Rudolfov, hydraulic structure and hydroelectric power plant.....	338
5.1.6	Žďárský Potok, splash dam on Splavský Brook .....	341
5.1.7	Blatná Water Ditch .....	343
5.2	OPTIONS FOR MAINTAINING WATER MANAGEMENT STRUCTURES AFTER DECOMMISSIONING – CONVERSION, MUSEALISATION .....	346
5.2.1	Rjukan (Norway), Vemork and Såheim hydraulic power plants.....	346
5.2.2	Berlín (Germany), Friedrichshagen old water treatment plant (Altes Wasserwerk Friedrichshagen) .....	348
5.2.3	Malnisiò di Montereale Valcellina (Italy), Antonio Pitter hydroelectric power plant (Museo della Centrale idroelettrica di Malnisiò) .....	350
5.2.4	Wrocław (Poland), Na Grobli water treatment plant .....	351
5.2.5	Copenhagen (Denmark), ground water tanks and a pumping station .....	352
5.2.6	Plzeň, water treatment plant, Puech-Chabal filtration station .....	354
5.2.7	Prague-Letná, elevated water tank .....	356
5.2.8	Prague-Libeň, elevated water tank .....	359
5.2.9	Brno, ground water tanks at Špilberk .....	359
5.2.10	Třebíč, elevated water tank .....	361
5.3	PROPOSALS FOR IMPROVEMENT IN HERITAGE PROTECTION AND CARE OF WATER MANAGEMENT STRUCTURES IN THE CZECH REPUBLIC .....	361

## **6. CONCLUSION..... 367**

7.	<b>BIBLIOGRAPHY .....</b>	<b>369</b>
7.1	PRINT AND ELECTRONIC SOURCES.....	369
7.2	ARCHIVAL SOURCES .....	377
7.3	MAP SOURCES .....	377
7.4	COMMON LEGEND OF DIAGRAMS .....	377

## **8. LIST OF ABBREVIATIONS .....** 379

## **9. SUBJECT INDEX..... 381**