

Environment, construction and sustainable development

Volume 2

# Sustainable Civil Engineering

Edited by  
**T.G. Carpenter**

 WILEY

# Contents

## Volume 1 The Environmental Impact of Construction

<i>Preface</i>	ix
<i>About the Authors</i>	xi
<b>PART I Sustaining Resources</b>	1
Chapter 1 Construction in a Fragile World <i>T. G. Carpenter</i>	3
Chapter 2 Land Resources <i>T. E. Beaumont</i>	11
Chapter 3 Water Resources Development <i>T. G. Carpenter and D. G. Knott</i>	41
Chapter 4 Natural Habitat <i>S. Thompson</i>	65
Chapter 5 Landscape and Heritage <i>T. G. Carpenter</i>	79
Chapter 6 Waste and Pollution <i>J. M. Barron</i>	115
Chapter 7 Quality of Human Life <i>J. C. W. Aglionby</i> with contributions by T. G. Carpenter, E. J. M. Hepper, C. English and D. D. Carpenter	127
<b>PART II Controlling or Coping with Environmental Change</b>	149
Chapter 8 Construction for Environmental Recovery in China <i>M. V. Haddrill</i>	151
Chapter 9 Resources and Development in the New World <i>T. G. Carpenter</i>	169
Chapter 10 Highway Development in Central and Eastern Europe <i>T. Cheeseman</i>	185
Chapter 11 Construction of the Øresund Crossing <i>A. G. Hooper</i>	207
Chapter 12 Coping with River Floods in Bangladesh <i>A. G. Hooper</i>	213

Chapter 13	Large Reservoir Storage in Pakistan <i>J. N. Duder</i>	223
Chapter 14	Reservoir Storage on the Blue Nile in Sudan <i>R. J. Chapman</i>	245
Chapter 15	Land Use and Water Transfer in Central Asia <i>T. G. Carpenter and J. F. Halcro-Johnston</i>	259
Chapter 16	Underground Storage and Disposal of Radioactive Waste in Britain <i>B. J. Breen</i>	279
Chapter 17	The Legacy of Twentieth-century Construction – Challenges for the Future <i>C. J. A. Binnie and T. G. Carpenter</i>	291

## Volume 2 Sustainable Civil Engineering

<i>Preface</i>		ix
<i>About the Authors</i>		xi
<b>PART III</b>	<b>Engineering Solutions</b>	309
Chapter 18	Issues and Options for Construction <i>T. G. Carpenter</i>	311
Chapter 19	Construction Materials <i>T. G. Carpenter</i>	323
Chapter 20	Construction Processes <i>T. G. Carpenter</i>	345
Chapter 21	Green Engineering <i>J. R. Emberton</i>	367
Chapter 22	Industrial Site Selection and Construction <i>J. M. Barron and T. G. Carpenter</i>	385
Chapter 23	Energy Production <i>T. G. Carpenter and E. J. M. Hepper</i>	401
Chapter 24	Solid Waste Management <i>J. M. Barron</i>	437
Chapter 25	Water Supply and Wastewater Disposal <i>J. Bawden</i>	445
Chapter 26	Dams and Reservoirs <i>P. J. Mason and T. G. Carpenter</i>	461
Chapter 27	Conservation of Reservoir Storage <i>W. R. White and L. J. S. Attewill</i>	481
Chapter 28	River Flood Protection <i>A. G. Hooper and T. G. Carpenter</i>	505
Chapter 29	Coastal and Marine Structures <i>A. G. Hooper</i>	523

Chapter 30	Engineering for Cities <i>R. S. Steedman</i>	541
Chapter 31	Sustainable Buildings <i>A. V. Gilham</i>	551
Chapter 32	Construction for Rural Development <i>T. G. Carpenter and C. English</i>	563
Chapter 33	Transport Infrastructure <i>T. G. Carpenter and E. J. M. Hepper</i>	583
<b>PART IV</b>	<b>Planning within Economic and Political Realities</b>	649
Chapter 34	Environmental Policy, Legislation and Planning <i>T. G. Carpenter and A. V. Gilham</i>	651
Chapter 35	Environmental Impact Assessment <i>S. Thompson</i>	665
Chapter 36	Appraisal of Projects <i>A. Brookes and V. Pollard</i>	673
Chapter 37	Implementation of Sustainable Development <i>T. G. Carpenter, A. V. Gilham and A. J. M. Vickers</i>	689
Chapter 38	Twenty-first-century Construction <i>T. G. Carpenter</i>	701
<i>Index</i>		721