

CONTENTS

INTRODUCTION/PREFACE	9
1. INTRODUCTION TO THE FIELD OF WATER MANAGEMENT	11
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
2. THE CURRENT STATE OF HERITAGE PROTECTION AT WATER MANAGEMENT SITES IN THE CZECH REPUBLIC	19
3. EVALUATION OF WATER MANAGEMENT SITES FROM THE PERSPECTIVE OF HERITAGE MANAGEMENT	23
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
4. DESCRIPTION AND EVALUATION OF SELECTED WATER MANAGEMENT GROUPS AND STRUCTURES	45
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

4.2	SMALL WATER RESERVOIRS	85
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
4.3	WATERWAYS	111
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
4.4	STRUCTURES FOR THE USE OF HYDROPOWER	165
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
4.5	THE WATERWORKS INDUSTRY	231
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
4.6	SEWERAGE AND WASTEWATER TREATMENT	290
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 Sårheim hydraulic power plants	346
5.2.2	Berlin (Germany), Friedrichshagen old water treatment plant (Altes Wasserwerk Friedrichshagen)	348
5.2.3	Malnisio di Montereale Valcellina (Italy), Antonio Pitter hydroelectric power plant (Museo della Centrale idroelettrica di Malnisio)	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. BIBLIOGRAPHY 369

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