# Contents

*Preface* viii  
*About the author* ix  
*Acknowledgments* x  

## 1 Introduction to sustainable construction  
1.1 Why a book focused on sustainable construction? 1  
1.2 Why construct sustainably? 2  
1.3 How can we define sustainability? 2  
1.4 The environmental importance of design, construction, and care of buildings 19  
1.5 Where next? 19  
References 19  

## 2 Procurement and sustainability  
2.1 Procurement and construction 22  
2.2 Drivers for and concepts behind sustainable procurement 23  
2.3 BREEAM 2011 and sustainable procurement 30  
2.4 Organisational values, risk, and stakeholder goodwill 31  
2.5 Contracts and sustainable construction 38  
2.6 The RIBA plan of work 39  
2.7 The sustainable procurement of materials and equipment 40  
2.8 Summary 42  
References 42  

## 3 Energy, water, refurbishment, and sustainable building design  
3.1 Design-related sustainability 45  
3.2 Sustainable design 46  
3.3 Energy and design: Building fabric 48  
3.4 Energy and design: Renewable energy and sustainable technologies 78  
3.5 Water 96  
3.6 Design for sustainable refurbishment 102  
3.7 Summary 105  
References 106  

## 4 Materials and sustainable building design  
4.1 Materials and design 110  
4.2 Responsible sourcing of materials 111  
4.3 Life cycle assessment 112  
4.4 Whole-life carbon (embodied energy and embodied carbon) 114  
4.5 Materials and recycle/reuse 129  
4.6 Sustainable construction materials 132  
4.7 Summary/what next? 140  
References 140
9 Future of sustainable construction
9.1 Future directions and policies 313
9.2 Future technologies 321
9.3 Future energy 324
9.4 Future materials 327
9.5 Future construction practices 329
9.6 Future norms and expectations 331
9.7 Chapter summary 332
References 333

Index 336