1. Record Nr. UNINA9910459834103321

Autore	Crawford Robert <1978-, >
Titolo	Life cycle assessment in the built environment / / Robert H. Crawford
Pubbl/distr/stampa	London ; ; New York : , : Spon Press, , 2011
ISBN	1-135-24508-8 1-283-10233-1 9786613102331 1-135-24509-6 0-203-86817-X
Descrizione fisica	1 online resource (273 p.)
Disciplina	624.1/8
Soggetti	Building materials - Service life Buildings - Environmental aspects Building materials - Recycling Product life cycle Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Life Cycle Assessment in the Built Environment; Copyright; Contents; List of figures; List of tables; Foreword; Preface; Acknowledgements; Abbreviations; 1 Global environmental issues and the built environment; 1.1 Global warming and climate change; 1.2 Pollution; 1.3 Resource depletion; 1.4 Production and disposal of waste; 1.5 The built environment; 1.5.1 The built environment life cycle and its related environmental impacts; 1.5.1.1 Raw material extraction; 1.5.1.2 Manufacturing; 1.5.1.3 Construction; 1.5.1.4 Operation and maintenance 1.5.1.5 End-of-life (demolition, disposal, reuse and recycling)1.6 Summary; 2 Towards a sustainable built environment; 2.1 Minimizing the environmental impact of the built environment; 2.2 Designing for the environment: strategies for a sustainable built environment; 2.2.1 Resource efficiency; 2.2.2 Minimizing non-renewable resource consumption; 2.2.3 Minimizing pollution; 2.2.4 Designing for

disassembly; 2.2.5 Minimizing solid waste production; 2.2.6 Designing for recyclability; 2.2.7 Designing for durability; 2.2.8 Designing for adaptive reuse
2.3 An integrated approach to environmental design2.4 Environmental assessment: an essential component of environmental design; 2.5 Origins and historical perspective of environmental assessment; 2.6 Environmental assessment in the twenty-first century; 2.7 Approaches to environmental assessment; 2.7.1 Assessment tools; 2.7.2 Simulation tools; 2.7.3 Checklists and guidelines; 2.8 Summary; 3 Life cycle assessment; 3.1 What is life cycle assessment?; 3.1.1 Life cycle assessment framework; 3.1.2 An iterative approach; 3.2 Types of life cycle assessment; 3.2.1 Baseline life cycle assessment
3.2.2 Comparative life cycle assessment3.2.3 Streamlined life cycle assessment; 3.3 The four phases of life cycle assessment; 3.3.1 Goal and scope definition; 3.3.1.1 Goals; 3.3.1.2 Scope; 3.3.1.3 Functional unit; 3.3.1.4 System boundaries; 3.3.1.5 Data quality and scope; 3.3.2 Life cycle inventory analysis; 3.3.2.1 Data types; 3.3.2.2 Quantifying inputs and outputs; 3.3.3 Life cycle impact assessment; 3.3.3.1 Selection and definition of impact categories; 3.3.3.2 Classification; 3.3.3.3 Characterization; 3.3.3.4 Normalization, grouping and weighting; 3.3.3.5 Data quality analysis
3.3.4 Interpretation3.3.4.1 Identification of significant issues; 3.3.4.2 Evaluation of results - completeness, consistency and sensitivity; 3.3.4.3 Conclusions, limitations and recommendations; 3.4 How can life cycle assessment be used?; 3.4.1 Environmental improvement; 3.4.2 Strategic planning; 3.4.3 Public policy making; 3.4.4 Marketing and eco-labelling; 3.5 International LCA standard - ISO 14040 series; 3.6 Limitations of life cycle assessment; 3.6.1 Lack of knowledge and awareness; 3.6.2 Methodological gaps; 3.6.3 Geographic issues
3.6.4 Availability and quality of life cycle inventory data

Sommario/riassunto

Life cycle assessment enables the identification of a broad range of potential environmental impacts occurring across the entire life of a product, from its design through to its eventual disposal or reuse. The need for life cycle assessment to inform environmental design within the built environment is critical, due to the complex range of materials and processes required to construct and manage our buildings and infrastructure systems.After outlining the framework for life cycle assessment, this book uses a range of case studies to demonstrate the innovative input-output-based hybr