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Nota di contenuto	Cover; Title; Copyright; Dedication; Table of Contents; List of figures; List of tables; Foreword; Preface; Acknowledgements; SECTION A: Overview; 1 Historical background: from sustainable development to carbon management; 1.1 The built environment's role in the global carbon cycle; 1.2 History of policies and protocols for carbon management; 1.3 Equity implications of carbon management; References; 2 Overview of climate change; 2.1 Climate change science and the greenhouse gases (GHGs); 2.2 Global greenhouse gas emissions; 2.2.1 Contraction and Convergence; 2.3 Greenhouse gas sources 2.3.1 Peak oil2.4 Greenhouse gas sinks; 2.5 Adaptation and mitigation; 2.6 Vulnerability; Bibliography; 3 Sectoral approaches to carbon management; 3.1 Energy generation; 3.2 Transport; 3.3 Water and wastewater; 3.4 Waste management; 3.5 Information and communications technology; 3.6 Manufacturing and distribution; 3.7 Green spaces; 3.8 Human behaviour; Bibliography; SECTION B: Strategies for a low carbon built environment; 4 Energy generation for a low carbon built environment; 4.1 Micro and distributed generation;

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4.1.4 Ground source heat pumps4.1.5 Air source heat pumps; 4.1.6 Geothermal; 4.1.7 Micro and community CHP and biomass; 4.1.8 Anaerobic digestion; 4.1.9 Micro-hydro; 4.2 Centralised renewable generation; 4.2.1 Hydropower; 4.2.2 Wind farms; 4.2.3 Solar farms; 4.2.4 Wave and tidal power; 4.2.5 Biomass; 4.2.6 Nuclear; References; 5 Carbon management in the new build; 5.1 Defining the 'carbon problem'; 5.1.1 Principal emission drivers in the built environment; 5.2 Physics of buildings; 5.2.1 Climate; 5.2.2 Indices to quantify the climatic burden on buildings; 5.2.3 Thermal comfort
5.2.4 Key building processes and needs5.3 Passive/low energy design approaches; 5.3.1 Temperate climates; Case study: The Passivhaus approach; Case study: Zero carbon domestic buildings in temperate climates; Case study: The case of zero energy (i.e. energy exporting) buildings in the UK; 5.3.2 Warm, humid climates; Case study: Zero carbon non-domestic buildings in warm, humid climates: MAS Intimates Thurulie, Thulhiriya, Sri Lanka; 5.3.3 Hot, dry climates; 5.4 Problems needing urgent action; 5.4.1 Overheating; 5.4.2 Thermal comfort standards; 5.5 Drivers and barriers to LZC in the new build References6 Carbon management in the existing stock; 6.1 Retrofitting buildings for low/zero carbon - climate-specific solutions; 6.1.1 Retrofit in temperate climates; 6.1.2 Retrofit in warm climates; 6.2 Retrofitting buildings for low/zero carbon - climate-independent solutions; 6.2.1 Green roofs; 6.2.2 Lighting and small appliances; 6.2.3 Smart meters; 6.2.4 CHP and renewable energy; 6.3 Barriers and opportunities to LZC in existing buildings; 6.3.1 Key drivers; 6.3.2 Key challenges; References; 7 Carbon management in cities; 7.1 Introduction
7.1.1 Data on global cities and their carbon emissions

Sommario/riassunto

"Three broad sectors of the economy are generally recognised as key to a low carbon future: energy, construction and transportation. Of these, carbon management in the built environment remains the least well-studied.This much-needed book brings together the latest developments in the field of climate change science, building design, materials science, energy and policy in a form readily accessible to both students of the built environment and practitioners. Although several books exist in the broad area of carbon management, this is the first to bring together carbon management technology, technique and policy as they apply to the building sector.Clear and succinct sections on the overarching principles, policies, approaches and technologies are combined with case studies and more in-depth coverage of the most relevant topics. It explains how to produce a simple carbon footprint calculation, while also being an informative guide for those developing or implementing more advanced approaches. This easy to read book is the ideal primer for anyone needing to get to grips with carbon management in the built environment"--