
Handbook Of Recycled Concrete And Demolition Waste Woodhead Publishing Series In Civil And Structural Engineering

Handbook of Recycling

Management, Processing and Environmental Assessment

A Complete Guide to the Principles, Strategies, and Best Practices for Sustainable
Landscapes

Glass Cullet

Handbook of Globalization and the Environment

New Trends in Recycled Aggregate Concrete

Waste and Byproducts in Cement-Based Materials

The Civil Engineering Handbook

State-of-the-art for Practitioners, Analysts, and Scientists

Volume 4: Shift to a Circular Economy

Select Proceedings of ASCM 2020

State of the Art Report of the RILEM Technical Committee 254-CMS

Thermal Cracking of Massive Concrete Structures

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A Design Handbook for Reuse and Recycling

New Trends in Eco-efficient and Recycled Concrete

Construction, Demolition and Disaster Waste Management

Handbook of Low Carbon Concrete

Proceedings of the 3rd RILEM Spring Convention and Conference (RSCC 2020)

Design, Durability and Performance

Recycled Aggregate Concrete Structures

The Carbon Footprint Handbook

Production, Demolition and Recycling

Proceedings of the 2017 fib Symposium, held in Maastricht, The Netherlands, June 12-14, 2017

Recycled and Artificial Aggregate, Innovative Eco-friendly Binders, and Life Cycle

Assessment
Pollution Prevention Handbook
The Sustainable Sites Handbook
An Integrated and Sustainable Approach
Handbook of Sustainable Concrete and Industrial Waste Management
Handbook of Research on Advancements in Environmental Engineering
Concrete Recycling
Handbook of Environmental Engineering
Handbook of advances in Alkali-activated Concrete
Recycling of Building Materials
Advances in Geotechnics and Structural Engineering
OCM 2015 - Optical Characterization of Materials - conference proceedings

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Woodhead Publishing
Series In Civil And
Structural Engineering*

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FOLEY BRIGGS

Handbook of Recycling CRC Press

Microwave Technology: A Powerful
Technique The first book to combine
microwave-assisted heating technology
and concrete technology (covering
production, demolition, and recycling),
Microwave-Assisted Concrete
Technology: Production, Demolition and

Recycling explains the underlying concepts and fundamentals involved in the microwave-assisted heating of concrete. While most books on microwave heating focus on the behavior of microwaves, this text centers on the response of materials subjected to microwaves, and specifically concentrates on materials used in the concrete industry. A ready reference for the design of microwave-based equipment, the book describes how microwave-assisted heating technology may be harnessed in the production, demolition, and recycling of concrete. It covers microwave-assisted applications, the design concepts of microwave heating systems (generators and applicators) used in microwave-assisted concrete-processing methods,

and process control techniques used to monitor the condition of concrete during the heating process. Learn How to use the Microwave-Assisted Heating Process for Industry The book is written from the perspective of modern practitioners in the construction industry, and addresses the technological, scientific, and environmental issues involved in replacing conventional approaches with microwave heating. The authors categorize the applications of microwave heating in concrete technology into three areas: microwave-assisted accelerated curing of concrete, microwave-assisted selective demolition and drilling of concrete, and the microwave-assisted recycling of concrete. They discuss sustainability and the environmental impact of

incorporating sustainable concrete production, demolition, and recycling using microwave-assisted heating technologies, and environmentally friendly microwave heating applications. This text covers: The basics of concrete-microwave field interactions Microwave-assisted concrete technologies for use in the production, demolition, and recycling of concrete as well as the control mechanisms required to ensure the efficiency of these methods The design of microwave heating applicators Microwave-Assisted Concrete Technology: Production, Demolition and Recycling does not require a familiarity with electromagnetism science and can be easily understood by civil engineers as well as by readers with little or no engineering background.

Management, Processing and Environmental Assessment Woodhead Publishing

Designing buildings and physical environments depends on social structure, social needs, economic data, environment, and technological development. Planning these environments is heavily influenced by cultural and regional need, the existing environment, and the materials available. Reusable and Sustainable Building Materials in Modern Architecture is an essential reference source that discusses the shaping of building design through culture and materials as well as the influence of environment on building design. Featuring research on topics such as passive design, ecological design, and urban design, this book is

ideal for academicians, specialists, and researchers seeking coverage on culture, environment, and building design.

A Complete Guide to the Principles, Strategies, and Best Practices for Sustainable Landscapes Springer Nature

This book gathers peer-reviewed contributions presented at the 3rd RILEM Spring Convention and Conference, held at Guimarães and hosted by the University of Minho, Portugal, on March 9-14, 2020. The theme of the Conference was "Ambitioning a Sustainable Future for Built Environment: comprehensive strategies for unprecedented challenges" which was aimed at discussing current challenges and impacts of the built environment on

sustainability. The present volume is dedicated to the topic 'shift to a circular economy' which is focussed on sustainability and covers the research and recent technologies on the use and development of sustainable materials and structural systems, as well as on recycling and reusing. It also covers the implementation of industrial processes leading to minimized waste, including digital fabrication and deconstruction, as well as integrative approaches that lead to the achievement of the concept of circular economy. Additionally, this topic covers research on novel or existing construction materials and systems based on local resources and regional practices. The following subtopics are included: industrialized construction systems minimizing waste; recycling and

reuse of materials and components; 4Ls: local constructions with local materials through local approaches for local development; Digital Manufacturing; design for deconstruction; smart demolition techniques; timber structures; Life-Cycle Assessment of construction materials and technologies; recycling of pavements and materials in roads.

Springer

Interest in green and sustainable design is growing throughout the world. Both national and local governments are active in promoting reuse and recycling in order to reduce the amount of waste going to landfill. This guide identifies how building designers and constructors can minimize the generation of waste at the design stage of a building project by

using reclaimed components and materials. Authoritative, accessible and much-needed, this book highlights the opportunities for using reclaimed components and materials and recycled-content building products for each element of a building, from structure and foundations to building services and external works. Current experience is illustrated with international case studies and practical advice. It discusses different approaches to designing with recycling in mind, and identifies the key issues to address when specifying reclaimed components and recycled materials in construction work. This book will be invaluable for building professionals including architects, specifiers, structural and service engineers, quantity surveyors,

contractors and facilities managers as well as students of architecture and civil engineering. Published with NEF *Glass Cullet* Springer Nature

This book comprises select proceedings of the International Conference on Trends and Recent Advances in Civil Engineering (TRACE 2020). The book focuses on the latest research developments in structural engineering, structural health monitoring, rehabilitation and retrofitting of structures, geotechnical engineering, and earthquake-resistant structures. The contents also cover the latest innovations in building repair and maintenance, and sustainable materials for rehabilitation and retrofitting. The contents of this book are useful for students, researchers, and professionals

working in structural engineering and allied areas.

Handbook of Globalization and the Environment IGI Global

A comprehensive guide for both fundamentals and real-world applications of environmental engineering. Written by noted experts, *Handbook of Environmental Engineering* offers a comprehensive guide to environmental engineers who desire to contribute to mitigating problems, such as flooding, caused by extreme weather events, protecting populations in coastal areas threatened by rising sea levels, reducing illnesses caused by polluted air, soil, and water from improperly regulated industrial and transportation activities, promoting the safety of the food supply. Contributors not only cover

such timely environmental topics related to soils, water, and air, minimizing pollution created by industrial plants and processes, and managing wastewater, hazardous, solid, and other industrial wastes, but also treat such vital topics as porous pavement design, aerosol measurements, noise pollution control, and industrial waste auditing. This important handbook: Enables environmental engineers to treat problems in systematic ways Discusses climate issues in ways useful for environmental engineers Covers up-to-date measurement techniques important in environmental engineering Reviews current developments in environmental law for environmental engineers Includes information on water quality and wastewater engineering Informs

environmental engineers about methods of dealing with industrial and municipal waste, including hazardous waste Designed for use by practitioners, students, and researchers, Handbook of Environmental Engineering contains the most recent information to enable a clear understanding of major environmental issues.

New Trends in Recycled Aggregate Concrete CRC Press

The protection of clean water, air, and land for the habitation of humans and other organisms has become a pressing concern amid the intensification of industrial activities and the rapidly growing world population. The integration of environmental science with engineering principles has been introduced as a means of long-term

sustainable development. The Handbook of Research on Advancements in Environmental Engineering creates awareness of the role engineering plays in protecting and improving the natural environment. Providing the latest empirical research findings, this book is an essential reference source for executives, educators, and other experts who seek to improve their project's environmental costs.

Waste and Byproducts in Cement-Based Materials Springer Nature

Corrosion of reinforcing steel is now recognized as the major cause of degradation of concrete structures in many parts of the world. Despite this, infrastructure expenditure is being unreasonably decreased by sequestration and the incredible

shrinking discretionary budget. All components of our infrastructure including highways, airports, water supply, waste treatment, energy supply, and power generation require significant investment and are subjected to degradation by corrosion, which significantly reduces the service life, reliability, functionality of structures and equipment, and safety. Corrosion of Steel in Concrete Structures provides a comprehensive review of the subject, in addition to recent advances in research and technological developments, from reinforcing materials to measurement techniques and modelling. This book contains not only all the important aspects in the field of corrosion of steel reinforced concrete but also discusses new topics and future trends. Part One of

the book tackles theoretical concepts of corrosion of steel in concrete structures. The second part moves on to analyse the variety of reinforcing materials and concrete, including stainless steel and galvanized steel. Part Three covers measurements and evaluations, such as electrochemical techniques and acoustic emission. Part Four reviews protection and maintenance methods, whilst the final section analyses modelling, latest developments and future trends in the field. The book is essential reading for researchers, practitioners and engineers who are involved in materials characterisation and corrosion of steel in concrete structures. Provides comprehensive coverage on a broad range of topics related to the corrosion of steel bars in concrete Discusses the

latest measuring methods and advanced modeling techniques Reviews the range of reinforcing materials and types of concrete

The Civil Engineering Handbook
Woodhead Publishing

This volume gathers the proceedings of the 3rd International RILEM Workshop on Concrete Durability and Service Life Planning (ConcreteLife'20), held in Haifa, Israel in January 2020. The papers cover a range of topics in concrete curing, cracking in concrete structures, corrosion of steel in concrete, thermal and hygral effects, concrete in cold climates and under high temperatures, recycling, alkali-silica reactions, chloride and sulfate attacks, marine structures, transport phenomena, durability design, microstructure of concrete and volume

changes, and life cycle assessment. The book also explores future trends in research, development, and practical engineering applications related to durable concrete construction, and focuses on the design and construction of concrete structures exposed to various environmental conditions and mechanical loading. Given its scope, it offers a valuable asset for all researchers and graduate students in the areas of cement chemistry, cement production, and concrete design.

State-of-the-art for Practitioners, Analysts, and Scientists John Wiley & Sons

First published in 1995, the award-winning Civil Engineering Handbook soon became known as the field's definitive reference. To retain its standing as a

complete, authoritative resource, the editors have incorporated into this edition the many changes in techniques, tools, and materials that over the last seven years have found their way into civil engineering research and practice. The Civil Engineering Handbook, Second Edition is more comprehensive than ever. You'll find new, updated, and expanded coverage in every section. In fact, more than 1/3 of the handbook is new or substantially revised. In particular you'll find increased focus on computing reflecting the rapid advances in computer technology that has revolutionized many aspects of civil engineering. You'll use it as a survey of the field, you'll use it to explore a particular subject, but most of all you'll use The Civil Engineering Handbook to

answer the problems, questions, and conundrums you encounter in practice.
Volume 4: Shift to a Circular Economy
CRC Press

This new handbook fills the need for in-depth coverage of concrete construction engineering and technology. It features discussions on what design engineers and contractors need to know about concrete materials and systems - one of the most versatile materials available. The Concrete Construction Engineering Handbook focuses on these important topics:

Select Proceedings of ASCM 2020
Woodhead Publishing

The concrete industry consumes thirty billion tons of aggregate annually, almost all from non-renewable natural sources. Demolition produces a growing

amount of materials which are legally usable and readily available. If not used locally they must be transported and landfilled. Also, demolition generally takes place close to new construction sites: recycling promotes shorter transportation distances, a must for improving the overall environmental footprint of the construction world. This book encompasses all aspects of this current trend: How recycled aggregates are obtained and their properties. Improving their quality through phase selection or separation. Incorporating concrete from demolition into the cement production process and the properties of the product obtained. What are the properties of concrete incorporating recycled concrete aggregates at various replacement

levels, throughout the lifecycle of the material, from the fresh state to the long-term, including durability and fire. How recycled concrete can be optimised for various uses. How this new structural material can be managed in reinforced concrete construction. Solid experience from a series of experimental sites, and drawing on the Recybéton project, which lasted more than 5 years and gathered about 50 partners (from both academia and industry). Specific issues in recycled concrete quality control. National practices in the most advanced countries, and the main national and European standards. Achieving a sustainable process.

State of the Art Report of the RILEM Technical Committee 254-CMS IGI Global

Handbook of Recycled Concrete and Demolition Waste Elsevier
Thermal Cracking of Massive Concrete Structures Springer
 Construction and Demolition Waste (CDW), from the construction, maintenance, renovation and demolition of buildings and structures, represents a large proportion of the waste in industrialized societies. Compared to other forms, such as household waste, more than 90% of CDW can be used as a resource and a substitute for construction materials, especially for primary, natural raw materials. Reuse, recovery and recycling depends on the quality and market for the materials, and the environmental impact of the processes for conversion of CDW from old structures to its use in new

structures. However, the utilization today of CDW products as secondary resources is marginal. Most CDW is deposited or used as fill material, and the opportunities of high quality recycling are generally neglected. This book presents the opportunities for the sustainable and resource efficient utilisation of CDW, focusing on recycling of concrete and masonry as the major forms of CDW. The recycling of gypsum, timber, mineral wool, asphalt and other types are also described. Its aim is to present a chain of value and material streams in the transformation of obsolete buildings and structures into new buildings and structures. It takes a holistic view, focusing on the lifecycle economy (the circular economy) and integrated management aspects of

various scenarios ranging from high industrial urban renewal to debris removal and management after disasters and conflicts. It is based on the author's 35 years of research and development combined with practical international experience within the demolition and recycling area. It addresses students, architects, civil engineers, building owners, public authorities and others working in urban planning, demolition and resource management in the building and construction sector and in the reconstruction of damaged buildings after disasters and wars.

Science and Technology of Concrete Admixtures Woodhead Publishing Thorough and detailed, The Carbon Footprint Handbook encompasses all

areas of carbon footprint, including the scientific elements, methodological and technological aspects, standards, industrial case studies, and communication of carbon footprint results. Written and edited by an international group of experts, the far-ranging topics on carbon footprinting are divided into three sections comprising chapters focused on methodology, modeling, and case studies. The concepts of carbon footprint and climate change are no longer new to the world. As a result, there is increasing interest in quantifying and reducing the carbon footprint around the world, from industrial to individual levels. This book describes modeling aspects and calculations of carbon footprint in organizations and production. It

emphasizes the importance of locating non-polluting energy sources as well as sustainability. The book also provides case studies offering a wealth of information on practices and methods in detecting and addressing carbon footprint. The Carbon Footprint Handbook is an important reference that discusses, in depth, the essential details of carbon footprint assessment. It uses research and case studies on methods and practices from locations around the world including China, India, Spain, and Latin America. It demonstrates that the problems of carbon footprint are indeed worldwide while showing how they can be addressed in myriad areas of life, from industrial to personal action. *Building with Reclaimed Components and Materials* CRC Press

Proponents of globalization argue that it protects the global environment from degradation and promotes worldwide sustainable economic growth while opponents argue the exact opposite. Examining the local, national, and international impacts of globalization, the Handbook of Globalization and the Environment explores strategies and solutions that support healthy economic growth, protect the environment, and create a more equitable world. The book sets the stage with coverage of global environmental issues and policies. It explores international sustainable development, the evolution of global warming policy, transborder air pollution, desertification, space and the global environment, and human right to water. Building on this foundation, the editors

discuss global environmental organizations and institutions with coverage of the UN's role in globalization, the trade-environment nexus, the emergence of NGOs, and an analysis of the state of global environmental knowledge and awareness from an international and comparative perspective. Emphasizing the effects of increasingly integrated global economy on the environment and society, the book examines environmental management and accountability. It addresses green procurement, provides an overview of U.S. environmental regulation and the current range of voluntary and mandatory pollution prevention mechanisms in use, explores a two-pronged approach to establishing a

sustainable procurement model, and examines a collaborative community-based approach to environmental regulatory compliance. The book concludes with an analysis of controversial issues, such as eco-terrorism, North-South disputes, environmental justice, the promotion of economic growth through globalization in less developed countries, and the ability of scientists to communicate ideas so that policy makers can use science in decision making.

Proceedings of the 2nd American University in the Emirates International Research Conference, AUEIRC'18 – Dubai, UAE 2018 Springer Nature

The book presents high-quality research papers presented at the 2nd American University in the Emirates International

research conference, AUEIRC'18, organized by the American University in the Emirates, Dubai, held on November 13th-15th, 2018. The book is broadly divided into four sections: Sustainability and Smart Technology, Sustainability and Social Responsibility, Sustainability, Human Security and Legislation, Sustainability and Education. The topics covered under these sections are sustainable smart technology such as developing green curriculum for information technology, use ultrasonic velocity to predict quality of wheat, improve security features for visa system, factors affecting the cost of production of electricity and desalination plants, impact of smart traffic sensing in smart cities, smart healthcare system, simulation of Grey wolf optimization

algorithm in painting digital forensics. The topics covered for sustainability and creative industries such as sustainable concrete production, multimedia applications in digital transformation art, integrating biomimicry principles in sustainable architecture. Sustainability, human security and legislation covered topics of urban performance and sustainable environment, Eco-certification as response on climate change, the criminal offence of tax evasion in law: case study, skills engineering in sustainable counter defense against Cyber extremism, the international law and challenges of trans-boundary water resources governance, the legal status of nuclear energy: case study, sustainable energy development and nuclear energy

legislation in UAE, corruption specific safety challenge, environmental management and sustainability, sustainable farming models for desert agro-ecosystems, future directions of climate change, earth and built environment towards new concept of sustainability, institution building from emotional intelligence perspective, virtue ethics, technology and sustainability, the role of humor in a sustainable education, HEIs practices and strategic decisions toward planning for sustainable education programs, TQM in higher education for sustainable future. The papers in this book present high-quality original research work, findings and practical development experiences.

A Design Handbook for Reuse and

Recycling Springer Nature

Advances in Construction and Demolition Waste Recycling: Management, Processing and Environmental Assessment is divided over three parts. Part One focuses on the management of construction and demolition waste, including estimation of quantities and the use of BIM and GIS tools. Part Two reviews the processing of recycled aggregates, along with the performance of concrete mixtures using different types of recycled aggregates. Part Three looks at the environmental assessment of non-hazardous waste. This book will be a standard reference for civil engineers, structural engineers, architects and academic researchers working in the field of construction and demolition waste. Summarizes key

recent research in recycling and reusing concrete and demolition waste to reduce environmental impacts Considers techniques for managing construction and demolition waste, including waste management plans, ways of estimating levels of waste, and the types and optimal location of waste recycling plants Reviews key steps in handling construction and demolition waste
New Trends in Eco-efficient and Recycled Concrete KIT Scientific Publishing
This book presents select proceedings of National Conference on Advances in Sustainable Construction Materials (ASCM 2020) and examines a range of durable, energy-efficient, and next-generation construction materials produced from industrial wastes and by-products. The topics covered include

sustainable materials and construction, innovations in recycling concrete, green buildings and innovative structures, utilization of waste materials in construction, geopolymer concrete, self-compacting concrete by using industrial waste materials, nanotechnology and sustainability of concrete, environmental sustainability and development, recycling solid wastes as road construction materials, emerging sustainable practices in highway pavements construction, plastic roads, pavement analysis and design, application of geosynthetics for ground improvement, sustainability in offshore geotechnics, green tunnel construction technology and application, ground improvement techniques and municipal solid waste landfill. Given the scope of

contents, the book will be useful for researchers and professionals working in the field of civil engineering and especially sustainable structures and green buildings.

Woodhead Publishing

This book is the fourth, in the series of five, on sustainable construction materials and like the previous three, it is also different to the norm. Its uniqueness lies in using the newly developed, Analytical Systemisation Method, in building the data-matrix sourced from 751 publications, contributed by 1402 authors from 513 institutions in 51 countries, from 1970 to 2017, on the subject of processed waste glass (glass cullet) as a construction material, and systematically analysing, evaluating and modelling this

information for use of glass cullet as cement, aggregate or filler in concrete, ceramics, geotechnics and road pavement applications. Environmental issues, case studies and standards are also discussed. The work establishes what is already known and can be used to further progress the use of sustainable construction materials. It can also help to avoid repetitive research and save valuable resources. The book is structured in an incisive and easy to digest manner and is particularly suited for researchers, academics, design

engineers, specifiers, contractors, and government bodies dealing with construction works. Provides an extensive source of valuable database information, supported by an exhaustive list of globally-based published literature over the last 40-50 years Offer an analysis, evaluation, repackaging and modeling of existing knowledge on sustainable construction practices Provides a wealth of knowledge for use in many sectors relating to the construction profession