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Exploring artificial intelligence applications in construction and demolition waste management: a review of existing literature

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Abstract: This study presents a comprehensive analysis of artificial intelligence (AI) applications in construction and demolition waste management (CDWM), examining current trends, limitations, and opportunities for enhanced sustainability. Through a systematic literature review and bibliometric analysis across multiple academic databases, the research identifies eight major subfields where AI significantly impacts CDWM processes, particularly in planning, design, forecasting, and monitoring activities. The findings reveal that while AI demonstrates considerable potential in various aspects of waste management, its application in waste collection remains constrained by dependence on physical machinery. The study highlights the versatility of machine learning and natural language processing technologies, while emphasising the need for expanded research into innovative recycling approaches to maximise material reuse. Despite limitations regarding literature selection bias and context-specific generalisability, this research provides valuable insights for practitioners and policymakers by illustrating how AI technologies can improve operational efficiency, minimise environmental impact, and enhance resource recovery in construction projects. The study's unique contribution lies in its comprehensive review of AI applications in CDWM, addressing research gaps while proposing new perspectives on optimising waste management practices through emerging technologies. This work serves as a foundation for future research, particularly in exploring AI applications for recycling processes and examining their implications for sustainable waste management practices across all operational stages.

Keywords: Waste management; Artificial intelligence; Construction demolition waste; Bibliometric analysis; VOSviewer; Systematic literature review.

1. Introduction

The global construction industry has witnessed a paradigm shift towards sustainable practices and efficient resource utilisation [1]. Central to this transformation is the integration of Artificial Intelligence (AI) technologies in CDWM, offering unprecedented opportunities for optimising waste processes, enhancing environmental sustainability, and driving economic efficiency [2]. As construction activities continue to expand worldwide, CDW poses significant challenges, including waste generation, collection, sorting, recycling, and disposal [3]. Traditional approaches to CDWM often fall short in addressing these challenges comprehensively, necessitating innovative solutions that leverage AI capabilities [4].

The adoption of AI in CDW represents a promising frontier in the quest for sustainable development and CE principles in construction [5]. AI technologies, including machine learning, computer vision, natural language processing, and robotics, offer unique capabilities for automating waste processes, predicting waste generation patterns, optimising waste collection routes, and identifying opportunities for material reuse and recycling [6]. By harnessing the power of AI, construction companies, waste management facilities, and policymakers can improve operational efficiency, minimise environmental impact, and maximise resource recovery throughout the lifecycle of construction projects [7].

Despite the recognised advantages of Artificial Intelligence (AI) in CDWM, significant gaps persist in the research concerning its application trends, challenges, and future opportunities. A review of existing literature indicates that while there are numerous studies addressing AI in broader waste management contexts, specific insights into AI applications in CDWM remain limited.

To effectively identify these gaps and formulate relevant research questions, it is essential to summarise findings from existing review papers that touch on AI and CDWM. For instance, recent publications such as Wu and Li [8], Iyiola, Shakantu [9], Sinthiya, Chowdhury [10] and Islam, Sandanayake [11] have explored various digital technologies, including Building Information Modelling (BIM), Internet of Things (IoT), and blockchain, highlighting their potential roles in enhancing waste management practices. However, these studies often lack a comprehensive analysis of AI's specific contributions to CDWM, which underscores the need for further investigation. The key research questions guiding this study are:

- What limitations hinder the implementation of AI applications in CDWM?
- What future opportunities exist for enhancing the use of AI in managing CDW?

The primary objective of this research is to identify and analyse the barriers affecting the adoption of AI in CDWM practices. While a brief overview of current AI applications may be included for context, the emphasis will be on understanding the challenges faced and exploring future opportunities for improvement. This research aims to enhance the utilisation of AI within CDWM and provide valuable insights into its potential impact on waste management practices. The study will begin with an introduction to solid waste management processes, followed by a focused literature review that employs systematic and bibliometric analysis to highlight key trends and research gaps. This analysis will not only summarise existing studies but also critically evaluate their findings to establish a clear understanding of what has been addressed and what remains unexplored.

Finally, the study will discuss potential future research directions, environmental considerations, and offer recommendations for further exploration and action. By addressing these gaps, this research seeks to contribute significantly to the body of knowledge surrounding AI applications in CDWM, ultimately supporting more sustainable practices within the construction industry.

2. Background

Understanding the role of AI in waste management necessitates considering its impact across various sectors beyond construction and within the broader scope of municipal solid waste management. This section encompasses of a literature review which explores not only how municipal solid waste and CDW are managed but also delves into a brief history of AI, its applications in the construction industry as a whole, and how AI can be leveraged for managing CDW. The aim is to offer a comprehensive overview of the topic area, enabling a thorough examination of previous studies within this research and identification of any recurring patterns and gaps in existing research.

2.1. Brief history of AI

Artificial intelligence (AI) is defined as the replication of human intelligence by computers [12]. The earliest research done on the subject of AI can be traced back to around the mid-20th century. The progress of AI can be divided into several paradigms over time. At first, during the 1950s-1960s decades, the field of AI experienced the emergence of "GOFAI" (Good Old-Fashioned Artificial Intelligence) paradigm which was centred on symbolic reasoning and problem-solving [13].

Next, beginning from the late 1970s through to the early 1980s, a paradigm identified as "Expert Systems" arose that prioritised rule-based systems and knowledge representation. Finally, from 2010 till now, there has been predominance of "machine learning," which has seen advancements in neural networks and deep learning as well as data-driven approaches [14].

Recent advancements in AI applications have significantly accelerated growth and expanded applications across key subfields such as machine learning, robotics, natural language processing, computer vision, knowledge-based systems, automated planning and scheduling, optimisation, and emerging areas like multimodal and agentic AI [6, 15].

2.2. Municipal solid waste management: Challenges and best practices

Municipal solid waste (MSW), as defined by Wang, Tang [16], comprises waste originating from urban dwellers and businesses operating within urban areas. Due to its heterogeneous composition and associated hazards, MSW poses a substantial threat to both the environmental and public health, while also contributing significantly to greenhouse gas emissions [17]. It encompasses various materials such as food, metals, glass, textiles, and plastics [18]. These categories of waste can be broken down to understand how they are managed.

A detailed examination of food waste reveals alarming statistics, with an annual disposal of 931 million tons globally, resulting in considerable economic losses and environmental ramifications, notably contributing to 3.3 gigatons of carbon emissions attributed to supply chain losses and consumer waste [19-21]. Despite existing solutions like surplus food redistribution programs and supply chain enhancements, limitations persist due to communication inefficiencies, organisational rigidity, and insufficient research into various stakeholders throughout the food supply chain [22-24].

Textile waste presents another significant environmental concern, with an annual production of 1.92 million tons, despite industry efforts to adopt sustainable practices [25]. Despite initiatives to mitigate environmental impact, the textile industry remains a major contributor to global water pollution [25]. Challenges such as material complexity, lack of cost-effective recycling technologies, and quality issues persist, prompting exploration of AI applications to enhance efficiency and sustainability, particularly in recycling efforts [26].

Similarly, manufacturing waste, amounting to 280 million tons globally, faces substantial financial losses exceeding $861 billion annually, primarily due to quality issues and inadequate planning [27]. While landfill, incineration, and composting are common waste management methods, their impact on the environment is severe, contributing to an increase in global carbon emissions.

Moreover, recycling faces challenges such as material contamination [28, 29]. Efforts to address these challenges involve the integration of AI technologies, including predictive analytics for waste forecasting, computer vision for defect identification, and IoT for process optimisation.

2.3. Existing practices in CDWM

The construction industry accounts for 33% of global carbon emissions, presenting an opportunity to save £130 million in the UK alone with a mere 5% reduction in waste [30]. Despite the vast potential for recycling of CDW, exceeding 10 billion tons annually worldwide, progress towards achieving a CE remains limited [31]. CDW typically includes excavated soil, concrete, brick, tile, wood, glass, timber, aggregates, plastics, cardboard, and sand, among others [32].

2.3.1. Emerging practices

One method of managing this waste is by recycling the waste materials into new products. Concrete, for instance, can be repurposed by grinding it into aggregate for the creation of new concrete, demonstrating the potential for sustainable practices [33-36]. Wu [37] suggested that the lack of research into recyclability issues for materials like glass, timber, and plastic, along with their limited applications, could be a contributing factor to the lack of adoption of material recycling. Additionally, Ajayi, Oyedele [38] contended that the industry's rigid culture and the high costs associated with waste management might also play significant roles.

Scholars have theorised that an effective waste management approach involves calculating waste across the entire project's lifecycle and addressing waste proactively at the design stage [37, 38]. Best practices recommended by Villoria Saez, del Río Merino [7] encompassed using materials with a high recycled content [39, 40], precisely tracking and controlling quantities of CDW [41, 42], on-site segregation [40-44], distributing small containers in working areas [42], and reducing excess material orders [42, 44].

Additionally, Papamichael, Voukkali [36] underscored the advantages of integrating CE (CE) principles, such as recycling and reuse initiatives, to enhance the efficient utilisation of natural resources and diminish waste generation. The CE practices encompass a comprehensive set of strategies delineated within the "9R framework," elucidating the essential steps necessary for effective resource management aimed at achieving zero waste. The 9Rs stand for Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle and Recover [45].

2.3.2. Challenges

The implementation of these measures encounters various challenges, including studies indicating that structures with lower occupancy rates may face greater difficulty in adopting waste management strategies due to their smaller scale [7]. Additionally, research suggests that obstacles such as unregulated disposal practices, barriers hindering implementation, and the necessity for policy alignment have been recognised as impediments to the effective enactment of CE principles in waste management [46-48].

2.4. History of AI in construction and demolition waste management

Over time, the utilisation of artificial intelligence (AI) in CDWM techniques has undergone significant growth. Initially, conventional approaches such as cost-benefit analysis and optimisation techniques were predominant, as highlighted by Shen, Tam [49]. Studies on optimisation techniques date back to the 1970s, with subsequent exploration of subfields like knowledge-based systems and robotics occurring primarily between 1980 and the 2000s, albeit with limited research output, Abioye, Oyedele [6]. However, with advancements in AI technologies and growing recognition of the inefficiency of traditional methods, the industry has expanded its focus to encompass sustainability aspects, including social, environmental, and economic benefits, as proposed by Villoria Saez, del Río Merino [7].

The pursuit of sustainable CDWM practices requires a collaborative effort to address challenges, embrace innovative solutions, and navigate a path that balances economic feasibility with environmental responsibility. Correspondingly, the use of AI in waste management aligns with the principles of the CE, emphasising the 3R approach - reduce, reuse, and recycle [3] - which involves reducing raw material consumption, reusing materials, implementing appropriate recycling mechanisms, and minimising waste generation [50]. By developing predictive models and utilising AI technologies, CDW can be minimised, leading to more sustainable practices [51, 52].

While researchers have primarily focused on developing new models and algorithms for waste management, there remains a notable scarcity of holistic literature reviews that analyse current practices in CDWM. Addressing these research gaps prompts the following questions:

- What existing AI practices are utilised in managing CDW?
- How have these AI technologies contributed to each individual process of waste management in construction?

Exploring these questions is essential for understanding the underutilised potential of AI solutions in CDWM. A comprehensive review of the literature will help to identify the current applications of AI, assess their effectiveness across various waste management processes, and uncover the challenges that hinder broader implementation.

3. Methodology

This section elaborates on the research methodology used in this study, which involves conducting a comprehensive literature review as well as a bibliometric and a scoping review to identify emerging trends in the literature [53]. A scoping review was conducted to explore the breadth of existing research and identify gaps in knowledge, as the field has not yet been comprehensively reviewed [54]. Accordingly, this study adopts a qualitative paradigm that aligns with the research objectives, facilitating the exploration, analysis, and interpretation of existing literature on AI adoption in CDWM.

3.1. Systematic analysis

A systematic analysis, as defined by Grant and Booth [55], follows predetermined criteria and procedures, and is a methodical and structured technique to reviewing and synthesising the body of literature that has already been written about a given subject. It involves systematically searching multiple databases and sources to identify relevant studies, which are then selected based on predetermined inclusion and exclusion criteria.

Data from selected studies are extracted, analysed, and synthesised to answer specific research questions or objectives. This methodology guarantees transparency in research, thereby offering a comprehensive understanding of the topic and minimising potential biases. Consequently, this approach was selected as it aligns closely with the objectives of this study.

3.1.1. Data screening

An initial phase of literature review was conducted to identify pertinent keywords essential for sourcing research papers relevant to the area of study. Identified limitations and research gaps in the topic area were visually represented through tables and diagrams. This approach facilitated the extraction of comprehensive insights from the literature, enabling a thorough exploration of the research questions and objectives.

To gather relevant literature, database queries were executed on platforms including Scopus, Google Scholar, Science Direct, and Research Direct, spanning the period from 2000 to 2024. Scopus was prioritised due to its comprehensive collection of scholarly literature, analytical tools, and data from official publications in other databases [56]. Other databases served as supplementary sources to obtain readable versions and additional supporting information. The databases listed above were chosen for their wealth of peer-reviewed publications in related fields.

Table 1. Inclusion and exclusion criteria for paper selection

Category	Inclusion Criteria	Exclusion Criteria
Time Period	Publications from 2000 to 2024	Publications before 2000 or after January 2024
Language	English language publications only	Non-English publications
Database Sources	Scopus (primary source), Google Scholar, Science Direct, Research Direct	Other databases not mentioned
Search Field Scope	Article title, abstract, and keywords	Full-text searches
Document Types	Articles, reviews, conference papers, book chapters	Retracted papers, editorials, notes
Subject Areas	Engineering (ENGI), Environmental Science (ENVI), Energy (ENER), Computer Science (COMP), Materials Science (MATE), Mathematics (MATH), Decision Sciences (DECI)	Other subject areas not directly related to CDWM and AI
AI Technologies Keywords	"Artificial Intelligence", "Machine Learning", "Robot", "Natural Language Processing", "Computer Vision", "Smart Sensors and IoT", "Optimisation", "Decision Support System", "Simulation", "Virtual Reality", plus additional AI subfields (machine reasoning, automated planning, cloud computing)	Papers not addressing these AI-related technologies
Waste Management Keywords	"Construction waste", "Demolition waste", "Construction and demolition waste"	Other waste categories not related to construction and demolition
Excluded Content Keywords	N/A	"Compressive Strength", "Concrete Mixtures", "Tensile Strength"

In Scopus, the search criteria were set to "Article title, Abstract, Keywords," employing keywords such as "Natural Language Processing," "Artificial Intelligence," "Robotics," "Computer Vision," "Machine Learning," "Smart Sensors and IoT," "Optimisation," "Decision Support Systems," and "Simulation and Virtual Reality," in conjunction with "Construction waste" and "Demolition waste." Initially, the search yielded only 50 relevant papers on CDW from Scopus (refer to the Appendix). However, broadening the scope to include other AI subfields, such as machine reasoning, automated planning, and cloud computing, resulted in the identification of 610 CDW-related papers post title and abstract screenings (refer to the Appendix).

The initial search yielded only 50 relevant papers on construction and demolition waste (CDW) from Scopus. This limited result prompted a re-evaluation of our search strategy. We expanded our search terms to include additional AI subfields such as machine reasoning, automated planning, and cloud computing, which are relevant to waste management but may not have been captured by the initial keywords. We also broadened the scope to include papers that discussed AI applications in related areas of construction management that could potentially be applied to waste management.

This expanded search resulted in the identification of 610 CDW-related papers after title and abstract screenings. The significant increase in results can be attributed to:

- The inclusion of additional AI-related keywords that captured a wider range of relevant technologies.
- The consideration of papers that discussed AI applications in broader construction management contexts, which could have

implications for waste management.

- The relaxation of strict co-occurrence requirements for AI and waste management terms, allowing for papers that discussed these concepts separately but could be relevant when combined.

This expansion was theoretically grounded in the understanding that AI applications in construction are often transferable across various aspects of the industry, including waste management. The final search string and its development process are documented in the Appendix for transparency and replicability. Table 1 presents the inclusion and exclusion criteria used for paper selection, ensuring a systematic and rigorous approach to identifying relevant studies.

The selected timeframe (from 2000 to 2024) was chosen to identify trends and gaps in the adoption of AI within the construction industry as research conducted during this span highlights the heightened research interest in specific AI subfields, such as machine learning and computer vision [57] and with a more heightened interest in later years, as the subject area of AI for CDM experienced a surge in popularity starting from 2011, with a consistent upward trend. Table 1 outlines the specific inclusion and exclusion criteria applied during the selection process of the 610 papers analysed in this study, ensuring transparency and methodological rigor. Notably, research activities were initiated as early as 2002 and the notable decline in research output observed in 2024 can be attributed to the absence of research papers published beyond January 2024 as in Figure 1.

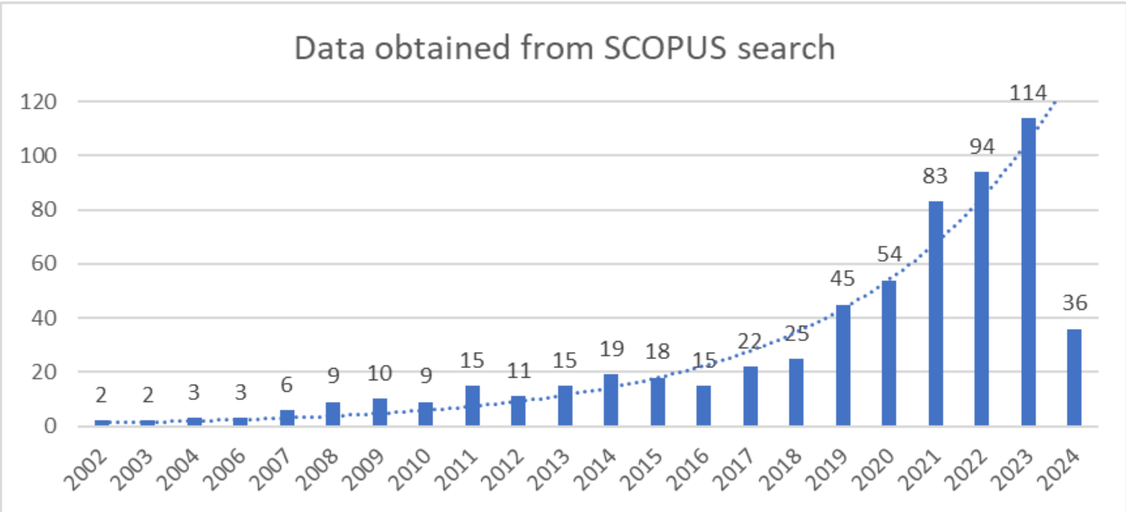

Figure 1. Number of publications per year found on Scopus

The decision to limit the search to English-language articles was crucial due to the predominant use of English in academic writing, enabling access to a wide range of peer-reviewed publications and ensuring diverse perspectives within the chosen timeframe. While acknowledging potential language bias, this decision is vital for consistency and coherence in analysing AI adoption trends in the specified industry, facilitating comprehensive synthesis of information and nuanced analysis.

3.1.2. Selection criteria

The criteria for selecting AI applications for analysis were methodically established to ensure a systematic and focused examination. The following parameters guided the selection process:

1. *Relevance to Industry Focus*

AI applications were chosen based on their direct relevance to the subject area, i.e. CDW. Emphasis was placed on selecting technologies and companies actively engaged in addressing industry-specific challenges.

2. *Innovation and Advancement*

Preference was given to AI applications at the forefront of innovation and advancement within their respective domains. This criterion aimed to capture the latest developments in AI technology adoption, ensuring the analysis reflects current industry trends.

3. *Diversity in AI subfield and applications*

The selection process aimed to encompass a diverse range of AI application areas, including but not limited to Natural Language Processing, Robotics, Computer Vision, Machine Learning. This diversity facilitated a comprehensive exploration of AI's multifaceted impact on the industry.

4. *Sustainability Focus*

Particular emphasis was placed on AI applications that prioritise sustainability and aim to mitigate environmental impact. This criterion was chosen to align closely with the overarching objective of tackling waste management challenges within the industry.

5. *Availability of Comprehensive Information*

The feasibility of obtaining detailed information about the AI applications under consideration was a key factor. AI subfields and applications with readily accessible and comprehensive data were prioritised to ensure the thoroughness of the analysis.

6. *Industry Recognition and Influence*

Recognised industry leaders and influential companies in the AI landscape were included in the analysis to provide a well-rounded perspective on prevalent practices and trends.

These criteria collectively established a sturdy groundwork for the curation of AI applications in waste management, enhancing the precision and relevance of the following analysis. The overarching aim is to ascertain the effectiveness of these adoptions and evaluate their potential applicability in the construction industry. IoT and smart sensors are categorised as enablers rather than AI subfields in this review because they primarily function as data collection and transmission tools that support AI applications. These technologies provide the essential infrastructure for real-time monitoring in waste management, feeding information to AI algorithms for analysis rather than performing complex processing themselves [58]. For example, IoT-enabled smart bins collect fill-level data for AI-powered optimisation systems but do not conduct the intelligent analysis characteristic of AI [59]. This classification maintains methodological clarity by distinguishing between the data acquisition layer (IoT and sensors) and the intelligent processing layer (AI subfields like machine learning) [60]. This distinction acknowledges their crucial role in creating data-rich environments while maintaining focus on the AI technologies directly responsible for waste management optimisation and decision-making processes.

3.2. Bibliometric analysis

According to Aria and Cuccurullo [61], a bibliometric analysis provides significant insights into research productivity, impact variables, and knowledge domains by quantifying the influence and connections among academic publications. The adoption of this method in the methodology was influenced by the large volume of research articles intended for analysis. This approach involves collecting data from bibliographic databases, in Scopus, scrutinising citation networks, and employing statistical and computational techniques. VOSviewer was selected for its user-friendly interface and proficiency in this domain.

VOSviewer is an open-source software program that offers flexible visualisation capabilities for examining bibliometric networks and conducting advanced investigations into research clusters to identify current patterns and anticipate future trends [62]. In the relevant research articles retrieved from Scopus, a total of 4912 keywords were identified. Subsequently, 50 keywords were selected for analysis by eliminating irrelevant terms, with a minimum occurrence threshold set at 10.

Figure 2 illustrates the relationship of keyword co-occurrence; wherein coloured circles represent nodes for keywords occurring more than 10 times. Node size corresponds to the frequency of occurrence, with "recycling" and "construction demolition waste" being the most frequent, each appearing over 200 times. The thickness of connecting lines indicates co-occurrence strength; notably, "CDW" and "recycling" exhibit the strongest link, followed by "recycling" and "optimisations."

The network comprises of six distinct colour clusters, reflecting different themes based on keyword co-occurrence. The purple cluster pertains to CDW processes and recycling methods, while other clusters focus on AI applications in CDWM. The blue and red clusters emphasise machine learning, robotics, and computer vision methods, whereas the yellow, green, and orange clusters centre on decision support, computer models, and genetic algorithms.

Considering the selected keywords span the past twenty-four years, understanding their temporal behaviour is crucial for discerning research trends. An analysis of thematic evolution, adapted from Dodampegama, Hou [57], shows how similar keywords developed across five distinct timeframes from 2000 to 2023. A closer look reveals that while recycling and demolition were prominent themes between 2000 and 2006, research gradually shifted towards a focus on computer vision and image processing from 2008 to 2011. In recent years (2020-2023), deep learning, robotics, and infrared devices emerged as key AI-related themes. Although the diagram reflects research trends up to July 2023, it provides valuable insights into recent developments in the field of CDW.

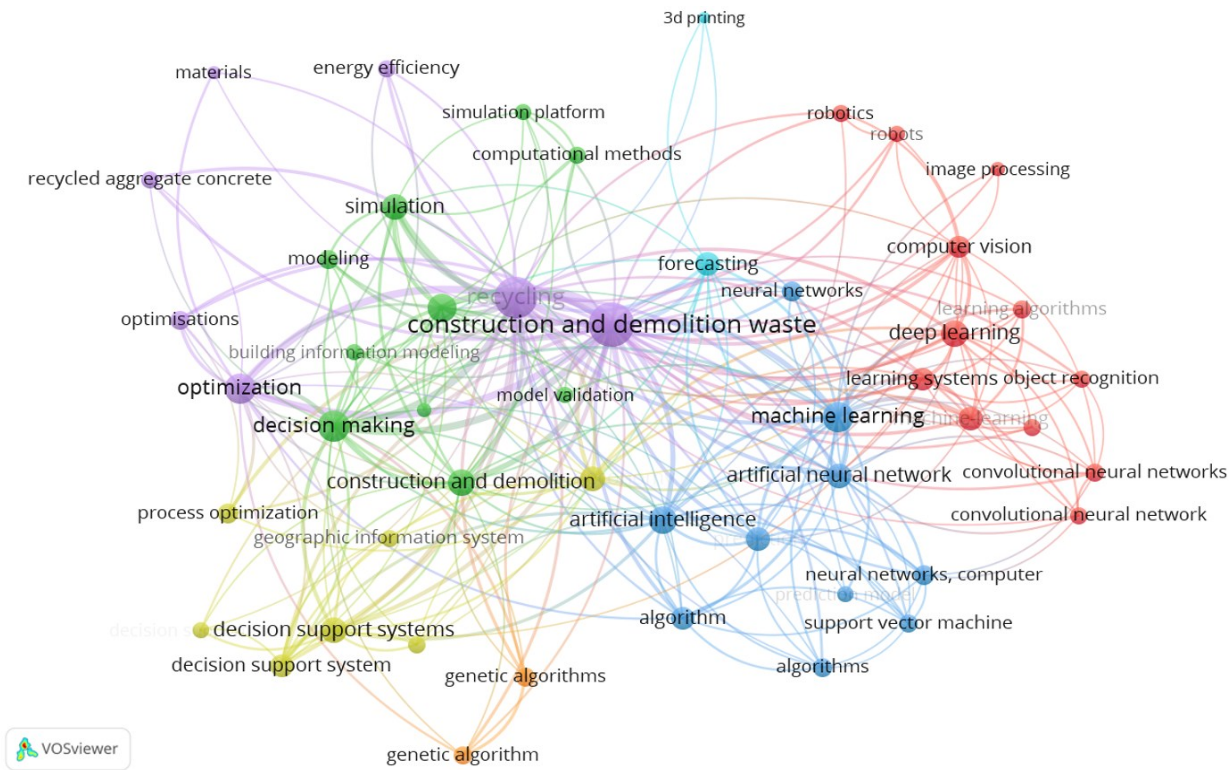

Figure 2. Keyword co-occurrence with nodes for keywords >10 occurrences

4. Results

This section elucidates the identified AI practices in CDWM obtained through bibliometric and systematic analyses, while also acknowledging their strengths and juxtaposing the findings with prior research and studies. The AI applications were subsequently categorised into prevalent waste management processes to discern gaps in applications. Subsequently, limitations associated with AI utilisation were examined for each application, followed by an exploration of case studies involving companies that have developed AI-enhanced software and processes for CDWM.

4.1. Existing AI subfields employed in CDWM

4.1.1. Machine learning

Machine Learning plays a pivotal role in forecasting the volume of waste generated in construction projects and assessing the potential for material reuse, thereby offering a pathway towards waste reduction [63]. Consequently, the fusion of machine learning and predictive analytics has the potential to redefine the management of CDW. Additionally, artificial neural networks, support vector machines, and linear regression have been widely employed as machine learning (ML) techniques for waste generation (WG) prediction [64, 65]. Other researchers have applied advanced statistical methodologies and machine learning techniques such as k-nearest neighbours and deep learning algorithms to produce precise estimations of waste generation rates [66, 67].

Machine learning (ML) algorithms have demonstrated varying levels of performance in waste prediction models for CDWM, with specific metrics highlighting their strengths and limitations. For instance, artificial neural networks (ANNs) have achieved prediction accuracies of up to 94% for waste generation rates when trained on large datasets, but they require significant computational resources for training and deployment. Support vector machines (SVMs), while computationally less demanding, have shown slightly lower accuracy rates of around 85-90% in similar tasks. Gradient boosting methods, such as XGBoost, have been particularly effective in handling small datasets with high dimensionality, achieving prediction accuracies exceeding 92% while maintaining relatively low computational overhead. On the other hand, deep learning models like convolutional neural networks (CNNs) have been employed for more complex tasks, such as image-based waste classification, with reported accuracies surpassing 95% but at the cost of higher energy consumption due to GPU reliance.

Comparatively, simpler algorithms like linear regression and k-nearest neighbours (k-NN) are easier to implement and require minimal computational resources but are less effective in capturing non-linear relationships in waste generation patterns, resulting in lower accuracies (70-80%). These performance metrics underscore the importance of selecting an appropriate ML algorithm based on the specific requirements of a CDWM task, such as dataset size, complexity, and available computational resources.

These predictive models facilitate the anticipation of both recycled and general waste quantities resulting from deconstruction and demolition activities [68], projection of the overall carbon footprint of buildings across their life cycles during the design phase [69, 70], and estimation of the reusability potential of structural elements prior to demolition, thereby offering insights into macroeconomic factors influencing waste management strategies [71].

In addition, Ashokkumar and Varghese [72] conducted a study with the aim of developing models for waste generation tracking, revealing that the implementation of BIM 3D waste quantification can result in a significant 25% reduction. However, the study had limitations in terms of an in-depth comparative analysis, which could have provided a clearer understanding of the strengths and limitations of employing BIM for waste management. Furthermore, the use of survey data integrated into the 3D model may introduce potential biases that the authors did not fully consider, thereby impacting the accuracy of waste estimation.

Nevertheless, by utilising this technology, project stakeholders can devise tailored waste management protocols and evaluate their efficacy, thereby establishing a benchmark for waste minimisation efforts [73].

4.1.2. Computer vision

The sorting and segregation of waste remain labour-intensive processes, characterised by time-consuming tasks and error-prone outcomes, thus hindering proper recycling measures. CDW is frequently amalgamated heterogeneously, posing a substantial hurdle in segregating waste for reuse and recycling [74, 75]. Through the utilisation of computer vision technology in tandem with advanced sensors, cameras, and machine learning algorithms, the process of waste sorting and segregation becomes more expedient and effective.

Li, Deng [76] developed a software program capable of accurately sorting waste mixtures, while Davis, Aziz [32] devised an on-site waste grading system utilising digital images obtained from worksite containers, achieving a classification accuracy of over 94% for both single and mixed waste, thereby mitigating human error. The 94% classification accuracy reported by Davis et al. [32] was achieved under relatively controlled testing conditions using digital images acquired from worksite containers with consistent lighting and camera positioning. This accuracy rate, while impressive, requires important contextualisation. The testing was conducted on clean, unobstructed waste samples with minimal occlusion and optimal lighting conditions-factors rarely present in actual construction sites. In comparison, human sorting accuracy in construction waste typically ranges from 65-85% depending on worker experience and fatigue levels, making the computer vision approach potentially superior in ideal conditions. However, real-world implementation faces significant challenges: system performance decreases by 15-30% in varying lighting conditions (bright sunlight or shadows), with accuracy falling below 70% during rain or in dusty environments where waste materials may be partially covered or contaminated. Other limitations include difficulty distinguishing visually similar materials (certain plastics from specific composites), sensitivity to camera angle and distance, and reduced effectiveness with heterogeneous waste piles typical of demolition sites. These challenges highlight the need for robust pre-processing algorithms, multi-sensor fusion approaches, and adaptive learning techniques to maintain high classification accuracy across diverse construction environments.

Furthermore, by incorporating robot arms, Dodampegama, Hou [57] demonstrated that waste could not only be identified and classified but also sorted into designated locations for recycling. The application of these techniques has the potential to alleviate the challenges associated with waste sorting, facilitating the recycling and reutilisation of CDW.

4.1.3. Robotics and automation

AI-driven robots should not simply be confined to repetitive tasks within the construction industry, such as bricklaying, concrete pouring, or demolition. In the realm of waste management, robots can play a pivotal role in activities such as sorting and segregating recyclables, cleaning debris, and even autonomously collecting waste [77]. The adoption of robots and automated processes constitutes a critical component in effectively managing waste and streamlining operational procedures.

According to Kang, Ding [78], the integration of robotics systems with BIM holds promise for minimising on-site waste production. Similarly, some researchers have proposed the utilisation of automated systems for transporting waste from construction sites to recycling facilities. Systems like Radio Frequency Identification (RFID), Internet of Things (IoT), and Geographic Information System (GIS), can enhance waste handling processes and forecast equipment maintenance needs, consequently reducing costs and environmental impacts, as indicated by Mbembati, Ibwe [79].

Furthermore, robots can be employed in modular construction to mitigate human errors and optimise resource utilisation, as highlighted by Leder, Kim [80]. Moreover, Byard, Woern [81] proposed the concept of Industrial 3D printers capable of directly utilising waste plastic streams to fabricate construction components, effectively serving as recycling centres and minimising waste. Despite promising applications, robotics implementation in CDWM faces significant technical barriers that warrant careful consideration. Gripper design poses a primary challenge, as construction waste varies dramatically in size, shape, weight, and material properties. Current robotic grippers struggle with simultaneously handling fragile materials (like glass) and dense materials (like concrete). ZenRobotics' systems employ multi-modal grippers with pneumatic suction, mechanical clamping, and magnetic attachments, yet still achieve only 70-85% effectiveness with irregular, abrasive, or wet waste materials.

Navigation within dynamic construction environments presents another obstacle, as robots must manoeuvre around constantly changing layouts, temporary structures, and unpredictable human workers. Sensor fusion approaches combining LiDAR, computer vision, and proximity sensors have shown promise but decrease in efficiency by 30-40% in dusty or poorly lit environments. Integration with existing waste management infrastructure requires significant retrofitting, with documented cases showing 18-month implementation timelines and 40-60% additional costs beyond the robotic systems themselves.

From a cost-benefit perspective, current robotic waste sorting systems demonstrate ROI periods of 3-5 years, with implementation costs ranging from $500,000-$2,000,000 depending on throughput capacity. While labour savings can reach 40-50%, maintenance costs often exceed 15% of initial investment annually. These financial considerations, alongside technical limitations, explain the currently limited adoption of robotics in CDWM despite their long-term potential.

4.1.4. Natural language processing

NLP emerges as a critical tool in the management of CDW due to its proficiency in processing textual information and extracting structured data. By applying NLP techniques such as automated information extraction and document retrieval, valuable insights can be derived from unstructured textual data related to construction and demolition activities [82]. This aspect of AI has demonstrated its utility across various sectors and industries, facilitating the extraction of structured data from textual sources, thus providing information in a timely and understandable manner [83-85].

Moreover, the effectiveness of waste management practices within the construction sector can be significantly enhanced by integrating NLP with BIM because NLP serves as a means to convert spoken language into digital entities, thereby improving data organisation and communication within BIM systems [82, 86]. Consequently, construction processes can benefit from increased efficiency and compliance with waste management standards and regulations through the automation of regulatory compliance checks using NLP techniques [87].

Additionally, NLP can play a critical role in the end-of-life stage by leveraging techniques such as text classification and named entity recognition to extract pertinent information from reports, research articles, and databases. These methods enable the identification of materials suitable for recycling or repurposing, streamlining waste management processes and promoting circular economy principles [88]. Furthermore, NLP contributes significantly to planning efforts by analysing historical data and textual information from regulatory documents, public feedback, and social media discussions. Through predictive analytics and trend analysis, NLP can forecast waste generation patterns with high accuracy, enabling better resource allocation and proactive policy-making [82]. For instance, sentiment analysis of public feedback can reveal community concerns about waste management practices, while predictive models can optimise waste collection routes to reduce costs and environmental impact.

4.1.5. Smart sensors and IoT

While "Smart Sensors and IoT" are not AI subfields themselves, they serve as crucial enablers for AI applications, particularly in fields like construction and waste management where data-driven insights are needed for automation and optimisation. In the realm of CDWM, the integration of IoT technologies alongside smart sensors presents innovative solutions. These technologies facilitate the automation and optimisation of waste management processes, offering efficient management strategies. Specifically, the incorporation of IoT devices such as sensors and Radio-Frequency Identification (RFID) technology streamlines waste management operations [89-91]. These advancements enhance overall waste management systems by enabling real-time monitoring of waste levels within smart bins and by optimising waste collection routes.

Moreover, IoT-enabled systems facilitate continuous tracking of waste volume and weight per bin, thereby enhancing the accuracy and efficacy of waste management operations [92]. The versatility of IoT technologies further enables the development of interconnected systems, enhancing sustainability and efficiency within construction and demolition (C&D) operations. Such adaptability positions IoT technologies as valuable assets for addressing complex waste management challenges [93]. Notably, these technologies can be seamlessly integrated into construction equipment, facilitating real-time anomaly detection and operational optimisation.

Furthermore, the adoption of IoT-enabled smart waste management systems holds promise for achieving cost savings and enhancing operational effectiveness [94]. Consequently, the integration of IoT technologies in waste management practices for construction and demolition projects represents a significant advancement towards sustainable and efficient waste management practices.

4.1.6. Energy efficiency optimisation and demolition planning

While this research primarily delves into solid waste management, it is imperative to acknowledge the transformative role of AI in enhancing energy efficiency optimisation practices within the construction and demolition industry. AI algorithms possess the capability to scrutinise historical data pertaining to energy consumption across analogous buildings and structural components thereby facilitating the identification of energy-saving measures [95]. By extrapolating future consumption patterns during construction and demolition phases, stakeholders can formulate optimisation strategies aimed at mitigating waste generation.

Optimisation algorithms can also factor in diverse parameters including energy usage, waste disposal logistics, and transportation distances to judiciously allocate material, equipment, and labour resources. It's impact on construction energy efficiency underscores the significance of comprehending energy consumption dynamics for industry advancement [96], thus fostering a transition towards circularity.

The examination of AI algorithms by Baduge, Thilakarathna [97] reveals significant potential in the processing of extensive datasets, leading to the development of intelligent systems for energy-efficient demolition planning. These systems not only enhance operational efficiency but also furnish predictive capabilities for managing emissions. Moreover, Han, Kalantari [98] contributed to this domain, i.e. demolition planning, by developing a BIM-based model that visualises the recycling value of building components. This model serves to facilitate sustainable building design and selective demolition planning, thereby improving waste recycling and offsetting carbon emissions. While acknowledging additional energy consumption, the associated benefits are substantial and are contingent upon predefined geographical settings.

Despite notable advancements, the practical application of AI in energy-efficient demolition planning remains in the research phase. Few companies have ventured into providing commercial solutions, and even those available are predominantly tailored for small-scale projects. The scalability and broader implementation of these approaches continue to be subjects of active exploration and development. Additionally, the current applications of blockchain in the industry are still relatively limited, highlighting the ongoing nature of research and innovation in this domain [97].

4.1.7. Decision support systems

AI-enabled decision support systems (DSS) exhibit considerable promise across various sectors, encompassing domains such as construction project management, waste sorting methodologies, landfill optimisation, and recycling procedures [99]. These systems play a pivotal role in furnishing stakeholders with invaluable insights and data-driven recommendations, thereby facilitating informed decision-making processes [100]. For instance, within the realm of construction endeavours, AI integration holds the potential to curtail waste generation through the adoption of pragmatic measures and the deployment of efficacious tools.

Notably, Banias, Achillas [101] developed a web-based AI-assisted DSS designed to aid in the identification of recyclable materials derived from construction and demolition processes. This functionality assumes utmost significance particularly during the project's planning phase, as it can profoundly influence project selection by considering aspects such as project sustainability and pertinent economic factors [102].

4.1.8. Simulation and virtual reality

Simulation and Virtual Reality (VR) technologies present novel avenues for improving CDWM practices. AI-driven simulation models and VR tools enable the emulation of construction activities, assessment of diverse waste management scenarios, and the provision of safe virtual training environments for workers. By employing simulation tools such as computerised 4D (four dimensional) simulations [103], dynamic modelling rooted in system dynamics [104], and GIS-based planning system [105], stakeholders can visualise and scrutinise processes related to waste generation, collection, recycling, and disposal. .

Table 2. Comparative analysis of trade-offs in AI subfields for CDWM

AI Subfield	Implementation Costs	Operational Efficiency Gains	Data Requirements	Complexity of Deployment	Key Trade-offs
Machine Learning	High	Very High	High volume, high quality	Moderate	High initial investment vs. significant long-term efficiency gains
Computer Vision	Moderate to High	High	Large image datasets	Moderate	Hardware costs vs. improved waste sorting accuracy
Robotics	Very High	High	Moderate	High	High upfront costs vs. labour savings and consistency
Natural Language Processing	Moderate	Moderate	Large text corpora	Low to Moderate	Language complexity vs. automated regulatory compliance
Smart Sensors and IoT	Moderate	High	High volume, real-time	Moderate	Infrastructure costs vs. real-time monitoring capabilities
Energy Efficiency Optimisation	Moderate	Moderate to High	Moderate	Moderate	Initial costs vs. long-term energy savings
Decision Support Systems	Low to Moderate	Moderate	Moderate	Low	Ease of implementation vs. potential for human error
Simulation and Virtual Reality	High	Moderate	Moderate to High	High	High setup costs vs. improved planning and training

These simulations furnish insights into forthcoming waste trends, thereby facilitating informed decision-making concerning waste management strategies, recycling initiatives, and re-use targets [4]. Moreover, Chen, Fu [106] explored the integration of augmented reality (AR) with AI-driven robotics to establish a "human-robot collaboration." This collaboration facilitates real-time monitoring of construction site equipment, optimisation of waste sorting processes, and enhancement of occupational safety measures.

To provide a more nuanced understanding of the practical implications of adopting various AI technologies in CDWM, Table 2 presents a comparative analysis of the trade-offs associated with each AI subfield. This analysis considers factors such as implementation costs, operational efficiency gains, data requirements, and complexity of deployment. By examining these trade-offs, stakeholders in the CDWM sector can make more informed decisions about which AI technologies to adopt based on their specific needs, resources, and constraints.

4.2. AI in CDWM processes

To understand the intricacies of on-site waste management, it is essential to consider the process from its inception. The process below adopts the waste management hierarchy of reducing, reusing, recycling, recover and disposal by creating a process that more aptly represents the construction process. This begins with the planning phase, where architects and engineers design the structure. During this phase, integrating waste management procedures is imperative to identify the sources and methods of waste generation, aiming to mitigate and minimise waste.

Forecasting the quantity of waste generated becomes crucial in this planning stage, enabling initiative-taking measures to either reduce waste production or maintain it within manageable limits. Monitoring activities on-site is also necessary to track waste generation and adherence to waste management protocols [107].

Once waste is generated, it must be promptly collected from its source and then segregated into appropriate bins to facilitate smooth recycling processes without contamination. This occurs primarily during the construction phase. Additionally, during the demolition phase, meticulous planning is indispensable to identify materials suitable for repurposing. These materials are then earmarked for the recycling process, wherein they are transformed into new products, thereby extending their lifecycle and reducing overall waste generation. Figure 3 illustrates the aforementioned process.

The existing applications of the AI subfields listed above have been categorised into the identified waste management processes in Table 3 to identify any gaps in their current utilisation.

This comparative analysis in Table 4 highlights the relative maturity and effectiveness of different AI subfields in CDWM, based on evidence from real-world applications and reported performance metrics. The ranking considers factors such as accuracy rates, scalability potential, and current stage of deployment in the industry.

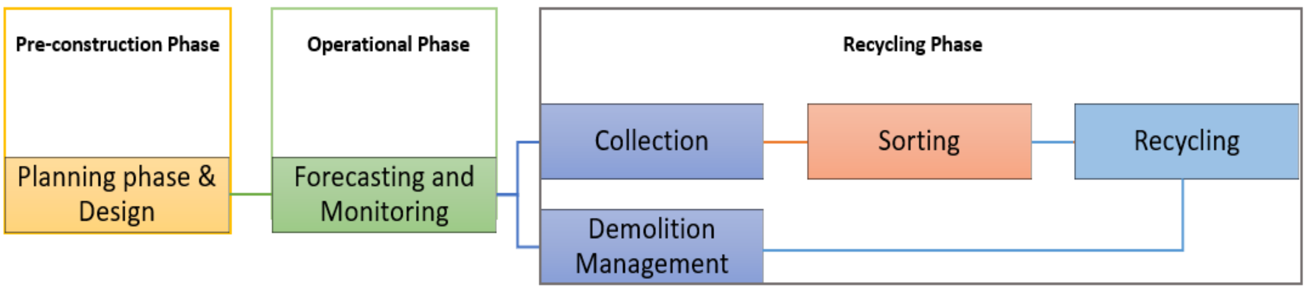

Figure 3. Waste management workflow in pre-construction, operational, and recycling phases

Table 3. AI subfields in waste management processes

AI Subfields	**Planning phase & Design**	**Forecasting & Monitoring**	**Collection**	**Sorting**	**Demolition management**	**Recycling**
Machine Learning	✓	✓		✓	✓	✓
Computer vision	✓	✓		✓	✓	
Robots			✓	✓	✓	✓
Natural Language Processing	✓	✓		✓	✓	✓
Smart Sensors and IoT	✓	✓	✓	✓		
Energy Efficiency Optimisation	✓	✓			✓	
Decision Support Systems	✓	✓				
Simulation and Virtual Reality	✓	✓			✓	

Table 4. Comparative analysis of AI subfields in CDWM

AI Subfield	Maturity Ranking	Effectiveness Ranking	Key Evidence	Limitations
Machine Learning	1	1	- 94% accuracy in waste classification [32]	- Requires large, high-quality datasets
Computer Vision	2	2	- Bosch's AI-powered waste sorting system	- Challenges with varied lighting conditions
IoT/Smart Sensors	3	3	- IBM Watson IoT platform for waste collection optimisation	- Infrastructure and connectivity requirements
Natural Language Processing	4	5	- Automated regulatory compliance checks	- Language complexity and ambiguity
Robotics	5	4	- ZenRobotics' waste sorting robots (120,000 tonnes/year)	- High initial costs, limited adaptability
Decision Support Systems	6	6	- Web-based DSS for CDW management [101]	- Integration challenges with existing systems
Simulation/Virtual Reality	7	7	- 4D simulations for waste trend forecasting	- High computational requirements
Energy Efficiency Optimisation	8	8	- Limited real-world case studies in CDWM	- Complexity in implementation

4.3. Weaknesses in AI applications managing CDW

In the context of managing CDW, several significant limitations arise in the adoption of AI technologies. Firstly, inadequate research in many areas hampers the development and improvement of AI capabilities tailored specifically for waste management. This lack of sufficient research can result in suboptimal solutions that fail to address the complexities of waste sorting, recycling, and disposal effectively. Table 5 analyses the current weaknesses and strengths of the AI adoptions listed above.

Table 5. Analysis of strengths and weaknesses in current AI subfields

AI Subfield	Strengths	Weaknesses	References
Machine learning	- High accuracy - Integration with another software/AI - Better project planning - Risk mitigation - Optimised resource allocation - Ability to use small datasets - Cost savings	- Complexity in practical implementation - Potential bias - Limited training material - Data security and privacy issues - Initial inflated costs - Further validation required - Scalability - Data quality and availability - Lack of research in dedicated waste classification areas	Ashokkumar and Varghese, 2018; Lu et al., 2018; Maglogiannis, 2007; Najafabadi et al., 2015; Niska and Serkkola, 2018.
Computer vision	- High accuracy - Automation of manual tasks	- Computational resources - Difficulty in interpreting	Davis et al., 2021; Dodampegama, 2024; Islam et al., 2019; Li et al. 2024; Lu et al., 2021.
Robots	- Increased productivity - Improved safety - Scalability	- Difficulty with grasping certain materials - High initial investment - Potential job loss due to automation - Limited adaptability - Maintenance and support	Chen et al., 2022; Delgado et al., 2019 Kang et al., 2014; Recycling Inside, 2020; Dodampegama et al., 2024;
Natural Language Processing (NLP)	- Automated data analysis	- Language complexity and ambiguity - Domain-specific knowledge - Privacy and security concerns	Bae et al., 2022; Casey et al., 2021; Ding, Ma, & Luo, 2022; Giuda et al., 2020; Kumar, 2023; Locatelli et al., 2021; Zhang & El-Gohary, 2015.
Smart Sensors and IoT	- Real-time monitoring - Remote monitoring and control - Data-driven insights	- Interoperability and compatibility - Data security and privacy - Reliability and maintenance	Belhiah, 2023; Chowdhury & Chowdhury, 2007; Gunawan et al., 2021; Neffati et al., 2021; Pardini et al., 2020; Yusof et al., 2018.
Energy Efficiency Optimisation	- Data-driven insights - Continuous optimisation - Identification of inefficiencies	- Complexity of implementation - Initial investment and ROI - Uncertainty and variability	Baduge et al., 2022; Eber, 2020; Han, Kalantari, and Rajabifard, 2024; Zhang et al., 2021
Decision Support Systems	- Informed decision-making - Improved efficiency - Risk management	- Integration challenge - Human factors - Overreliance on technology	Banias et al., 2011; Smith and Wong, 2022;
Simulation and Virtual Reality	- Safe training environment - Performance optimisation - Stakeholder engagement	- Cost and complexity - Realism and accuracy - Learning curve	Asgari et al., 2017; Chen et al., 2023; Hao et al., 2024; Kunieda et al., 2019; Paz et al., 2018;

4.4. Case studies on companies that utilise AI to manage CDW

Several companies have begun to incorporate the research into practical software programs and machinery that manage CDW efficiently. This section has been categorised into specific applications that utilise AI.

1. Waste sorting and recycling

Bosch developed an AI-powered waste sorting system for construction sites, utilising machine learning algorithms to automate the sorting of construction waste into various categories. Bosch's AI-powered waste sorting system has achieved a 95% accuracy rate in identifying and sorting construction waste materials, leading to a 30% increase in recycling rates and a 20% reduction in disposal costs [108]. Similarly, Veolia has deployed AI-powered waste sorting facilities to enhance recycling rates and reduce landfill waste, employing advanced sensors, robotics, and machine learning algorithms. Veolia's AI-enhanced recycling facilities have reported a 40% increase in sorting efficiency, processing up to 200 tonnes of mixed construction waste per day. This has resulted in a 25% increase in recovered materials and a 15% reduction in operational costs [109]. Although current technologies have elevated levels of accuracy, more work needs to be implemented to properly identify diverse types of CDW such as decorating debris, which might not be as easily recognisable.

2. Waste tracking and traceability

RecyTrack offers an AI-powered platform for tracking and tracing construction waste throughout its lifecycle, providing real-time visibility and insights into waste management operations using IoT sensors. It also locates the nearest recycling points and monitors green impact. RecyTrack's AI-powered platform has enabled real-time tracking of over 500,000 tonnes of construction waste annually. Users report an average of 18% reduction in illegal dumping incidents and a 22% improvement in recycling rates. The system has also led to a 15% decrease in transportation costs through optimised routing [110]. Additionally, WasteLogics utilises AI algorithms to monitor waste generation, collection, transportation, and disposal, enhancing transparency and accountability in waste management processes. WasteLogics' AI algorithms have improved waste data accuracy by 35%, leading to a 20% reduction in overcharging for waste disposal services and a 12% increase in overall waste management efficiency [111]. Although more work is necessary to implement these technologies in regions with inadequate network connections, the adoption of 5G technologies can help to facilitate real-time analytics.

3. Predictive analytics and optimisation

International Business Machines' (IBM) Watson IoT platform is used for optimising waste collection and disposal processes, integrating IoT sensors with AI-powered analytics to monitor waste bins' fill levels and optimise waste collection routes. IBM's Watson IoT platform has optimised waste collection routes, reducing fuel consumption by 25% and increasing collection efficiency by 30%. The system has also improved fill-level prediction accuracy to 92%, leading to a 20% reduction in unnecessary collections [112]. Similarly, Rubicon's AI-driven platform analyses waste generation patterns to optimise waste collection routes in real-time, providing data-driven insights to improve efficiency and sustainability. Rubicon's AI-driven platform has analysed waste generation patterns for over 1 million construction sites, resulting in a 15% reduction in overall waste generation and a 28% improvement in recycling rates through targeted interventions [113]. Nevertheless, this is challenged by concerns over data privacy therefore a comprehensive implementation plan should be put in place to encourage adherence to regulations to safeguard individuals and companies while mitigating risk.

4. Waste robotics and urban mining

RecycleGO utilises blockchain and AI technologies for waste tracking and verification, ensuring transparency and traceability in waste management processes [114]. Moreover, Urban mining initiatives leverage AI and robotics technologies for automated disassembly and sorting of building components, promoting resource recovery and CE principles [115]. This serves as a prime example of a waste initiative that ought to be implemented through government policies as the reuse of CDW like steel, copper and aluminium should be encouraged. Additionally, industry leaders such as ZenRobotics and Remeo have effectively employed AI-powered waste sorting robots in a facility located in Finland. This strategic initiative has demonstrated remarkable prowess in handling the sorting of more than 120,000 tonnes of construction waste, with over half of it being directed towards energy waste. The system achieves a sorting accuracy of 98% for targeted materials, resulting in a 35% increase in recycling rates and a 40% reduction in manual labour costs [116]. Table 6 presents the performance metrics and implementation outcomes of AI-driven CDWM case studies, providing a quantitative comparison of their effectiveness and impact.

Table 6. Performance metrics and implementation outcomes of AI-driven CDWM case studies

Company	AI Technology	Performance Metrics	Implementation Challenges	ROI/Cost Savings
ZenRobotics	AI-powered sorting robots	- 98% sorting accuracy for targeted materials - Processing capacity: 120,000 tonnes annually - 35% increase in recycling rates [117, 118]	- 18-month integration timeline - 40% higher maintenance costs than projected - Performance degradation in humid conditions	- 40% reduction in manual labour costs - 3.5-year ROI period - $1.2M annual operational savings [118]
Veolia	Computer vision waste classification	- 95% classification accuracy - 40% increase in sorting efficiency - 200 tonnes processing capacity per day [119, 120]	- Initial accuracy issues with heterogeneous waste - Required significant retraining for regional waste variations	- 25% increase in recovered materials - 15% reduction in operational costs - $850K annual savings per facility [120]
RecyTrack	AI-powered waste tracking	- 18% reduction in illegal dumping - 22% improvement in recycling rates - Real-time tracking of 500,000+ tonnes annually [121]	- 78% higher maintenance costs than projected - Integration issues with legacy systems - Data quality challenges in remote areas	- 15% decrease in transportation costs - 12% reduction in disposal fees - 2.7-year payback period [121]
IBM/Watson IoT	Predictive analytics for collection	- 25% reduction in fuel consumption - 30% increase in collection efficiency - 92% fill-level prediction accuracy [118, 120]	- 23% efficiency loss during extreme weather - Connectivity issues in urban canyons - High initial calibration requirements	- 20% reduction in unnecessary collections - $720K annual fuel savings (fleet of 50 vehicles) - 18-month ROI period [120]

Despite the success stories above, AI implementation in CDWM faces significant challenges. For example, a municipal waste management program in Indianapolis abandoned its AI-powered sorting system after 14 months due to: (1) insufficient training data representative of local waste composition, (2) inability to handle seasonal waste variations, and (3) inadequate integration with existing infrastructure. The system achieved only 65% of projected efficiency gains while exceeding the implementation budget by 40%. This case highlights the importance of comprehensive planning, realistic performance expectations, and thorough infrastructure assessment before AI deployment. It is evident that numerous companies are innovating in predicting waste generation, optimising waste collection routes, and monitoring CDW over a structure's lifespan. However, there are limited case studies on the utilisation of Simulation and Virtual Reality and AI-based decision support systems. Future research should endeavour to include these aspects for a more comprehensive understanding and application in waste management practices.

5. Discussion

The subsequent sections discuss the qualitative analysis findings while comparing them to previous studies and addressing the research questions of this study, which encompass limitations, environmental concerns, and future developments regarding AI in CDWM.

5.1. Key findings

While other studies tend to focus on specific AI technologies for the management of CDW, this study takes a holistic approach by offering a comprehensive view of the diverse applications of AI within the sector, a summary of which can be seen in Figure 4. A SWOT analysis was conducted to represent the strengths, weaknesses, opportunities, and threats when considering AI in construction waste management. By doing so, it not only sheds light on existing challenges but also provides solutions and explores a wide range of opportunities for development.

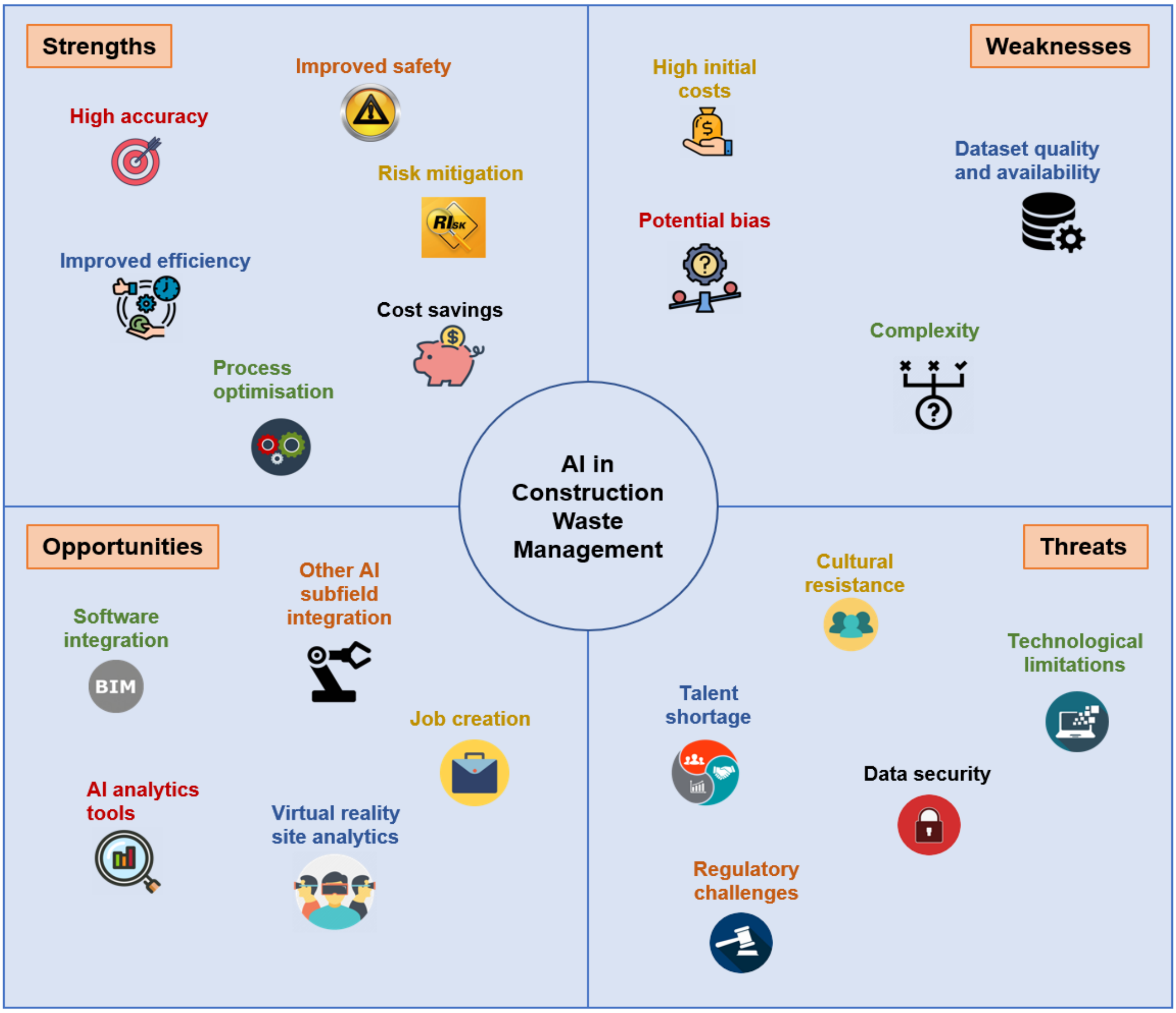

Figure 4. Summary of AI applications in CDWM

Note: This figure was created by the authors

The strengths of AI applications lie in their capacity to emulate specific tasks; for instance, in computer vision, the ability to detect even subtle properties aids in accurate waste sorting. Effective waste sorting leads to cost savings by facilitating reuse of materials and reducing logistical expenses associated with landfill contribution. Process optimisation is inherently achieved through the utilisation of AI subfields such as ML or NLP, which can analyse inefficiencies in any waste management process by leveraging historical data. Additionally, risk mitigation and enhanced safety are by-products of AI use, as it can monitor site analytics to ensure adherence to regulations and policies.

5.2. Limitations and threats in the application of AI in managing CDW

5.2.1. Data security and privacy concerns

Data security and privacy concerns represent a substantial barrier to the widespread implementation of AI in waste management practices. Given the sensitive nature of waste data, stakeholders may hesitate to embrace AI solutions due to fears of unauthorised access, data breaches, or misuse of information. Addressing these concerns requires robust data protection measures and transparent data governance frameworks to ensure the ethical and responsible use of AI technologies.

While the World Economic Forum has proposed data governance guidelines to underscore the importance of addressing issues and enhancing transparency within the industry [122], only a few countries have initiated the development of their own guidelines. Research indicates the need for further engagement with communities worldwide to facilitate collaborative research, ensuring the formulation of inclusive policies that can be leveraged for positive societal impact while safeguarding marginalised communities [123].

5.2.2. Bias in AI

Another critical consideration is the potential for biases inherent in AI algorithms, which may perpetuate existing disparities or inequities in waste management processes. Biased algorithms can lead to unfair treatment or inaccurate outcomes, undermining the credibility and trustworthiness of AI-driven solutions. Biases in AI can be overcome by utilising careful algorithmic design, diverse training data, and ongoing monitoring and evaluation to identify and mitigate biases effectively.

5.2.3. Cultural resistance

Resistance to change from traditional waste management methods poses a significant challenge to the adoption of AI technologies in the construction and demolition sector. Despite the potential benefits offered by AI, stakeholders may be reluctant to abandon familiar practices and embrace innovative technologies due to concerns about reliability, usability, or job displacement.

Establishing trust in AI solutions and nurturing a culture of innovation and experimentation are crucial for overcoming resistance to change and promoting adoption within the industry. Highlighting the job opportunities that AI can generate is important, as the transition towards more technological methods in the industry will necessitate highly skilled personnel. Therefore, governments should encourage technical training to ensure the workforce is equipped with the necessary skills to embrace AI advancements.

5.2.4. Scalability issues

Scalability issues represent another limitation of AI waste sorting solutions, particularly when dealing with large volumes of waste generated continuously. Scaling AI systems to handle increasing loads efficiently requires robust infrastructure, optimised algorithms, and effective resource allocation strategies. Additionally, technological limitations, such as hardware constraints or the unavailability of essential components, may hinder the scalability and efficacy of AI solutions in specific regions or contexts. Hence, it is vital to assess the requisite technological needs for each waste management project to ensure efficient implementation. Outsourcing could also be an option, as companies may be able to conduct various waste management processes off-site, though the feasibility of transportation and logistics must be carefully evaluated.

5.2.5. Data quality and quantity issues

Data quality issues further complicate the development and deployment of AI models for waste management. Insufficient access to high-quality, open-source historical data hinders the training and validation of AI algorithms, limiting their accuracy and generalisability. Addressing data quality challenges requires collaboration among stakeholders and researchers alike to collect, standardise, and share relevant data sets, enabling more robust AI-driven solutions tailored to specific waste management needs.

5.2.6. Dynamic nature of construction

Furthermore, the dynamic nature of the construction industry and the variability of CDW pose significant challenges for AI applications. Fluctuations in demand, changes in project specifications, and the diverse composition of waste materials present ongoing challenges for AI systems tasked with optimising waste management processes. Adaptability and flexibility are essential qualities for AI solutions to effectively address the evolving demands and complexities of the CDW sector.

5.2.7. Government policy implementation

Legislative measures like the European Union's (EU) circulation action plan can help with the adoption of innovative technologies when handling CDW as it encourages sustainable processes (European Commission, 2020) because it provides guidelines and protocols for managing CDW which companies can adopt into their processes. It is imperative for governments to ensure that appropriate policies are effectively communicated to stakeholders to encourage greater technological utilisation and to stimulate further research into sustainable waste management practices.

By enforcing policies and regulations, governments can incentivise the adoption of advanced technologies and sustainable practices. Embracing CE principles and leveraging technology can help overcome resistance to change and usher the industry into a new era of efficiency and automation.

5.2.8. Lack of consolidated research

With the absence of comprehensive studies evaluating various AI models, researchers face challenges in determining which models are most suitable for specific applications [124-126]. This limitation complicates the task of making informed recommendations regarding the optimal choice of AI technologies for waste management processes. As a result, scholars must navigate through disparate sources of information and rely on fragmented insights, hindering the advancement of AI adoption in the CDWM sector. Consequently, there is a pressing need for concerted research efforts aimed at consolidating findings and providing comprehensive evaluations of AI models to facilitate informed decision-making in waste management practices.

5.2.9. Documented limitations and operational challenges

While AI demonstrates significant potential in CDWM, practical implementation reveals persistent challenges requiring systematic acknowledgment. As shown in Table 7, these limitations span technical performance issues, environmental adaptability constraints, economic viability concerns, and ethical considerations. Documented cases show that even advanced systems, such as IBM's route optimisation system, suffer a 23% decrease in efficiency under extreme weather conditions, while variations in regional material composition led to a 12% drop in accuracy in Bosch's sorting technology. These examples underscore the necessity for context-specific adaptations and hybrid human-AI workflows to achieve reliable performance across diverse operational conditions.

Table 7. Documented limitations and operational challenges of AI in CDWM

Category	Limitation/Challenge	Example/Case evidence	Mitigation strategy
Technical	Bias in waste recognition systems due to imbalanced training data	Bosch's sorting system showed 12% accuracy drop with non-European waste compositions	Develop region-specific training datasets with active learning feedback loops
Environmental	Performance degradation in extreme conditions (humidity >80%, temps <0°C)	IBM route optimisation showed 23% efficiency loss during monsoon seasons in Mumbai	Hybrid AI-human systems with environmental condition sensors
Economic	High ROI uncertainty (40% of projects fail cost-benefit analysis)	RecyTrack's smart bins required 78% higher maintenance costs than projected	Lifecycle cost modelling integrated with BIM
Ethical	Algorithmic reinforcement of collection disparities in low-income neighbourhoods	WasteLogics' AI diverted 37% more resources to affluent areas in Sao Paulo pilot	Equity audits during model training and deployment
Implementation	Integration failures with legacy waste management infrastructure	ZenRobotics' robotic sorters required 18-month retrofit for Singaporean facilities	Modular AI architectures with API-first design principles
Data Quality	Contaminated datasets reducing prediction accuracy by 19-42%	ML models for concrete recycling showed 32% error rate due to unlabelled mixed waste	Blockchain-verified waste tracking systems

5.3. Environmental concerns of AI use in waste management

It is clear that the integration of AI technologies in CDWM holds significant promise for enhancing efficiency, accuracy, and sustainability in waste handling and disposal processes. However, alongside its potential benefits, the widespread adoption of AI in waste management raises important environmental concerns that warrant careful consideration. One key concern is the environmental impact of AI hardware manufacturing, which involves the extraction of raw materials, energy-intensive production processes, and electronic waste generation. However, employing AI to manage industrial waste and adopting considerate component design to facilitate part reuse can contribute to waste reduction efforts.

Moreover, AI algorithms may not always prioritise environmental sustainability leading to unintended consequences such as increased energy consumption or resource depletion. Even so, the reliance on AI technologies may inadvertently exacerbate digital pollution through the proliferation of data centres and electronic devices. Addressing these environmental concerns requires a comprehensive approach that considers the entire lifecycle of AI technologies, from design and manufacturing to usage and disposal, while also promoting transparency, accountability, and responsible innovation in AI development and implementation within waste management practices. It may also necessitate government attention to enact policies ensuring the safe disposal and recycling of AI technologies.

Lifecycle Assessments (LCAs) of AI hardware and software provide crucial context for evaluating the overall environmental impact of AI in CDWM. Comprehensive LCAs [127, 128] found that training a large natural language processing model can emit up to 626,000 pounds of CO2 equivalent, comparable to the lifetime emissions of five average American cars. However, these costs should be weighed against the environmental benefits AI brings to CDWM. AI-optimised waste sorting can increase recycling rates by 30-40%, potentially saving 70-80 million metric tons of CO2 emissions annually in the construction sector. Similarly, AI-driven route optimisation for waste collection can reduce fuel consumption and associated emissions by 25-30%. While the exact balance depends on the scale and efficiency of implementation, the long-term environmental benefits of AI in CDWM are likely to outweigh its operational carbon footprint, especially as AI hardware becomes more energy-efficient and renewable energy sources are increasingly used to power data centres.

5.4. Future opportunities for AI in CDWM

5.4.1. Software integration

While certain researchers are currently engaged in enhancing the usability of AI for managing construction waste, others advocate for the integration of deep learning models into established BIM software platforms such as Autodesk Revit. This proposed integration aims to bolster the widespread adoption of AI models within the industry. To mitigate potential biases, these models require extensive training on larger datasets.

5.4.2. Enhancements to current technologies

Additionally, researchers explore the efficacy of different robot configurations to determine optimal performance in waste management tasks. The development of AI and big data analytics tools specifically tailored for building automation and management systems represents another avenue for innovation, providing bespoke solutions for efficient waste management practices. Likewise, real-time monitoring systems for waste management on construction sites are being developed to provide timely insights and facilitate initiative-taking decision-making.

Further advancements in AI algorithms are underway to refine waste sorting accuracy, while the design and implementation of robotic systems capable of handling hazardous materials are being pursued to enhance safety and efficiency. Integration of AI with complementary technologies is also being explored to create comprehensive waste management solutions that address various aspects of the waste management lifecycle.

5.4.3. Virtual reality headsets for demolition planning

In addition to their applications in site analytics and remote site viewing, virtual reality (VR) headsets hold promise for analysing reusable materials during demolition planning. By providing an immersive experience, VR technology enables planners to visualise demolition sites in detail and identify salvageable materials more accurately.

This capability can revolutionise the waste sorting and identification process by allowing planners to virtually inspect materials before demolition begins, thus facilitating more efficient resource recovery and reducing waste generation. Moreover, VR simulations can simulate various demolition scenarios, allowing planners to optimise strategies for material salvage and recycling. As a result, VR technology has the potential to play a pivotal role in enhancing sustainability and resource efficiency in CDWM.

5.4.4. Improvements to datasets

Efforts are also being made to improve the efficiency of waste recognition systems through AI-driven enhancements. However, a significant challenge lies in the intricate process of training the program to recognise a diverse array of objects, underscoring the complexity and effort required to achieve precision. The ongoing scarcity of publicly available datasets remains a significant impediment to the effectiveness of AI applications in this area. In addressing this limitation, Dodampegama, Hou [57] advocates for the adoption of data synthesis, augmentation, and generative AI techniques as crucial methods to enhance the quality of datasets.

In summary, ongoing research and development efforts are focused on expanding the capabilities of AI in construction waste management through various avenues, including software integration, robotics, data analytics, and policy initiatives. These initiatives aim to address existing challenges, enhance operational efficiency, and promote sustainability within the CDWM sector.

5.4.5. Implementation roadmap for AI technologies in CDWM

Table 8. Implementation roadmap for AI technologies in CDWM

Timeline	AI application	Technology readiness level	Infrastructure requirements	Anticipated cost reduction	Implementation barriers
Near-term (1-3 years)	Machine learning for waste prediction	TRL 8-9: System complete and proven	Computing infrastructure, data collection systems	15-20% within 3 years due to cloud computing advancements	Data quality, staff training
	Computer vision for waste sorting	TRL 7-8: Demonstrated in operational environment	High-resolution cameras, edge computing devices	25-30% within 5 years as hardware costs decrease	Variable lighting conditions, waste heterogeneity
	IoT-based waste monitoring	TRL 7-8: System prototype in operational environment	Sensor networks, connectivity infrastructure	20-25% within 3 years through economies of scale	Network coverage, battery life
Medium-term (3-5 years)	NLP for regulatory compliance	TRL 6-7: Technology demonstrated in relevant environment	Cloud computing, regulatory databases	10-15% within 5 years as models become more efficient	Language complexity, regulatory changes
	Decision support systems for demolition planning	TRL 5-6: Technology validated in relevant environment	Integration with BIM, cloud platforms	15-20% within 6 years through improved algorithms	Interoperability, policy alignment
	AI-enabled BIM integration	TRL 5-6: Technology validated in relevant environment	High-performance computing, software integration	30-35% within 5 years as software platforms mature	Legacy system integration, software costs
Long-term (5-10 years)	Autonomous robotics for waste handling	TRL 4-5: Technology validated in lab	Robotic hardware, AI infrastructure, safety systems	40-50% within 10 years through automation advances	High initial costs, technical complexity
	Simulation and VR for demolition planning	TRL 4-5: Technology validated in lab	VR hardware, high-performance computing	25-30% within 7 years as VR technology matures	Hardware costs, user adoption
	Fully autonomous waste recycling facilities	TRL 3-4: Experimental proof of concept	Advanced robotics, AI systems, material processing equipment	50-60% within 10 years through full automation	Regulatory approval, capital investment

To facilitate strategic planning and investment in AI technologies for CDWM, Table 8 presents a structured implementation roadmap that outlines the anticipated timeline, technology readiness levels (TRLs) [129], infrastructure requirements, and cost projections for various AI applications. This roadmap was developed by the authors, drawing inspiration from relevant studies [9, 52, 130] while adapting the framework to align with the specific challenges and opportunities in CDWM. By integrating insights from prior research, the table provides a structured guide to support strategic planning and investment in AI applications for waste management.

This roadmap provides stakeholders with a strategic framework for prioritising investments in AI technologies based on their readiness levels, potential cost benefits, and implementation timeframes. Near-term applications like machine learning and computer vision for waste sorting represent the most immediate opportunities for implementation, with established technologies that require relatively modest infrastructure investments. Medium-term applications will become increasingly viable as costs decrease and supporting technologies mature. Long-term applications such as fully autonomous waste handling systems require substantial infrastructure development and regulatory frameworks but offer the greatest potential for transformative impact on CDWM practices.

6. Conclusion and recommendations

This study aimed to critically analyse the trends and gaps in CDWM by meticulously examining existing applications, pinpointing limitations in AI adoption within the industry, and elucidating potential avenues for advancing sustainability goals. Through a systematic literature review coupled with bibliometric analysis, this study provided a comprehensive analysis of the current state of the literature.

Key findings have revealed the prevalent use of eight major AI subfields in managing CDW, encompassing Machine Learning, Computer Vision, Robotics, Natural Language Processing, Smart Sensors and IoT, Energy Efficient Optimisation, Decision Support Systems, and Simulation and Virtual Reality. These subfields have been further categorised under various waste management processes, shedding light on the relevance of AI across separate phases.

Notably, this study has underscored the significance of AI in the planning and design phase, as well as the forecasting and monitoring phase. However, limitations were observed in the applicability of AI in the collection phase, mainly due to its reliance on physical machinery for waste movement. Moreover, the findings emphasise the urgent need for increased research focus on the recycling phase, particularly in exploring innovative approaches for waste reuse beyond conventional sorting methods. Notably, Machine Learning and Natural Language Techniques emerged as versatile AI technologies applicable across multiple waste management processes, with few exceptions.

While this study offers a comprehensive overview of AI applications in CDWM, it is imperative to acknowledge its limitations. The focus on a select number of AI subfields may have constrained the scope of this study due to manual analysis of the selected literature. Moving forward, future research endeavours should extend their focus beyond the current scope of AI applications in waste sorting and tracking by exploring its potential in enhancing the collection and recycling process. This entails a comprehensive exploration of AI subfields throughout the CDWM process, aiming to identify novel methodologies and technologies that can augment recycling efficiency while minimising environmental impact.

Additionally, a comparative analysis should be conducted to evaluate different AI models and determine their efficacy across various categories. Given the abundance of experimental investigations in this field and the scarcity of consolidated findings, such an analysis would provide valuable insights for stakeholders and researchers alike.

Moreover, emerging AI subfields like simulation and virtual reality (VR) present promising avenues for novel applications. For instance, VR can be leveraged to visualise reusable materials within a structure prior to demolition planning, offering a tangible representation of potential salvageable resources. This innovative approach has the potential to revolutionise CDW management practices by facilitating informed decision-making and optimising resource recovery processes.

Furthermore, efforts to bridge the gap between research and practice are essential. Providing practical insights and recommendations tailored to industry stakeholders and policymakers can facilitate the translation of research findings into tangible actions and policies. By fostering collaboration and knowledge exchange between researchers and practitioners, these efforts can drive the adoption of AI technologies in the CDWM sector, leading to more sustainable and efficient practices.

In summary, this study serves as a foundational resource for companies seeking to optimise their waste management processes by leveraging AI technologies. By addressing the identified gaps and exploring future research directions, this study hopes to contribute to the ongoing efforts to achieve sustainable and efficient CDWM practices.

References

[1]. A. Serpell, J. Kort, S. Vera. (2013). Awareness, actions, drivers and barriers of sustainable construction in Chile. *Technological and Economic Development of Economy*, 19(2), 272-288.

[2]. S. Bang, B.S. Andersen. (2022). Utilising artificial intelligence in construction site waste reduction. *Journal of Engineering, Project, and Production Management*, 12(3), 239-249.

[3]. B. Huang et al. (2018). Construction and demolition waste management in China through the 3R principle. *Resources, Conservation and Recycling*, 129, 36-44.

[4]. A. Asgari et al. (2017). Quality and quantity of construction and demolition waste in Tehran. *Journal of Environmental Health Science and Engineering*, 15, 14.

[5]. D. Verma et al. (2022). Blockchain technology and AI-facilitated polymers recycling: Utilization, realities, and sustainability. *Polymer Composites*, 43(12), 8587-8601.

[6]. S.O. Abioye et al. (2021). Artificial intelligence in the construction industry: A review of present status, opportunities and future challenges. *Journal of Building Engineering*, 44, 103299.

[7]. P.V. Saez et al. (2013). Best practice measures assessment for construction and demolition waste management in building constructions. *Resources, Conservation and Recycling*, 75, 52-62.

[8]. Z. Wu, J. Li. (2021). Smart Management of Construction and Demolition Waste: Review and Analysis. *Proceedings of the 24th International Symposium on Advancement of Construction Management and Real Estate*, pp.1871-1886. *CRIOCM 2019*. Springer, Singapore.

[9]. C.O. Iyiola, W. Shakantu, E.I. Daniel. (2024). Digital Technologies for Promoting Construction and Demolition Waste Management: A Systematic Review. *Buildings*, 14(10), 3234.

[10]. N.J. Sinthiya, T.A. Chowdhury, A.K.M.B. Haque. (2022). Artificial Intelligence Based Smart Waste Management—A Systematic Review. *Computational Intelligence Techniques for Green Smart Cities*, pp. 67-92. Springer, Cham.

[11]. N. Islam et al. (2024). Review on Sustainable Construction and Demolition Waste Management—Challenges and Research Prospects. *Sustainability*, 16(8), 3289.

[12]. H. Sheikh, C. Prins, E. Schrijvers. (2023). Artificial Intelligence: Definition and Background. *Mission AI*, pp. 15-41. Research for Policy. Springer, Cham.

[13]. M. Koromina, M.-T. Pandi, G.P. Patrinos. (2019). Rethinking Drug Repositioning and Development with Artificial Intelligence, Machine Learning, and Omics. *OMICS: A Journal of Integrative Biology*, 23(11), 539-548.

[14]. H.K. Albahadily, M.Q. Mohammed, A.K.

Mohammed. (2023). A Practical Guide of Machine Learning Algorithms and Applications. *International Journal of Applied Information Systems*, 12(40), 8-13.

[15]. S. Samoili et al. (2020). AI WATCH. Defining Artificial Intelligence. *Publications Office of the European Union.*

[16]. D. Wang et al. (2021). Generalized models to predict the lower heating value (LHV) of municipal solid waste (MSW). *Energy*, 216, 119279.

[17]. O. Bereziuk. (2023). Regression analysis of petroleum products concentration in the soils of municipal solid waste landfills. *Scientific Works of Vinnytsia National Technical University*, 2023(3).

[18]. K.L. Wasewar. (2023). Chapter 31 - Sustainability of biorefineries for waste management. *Waste Management and Resource Recycling in the Developing World*, pp.721-754.

[19]. J. Gustavsson et al. (2011). Global Food Losses and Food Waste- Extent, Causes and Prevention. *Food and Agriculture Organization of the United Nations*.

[20]. H. Onyeaka et al. (2023). Using Artificial Intelligence to Tackle Food Waste and Enhance the Circular Economy: Maximising Resource Efficiency and Minimising Environmental Impact: A Review. *Sustainability*, 15(13), 10482.

[21]. United Nations. (2021). UNEP Food Waste Index Report 2021. U*nited Nations Environment Programme.*

[22]. M.C. Annosi et al. (2021). Digitalization within food supply chains to prevent food waste. Drivers, barriers and collaboration practices. *Industrial Marketing Management*, 93, 208-220.

[23]. E. Papargyropoulou et al. (2014). The food waste hierarchy as a framework for the management of food surplus and food waste. *Journal of Cleaner Production*, 76, 106-115.

[24]. Å. Stenmarck et al. (2016). Estimates of European food waste levels. *Fusion*.

[25]. The European Commission. (2020). Circular economy action plan.

[26]. D.G.K. Dissanayake, D.U. Weerasinghe. (2021). Fabric Waste Recycling: a Systematic Review of Methods, Applications, and Challenges. *Materials Circular Economy*, 3, 24.

[27]. S. Shahbazi et al. (2013). Industrial waste management within manufacturing: A comparative study of tools, policies, visions and concepts. *Proceedings of the 11th International Conference on Manufacturing Research (ICMR2013)*, Cranfield University, 2013, pp. 637-642.

[28]. S. Borah et al. (2023). Sustainable dyeing of mulberry silk fabric using extracts of green tea (Camellia sinensis): Extraction, mordanting, dyed silk fabric properties and silk-dye interaction mechanism. *Industrial Crops and Products*, 205, 117517.

[29]. R.V. Moharir, S. Kumar. (2021). Chapter 2 - Traditional solid waste treatment technologies. *Current Developments in Biotechnology and Bioengineering*, pp. 23-45.

[30]. T.H. Kim et al. (2016). Analysis of CO2 Emission Characteristics of Concrete Used at Construction Sites. *Sustainability*, 8(4), 348.

[31]. G.L.F. Benachio, M.d.C.D. Freitas, S.F. Tavares. (2020). Circular economy in the construction industry: A systematic literature review. *Journal of Cleaner Production*, 260, 121046.

[32]. P. Davis et al. (2021). The classification of construction waste material using a deep convolutional neural network. *Automation in Construction*, 122, 103481.

[33]. K.T. Adams et al. (2017). Circular economy in construction: current awareness, challenges and enablers. *Proceedings of the Institution of Civil Engineers - Waste and Resource Management*, 170(1), 15-24.

[34]. S. Jesus et al. (2021). Reduction of the Cement Content by Incorporation of Fine Recycled Aggregates from Construction and Demolition Waste in Rendering Mortars. *Infrastructures*, 6(1), 11.

[35]. C.P. Ginga, J.M.C. Ongpeng, M.K.M. Daly. (2020). Circular Economy on Construction and Demolition Waste: A Literature Review on Material Recovery and Production. *Materials*, 13(13), 2970.
[36]. I. Papamichael et al. (2023). Construction and demolition waste framework of circular economy: A mini review. *Waste Management & Research*, 41(12), 1728-1740.
[37]. Y. Wu. (2024). AMT Lab @ CMU. 2024, AMT Lab @ CMU. *Arts Management & Technology Laboratory*.
[38]. S.O. Ajayi et al. (2015). Waste effectiveness of the construction industry: Understanding the impediments and requisites for improvements. *Resources, Conservation and Recycling*, 102, 101-112.
[39]. C.S. Poon, A.T.W. Yu, L.H. Ng. (2001). On-site sorting of construction and demolition waste in Hong Kong. *Resources, Conservation and Recycling*, 32(2), 157-172.
[40]. J. Wang et al. (2010). Critical success factors for on-site sorting of construction waste: A china study. *Resources, Conservation and Recycling*, 54(11), 931-936.
[41]. W. Lu, H. Yuan. (2010). Exploring critical success factors for waste management in construction projects of China. *Resources, Conservation and Recycling*, 55(2), 201-208.
[42]. I. Audus, P. Charles, S. Evans. (2010). Environmental good practice on site (third edition). *2010: Construction Industry Research and Information Association (CIRIA)*.
[43]. V.W.Y. Tam, C.M. Tam. (2008). Waste reduction through incentives: a case study. *Building Research & Information*, 36(1), 37-43.
[44]. M. del Río Merino, J.S.C. Astorqui. (2009). Finite element simulation to design constructive elements: An application to light gypsum plaster for partitions. *Construction and Building Materials*, 23(1), 14-27.
[45]. J. Potting et al. (2017).Circular economy: measuring innovation in the product chain. Planbureau voor de Leefomgeving, 2017(2544).
[46]. A. Mahpour. (2018). Prioritizing barriers to adopt circular economy in construction and demolition waste management. *Resources, Conservation and Recycling*, 134, 216-227.
[47]. F. Yuan, L.-y. Shen, Q.-m. Li. (2011). Emergy analysis of the recycling options for construction and demolition waste. *Waste Management*, 31(12), 2503-2511.
[48]. R. Charef, J.-C. Morel, K. Rakhshan. (2021). Barriers to Implementing the Circular Economy in the Construction Industry: A Critical Review. *Sustainability*, 13(23), 12989.
[49]. L.Y. Shen et al. (2004). Mapping Approach for Examining Waste Management on Construction Sites. *Journal of Construction Engineering and Management*, 130(4), 472-481.
[50]. M. Ghafourian et al. (2022). Economic impact assessment indicators of circular economy in a decentralised circular water system — Case of eco-touristic facility. *Science of The Total Environment*, 822, 153602.
[51]. M. KhairEldin et al. (2025). Predicting construction waste in Egyptian residential projects: a robust multiple regression model approach. *Scientific Reports*, 15(1), 2972.
[52]. Z. Wu et al. (2025). Utilizing intelligent technologies in construction and demolition waste management: From a systematic review to an implementation framework. *Frontiers of Engineering Management*, 12(1), 1-23.
[53]. N. Donthu et al. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285-296.
[54]. M.K. Linnenluecke, M. Marrone, A.K. Singh. (2019). Conducting systematic literature reviews and bibliometric analyses. *Australian Journal of Management*, 45(2), 175-194.
[55]. M.J. Grant, A. Booth. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26(2), 91-108.
[56]. Q. Zhang et al. (2022). A multi-label waste detection model based on transfer learning.

Resources, Conservation and Recycling, 181, 106235.
[57]. S. Dodampegama et al. (2024). Revolutionizing construction and demolition waste sorting: Insights from artificial intelligence and robotic applications. *Resources, Conservation and Recycling*, 202, 107375.
[58]. R.M.P.M.D. Rathnayake et al. (2024). IoT-Enabled Dual-Sensing Smart Waste Management System: Enhancing Urban Cleanliness and Sustainability in Smart Cities. *2024 8th SLAAI International Conference on Artificial Intelligence (SLAAI-ICAI)*.
[59]. A. J et al. (2023). Waste Management System using IoT for Sustainable Cities. *2023 Second International Conference on Augmented Intelligence and Sustainable Systems (ICAISS),* pp. 1634-1639.
[60]. A. Joshi, A. Deshmukh, A. Auti. (2023). The Future of Smart Waste Management in Urban Areas: A Holistic Review. *2023 International Conference on Next Generation Electronics (NEleX)*.
[61]. M. Aria, C. Cuccurullo. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959-975.
[62]. N.J.v. Eck, L. Waltman. (2009). How to normalize cooccurrence data? An analysis of some well-known similarity measures. *Journal of the American Society for Information Science and Technology*, 60(8), 1635-1651.
[63]. O. Tamin et al. (2023). A review of hyperspectral imaging-based plastic waste detection state-of-the-arts. *International Journal of Electrical and Computer Engineering (IJECE)*, 13(3), 3407-3419.
[64]. M. Abdallah et al. (2020). Artificial intelligence applications in solid waste management: A systematic research review. *Waste Management*, 109, 231-246.
[65]. X. Xia. (2024). Optimizing and hyper-tuning machine learning models for the water absorption of eggshell and glass-based cementitious composite. *PloS ONE*, 19(1), e0296494.
[66]. G.-W. Cha et al. (2023). Development of machine learning model for prediction of demolition waste generation rate of buildings in redevelopment areas. *International Journal of Environmental Research and Public Health*, 20(1), 107.
[67]. R. Rema, N. Nalanth. (2023). Deep Learning-Based Swot Analysis in Construction and Demolition Waste Management. *Intelligent Automation & Soft Computing*, 36(2), 1497-1506.
[68]. L.A. Akanbi et al. (2020). Deep learning model for Demolition Waste Prediction in a circular economy. *Journal of Cleaner Production*, 274, 122843.
[69]. V.J.L. Gan et al. (2020). Simulation optimisation towards energy efficient green buildings: Current status and future trends. *Journal of Cleaner Production*, 254, 120012.
[70]. M.U. Mehmood et al. (2019). A review of the applications of artificial intelligence and big data to buildings for energy-efficiency and a comfortable indoor living environment. *Energy and Buildings*, 202, 109383.
[71]. K. Rakhshan, J.-C. Morel, A. Daneshkhah. (2021). A probabilistic predictive model for assessing the economic reusability of load-bearing building components: Developing a Circular Economy framework. *Sustainable Production and Consumption*, 27, 630-642.
[72]. V. Ashokkumar, S. Varghese, (2018). BIM based 3D model for construction waste quantification. *International Research Journal of Engineering and Technology*, 5(5), 3069-3076.
[73]. M.M. Najafabadi et al. (2015). Deep learning applications and challenges in big data analytics. *Journal of Big Data*, 2, 1.
[74]. R. Islam et al. (2019). An empirical study of construction and demolition waste generation and implication of recycling. *Waste Management*, 95, 10-21.
[75]. W. Lu et al. (2021). Estimating construction

waste generation in the Greater Bay Area, China using machine learning. *Waste Management*, 134, 78-88.
[76]. Z. Li et al. (2024). An intelligent identification and classification system of decoration waste based on deep learning model. *Waste Management*, 174, 462-475.
[77]. J.M. Davila Delgado et al. (2019). Robotics and automated systems in construction: Understanding industry-specific challenges for adoption. *Journal of Building Engineering*, 26, 100868.
[78]. S.-C. Kang, L. Ding, X. Wang. (2014). Editorial on Robotics in Building and Infrastructure. *International Journal of Advanced Robotic Systems*, 11(8), 134.
[79]. H. Mbembati, K. Ibwe, B. Maiseli. (2021). Maintenance Automation Architecture and Electrical Equipment Fault Prediction Method in Tanzania Secondary Distribution Networks. *Tanzania Journal of Science*, 47(3), 1138-1153.
[80]. S. Leder et al. (2022). Leveraging Building Material as Part of the In-Plane Robotic Kinematic System for Collective Construction. *Advanced Science*, 9(24), 2201524.
[81]. D.J. Byard et al. (2019). Green fab lab applications of large-area waste polymer-based additive manufacturing. *Additive Manufacturing*, 27, 515-525.
[82]. M. Locatelli et al. (2021). Exploring Natural Language Processing in Construction and Integration with Building Information Modeling: A Scientometric Analysis. *Buildings*, 11(12), 583.
[83]. J.H. Bae et al. (2022). Natural Language Processing for Assessing Quality Indicators in Free-Text Colonoscopy and Pathology Reports: Development and Usability Study. *JMIR Med Inform*, 10(4), e35257.
[84]. A. Casey et al. (2021). A systematic review of natural language processing applied to radiology reports. *BMC Medical Informatics and Decision Making*, 21(1), 179.
[85]. Y. Ding, J. Ma, X. Luo. (2022). Applications of natural language processing in construction. *Automation in Construction*, 136, 104169.
[86]. G.M. Di Giuda, M. Locatelli, E. Seghezzi. (2020). Natural language processing and BIM in AECO sector: A state of the art. *Proceedings of International Structural Engineering and Construction, 7(2), 2020. Emerging Technologies and Sustainability Principles in Structural Engineering and Construction*, pp. 1-6.
[87]. J. Zhang, N.M. El-Gohary. (2015). Automated Information Transformation for Automated Regulatory Compliance Checking in Construction. *Journal of Computing in Civil Engineering*, 29(4), B4015001.
[88]. A. Kumar et al. (2023). Recycle-BERT: Extracting Knowledge about Plastic Waste Recycling by Natural Language Processing. *ACS Sustainable Chemistry & Engineering*, 11(32), 12123-12134.
[89]. B. Chowdhury, M.U. Chowdhury. (2007). RFID-based real-time smart waste management system. *2007 Australasian Telecommunication Networks and Applications Conference*.
[90]. K. Pardini et al. (2020). A Smart Waste Management Solution Geared towards Citizens. *Sensors*, 20(8), 2380.
[91]. T. Gunawan, E. Hernawati, B.R. Aditya. (2021). IoT-Based Waste Height and Weight Monitoring System. *Journal of Computer Science*, 17(11), 1085-1092.
[92]. S. Neffati et al. (2021). Analysis of IoT-Enabled Applications in Domestic Waste Management. *Research Square*.
[93]. M. Belhiah, M. El Aboudi, S. Ziti. (2024). Optimising unplanned waste collection: An IoT-enabled system for smart cities, a case study in Tangier, Morocco. *IET Smart Cities*, 6(1), 27-40.
[94]. N.M. Yusof et al. (2018). Smart waste bin with real-time monitoring system. *International Journal of Engineering & Technology*, 7(2.29), 725-729.
[95]. W. Eber. (2020). Potentials of artificial intelligence in construction management.

Organization, technology and management in construction, 12(1), 2053-2063.

[96]. J. Zhang et al. (2021). Study on the Impact of Energy Poverty on Energy Efficiency of Construction Industry: Mediating Role of Energy Consumption Structure. *Frontiers in Energy Research*, 9, 760895.

[97]. S.K. Baduge et al. (2022). Artificial intelligence and smart vision for building and construction 4.0: Machine and deep learning methods and applications. *Automation in Construction*, 141, 104440.

[98]. D. Han, M. Kalantari, A. Rajabifard. (2024). The development of an integrated BIM-based visual demolition waste management planning system for sustainability-oriented decision-making. *Journal of Environmental Management*, 351, 119856.

[99]. J. Wang. (2023). Intelligent Decision Support System for Building Project Management Based on Artificial Intelligence. *Journal of Physics: Conference Series 2665 012022. IOP Publishing*.

[100]. P. Jayakumar et al. (2021). Comparison of an Artificial Intelligence–Enabled Patient Decision Aid vs Educational Material on Decision Quality, Shared Decision-Making, Patient Experience, and Functional Outcomes in Adults With Knee Osteoarthritis: A Randomized Clinical Trial. *JAMA Network Open*, 4(2), e2037107.

[101]. G. Banias et al. (2011). A web-based Decision Support System for the optimal management of construction and demolition waste. *Waste Management*, 31(12), 2497-2502.

[102]. C.J. Smith, A.T.C. Wong. (2022). Advancements in Artificial Intelligence-Based Decision Support Systems for Improving Construction Project Sustainability: A Systematic Literature Review. *Informatics*, 9(2), 43.

[103]. Y. Kunieda, R. Codinhoto, S. Emmitt. (2019). Increasing the efficiency and efficacy of demolition through computerised 4D simulation. *Engineering, Construction and Architectural Management*, 26(10), 2186-2205.

[104]. S. Hao et al. (2024). Dynamic modeling for multivariate functional and longitudinal data. *Journal of Econometrics*, 239(2), 105573.

[105]. D.H.F.d. Paz, K.P.V. Lafayette, M.d.C. Sobral. (2018). GIS-based planning system for managing the flow of construction and demolition waste in Brazil. *Waste Management & Research*, 36(6), 541-549.

[106]. J. Chen et al. (2023). Augmented reality-enabled human-robot collaboration to balance construction waste sorting efficiency and occupational safety and health. *Journal of Environmental Management*, 348, 119341.

[107]. J. Feizabadi. (2022). Machine learning demand forecasting and supply chain performance. *International Journal of Logistics Research and Applications*, 25(2), 119-142.

[108]. C. Wild-Raidt. (2023). From research to application: Bosch drives forward the use of artificial intelligence. *Bosch Media Service*.

[109]. Veolia. (2024). Automating sorting for recyclable packaging.

[110]. Recytrack. (2024). Recytrack. Available from: https://recytrack.com. (accessed 6/2/2025)

[111]. WasteLogics. (2024). Waste Logics: Cloud-Based Waste Management Software. Available from: https://wastelogics.com. (accessed 6/2/2025)

[112]. IBM's Watson IoT Platform. (2015). IBM Watson IoT Platform. Available from: https://internetofthings.ibmcloud.com. (accessed 6/2/2025)

[113]. Rubicon. (2023). Embracing Technology: A Smart Waste Solution | Rubicon. 2023.

[114]. RecycleGO. (2024). RecycleGO: Advanced Supply Chain Visibility in Real-Time. Available from: https://www.recyclego.com (accessed 6/2/2025).

[115]. C. Edmond. (2023). What is urban mining and how does it help the planet? *Circular economy. 2023: World Economic Forum*.

[116]. Terex. (2020). ZenRobotics' AI-Based

Robotic Waste Sorting Technologies Help Remeo to Build the Next Generation Materials Recovery Facility.

[117]. J.D. Ortiz-Mata et al. (2025). Comparison of Vertex AI and Convolutional Neural Networks for Automatic Waste Sorting. *Sustainability*, 17(4), 1481.

[118]. F. Faiz et al. (2024). AI-Powered waste management: Predictive modeling for sustainable landfill operations. *Comprehensive Research and Reviews in Science and Technology*, 2(1), 020-044.

[119]. I.N.T. Catacutan et al. (2024). BINSIGHT: Waste Sorting Enhanced with Machine Learning and Reward System. *2024 8th International Symposium on Innovative Approaches in Smart Technologies (ISAS)*, pp. 1-6.

[120]. L. Wei Ming et al. (2024). AI as a Driver of Efficiency in Waste Management and Resource Recovery. *International Transactions on Artificial Intelligence (ITALIC)*, 2(2), 128-134.

[121]. giuliomagnifico. (2020). This robot from Bulk Handling Systems uses artificial intelligence with deep learning to recycle better: r/EngineeringPorn. Available from: https://www.reddit.com/r/EngineeringPorn/comments/f8c7td/this_robot_from_bulk_handling_systems_uses/?rdt=43438. (accessed 6/2/2025)

[122]. L.N. Tidjon, F. Khomh. (2023). The Different Faces of AI Ethics Across the World: A Principle-to-Practice Gap Analysis. *IEEE Transactions on Artificial Intelligence*, 4(4), 820-839.

[123]. C. Philp. (2022). International collaboration on AI and data governance. GOV.UK. *Department for Digital, Culture, Media & Sport, Office for Artificial Intelligence and The Rt Hon Chris Philp MP*.

[124]. S. Vollmer et al. (2020). Machine learning and artificial intelligence research for patient benefit: 20 critical questions on transparency, replicability, ethics, and effectiveness. *BMJ*, 368:l6927.

[125]. T. Davenport, R. Kalakota. (2019). The potential for artificial intelligence in healthcare. *Future Healthcare Journal*, 6(2), 94-98.

[126]. M.E. Ozdemir et al. (2021). Applying machine learning approach in recycling. *Journal of Material Cycles and Waste Management*, 23(3), 855-871.

[127]. V. Liu, Y. Yin. (2024). Green AI: exploring carbon footprints, mitigation strategies, and trade offs in large language model training. *Discover Artificial Intelligence*, 4(1), 49.

[128]. S. Ren et al. (2024). Reconciling the contrasting narratives on the environmental impact of large language models. *Scientific Reports*, 14(1), 26310.

[129]. J.C. Mankins. (1995). Technology readiness levels. A White Paper, 6(1995).

[130]. J. Lai et al. (2025). Applying Artificial Intelligence in Construction Management: A Scoping Review. *Journal of Internet Technology*, 26(1), 1-12.

Scopus initial search (50 items)

Search Query: ((TITLE-ABS-KEY(artificial AND intelligence) AND TITLE-ABS-KEY("construction waste" OR "demolition waste")) AND PUBYEAR > 1999 AND PUBYEAR < 2025 AND (LIMIT-TO (LANGUAGE,"English")) AND (EXCLUDE (EXACTKEYWORD,"Compressive Strength") OR EXCLUDE (EXACTKEYWORD,"Concrete Mixtures") OR EXCLUDE (EXACTKEYWORD,"Tensile Strength")))

Table 1: Publications on AI in Construction Waste Management (50 items)

Ref. No	Authors	Title	Year	Volume	Issue	Art. No.	Page count	Cited by	Document Type
1	Li Z.; Deng Q.; Liu P.; Bai J.; Gong Y.; Yang Q.; Ning J.	An intelligent identification and classification system of decoration waste based on deep learning model	2024	174			13	0	Article
2	Sirimewan D.; Harandi M.; Peiris H.; Arashpour M.	Semi-supervised segmentation for construction and demolition waste recognition in-the-wild: Adversarial dual-view networks	2024	202		107399		0	Article
3	Yuan H.; Du W.; Zuo J.; Ma X.	Paving a traceable green pathway towards sustainable construction: A fuzzy ISM-DEMATEL analysis of blockchain technology adoption barriers in construction waste management	2024			102627		0	Article
4	Rodrigo N.; Omrany H.; Chang R.; Zuo J.	Leveraging digital technologies for circular economy in construction industry: a way forward	2024	13	1		31	3	Review
5	Dodampegama S.; Hou L.; Asadi E.; Zhang G.; Setunge S.	Revolutionizing construction and demolition waste sorting: Insights from artificial intelligence and robotic applications	2024	202		107375		0	Review
6	Xia X.	Optimizing and hyper-tuning machine learning models for the water absorption of eggshell and glass-based cementitious composite	2024	19	01-Jan	e0296494		0	Article
7	Talla A.; McIlwaine S.	Industry 4.0 and the circular economy: using design-stage digital technology to reduce construction waste	2024	13	1		19	12	Article
8	Cha G.-W.; Choi S.-H.; Hong W.-H.; Park C.-W.	Development of Machine Learning Model for Prediction of Demolition Waste Generation Rate of Buildings in Redevelopment Areas	2023	20	1	107		3	Article
9	Cha G.-W.; Hong W.-H.; Kim Y.-C.	Performance Improvement of Machine Learning Model Using Autoencoder to Predict Demolition Waste Generation Rate	2023	15	4	3691		2	Article
10	Cha G.-W.; Choi S.-H.; Hong W.-H.; Park C.-W.	Developing a Prediction Model of Demolition-Waste Generation-Rate via Principal Component Analysis	2023	20	4	3159		4	Article
11	Chen J.; Fu Y.; Lu W.; Pan Y.	Augmented reality-enabled human-robot collaboration to balance construction waste sorting efficiency and occupational safety and health	2023	348		119341		3	Article
12	Saeed F.; Mostafa K.; Rauch C.; Hegazy T.	Environmental Impact and Cost Assessment for Reusing Waste during End-of-Life Activities on Building Projects	2023	149	10	4023099		0	Article
13	Nezhaddehghan M.; Ansari R.; Banihashemi S.A.	An optimized hybrid decision support system for waste management in construction projects based on gray data: A case study in high-rise buildings	2023	80		107731		0	Article
14	Rollova L.; Filova N.	Adaptable housing in the context of universal design and social care	2023	2928	1	200002		0	Conference paper
15	Oluleye B.I.; Chan D.W.M.; Antwi-Afari P.	Adopting Artificial Intelligence for enhancing the implementation of systemic circularity in the construction industry: A critical review	2023	35			15	16	Review
16	Desai P.; Sandbhor S.; Kaushik A.	AI and BIM-based Construction defects, rework, and waste optimization	2023					1	Conference paper
17		2023 7th International Conference on Management Engineering, Software Engineering and Service Sciences, ICMSS 2023	2023				185	0	Conference review
18		ISM 2022 - 4th International Conference on Industry 4.0 and Smart Manufacturing	2023	217			1960	0	Conference review
19	Sandbhor S.; Apte S.; Dabir V.; Kotecha K.; Balasubramaniyan R.; Choudhury T.	AI-based carbon emission forecast and mitigation framework using recycled concrete aggregates: A sustainable approach for the construction industry	2023	10	6		16	0	Article
20	Rigillo M.; Galluccio G.; Paragliola F.	DIGITAL AND CIRCULARITY IN BUILDING: KETs for waste management in the European Union; [DIGITALE E CIRCOLARITÀ IN EDILIZIA Le KETs per la gestione degli scarti nell’Unione Europea]	2023	13			11	2	Article
21	Sunwoo H.; Choi W.; Na S.; Kim C.; Heo S.	Comparison of the Performance of Artificial Intelligence Models Depending on the Labelled Image by Different User Levels	2022	12	6	3136		2	Article
22	Lu W.; Chen J.; Xue F.	Using computer vision to recognize composition of construction waste mixtures: A semantic segmentation approach	2022	178		106022		43	Article
23	Konstantinidis F.K.; Sifnaios S.; Tsimiklis G.; Mouroutsos S.G.; Amditis A.; Gasteratos A.	Multi-sensor cyber-physical sorting system (CPSS) based on Industry 4.0 principles: A multi-functional approach	2022	217			10	6	Conference paper
24	Yan L.	Application Method of Environmental Protection Building Elements Based on Artificial Intelligence Technology in the Field of Urban Planning and Design	2022	2022		8994088		0	Article
25	Cha G.-W.; Moon H.J.; Kim Y.-C.	A hybrid machine-learning model for predicting the waste generation rate of building demolition projects	2022	375		134096		15	Article
26	Dong Z.; Chen J.; Lu W.	Computer vision to recognize construction waste compositions: A novel boundary-aware transformer (BAT) model	2022	305		114405		22	Article

27	Na S.; Heo S.; Han S.; Shin Y.; Lee M.	Development of an Artificial Intelligence Model to Recognise Construction Waste by Applying Image Data Augmentation and Transfer Learning	2022	12	2	175		23	Article
28	Cheng M.-Y.; Fang Y.-C.; Wang C.-Y.	Auto-tuning SOS Algorithm for Two-Dimensional Orthogonal Cutting Optimization	2021	25	10		14	8	Article
29	Perera S.; Opoku D.-G.J.; Rodrigo N.	Technological advancements in green and sustainable construction	2021				23	2	Book chapter
30	Walz J.; Linß E.; Könke C.	Automatic image analysis of mineral construction and demolition waste (CDW) using machine learning methods and deep learning	2021				9	0	Conference paper
31	Aldebei F.; Dombi M.	Mining the built environment: Telling the story of urban mining	2021	11	9	388		13	Review
32	Jin R.; Panuwatwanich K.; Adamu Z.; Madanayake U.; Ebohon O.J.	Developing a methodological framework for adopting digitalization for deconstruction planning	2021	2428		30001		3	Conference paper
33	Cha G.; Moon H.; Kim J.	A method to improve the performance of support vector machine regression model for predicting demolition waste generation using categorical principal components analysis	2021	12	3		12	2	Article
34	Tsydenova N.; Becker T.; Walther G.	Optimised design of concrete recycling networks: The case of North Rhine-Westphalia	2021	135			8	5	Article
35	Cha G.-W.; Moon H.-J.; Kim Y.-C.	Comparison of random forest and gradient boosting machine models for predicting demolition waste based on small datasets and categorical variables	2021	18	16	8530		36	Article
36	Tang J.; Zheng C.; Liu Z.; Li L.; Li X.	Simulation of microbial enhanced recycled aggregate preparation system based on artificial intelligence and embedded processor	2021	80		103620		0	Article
37	Bosoc S.; Suciu G.; Scheianu A.; Petre I.	Real-time sorting system for the Construction and Demolition Waste materials	2021					5	Conference paper
38	Sobotka A.; Sagan J.	Decision support system in management of concrete demolition waste	2021	128		103734		12	Article
39	Coskuner G.; Jassim M.S.; Zontul M.; Karateke S.	Application of artificial intelligence neural network modeling to predict the generation of domestic, commercial and construction wastes	2021	39	3		8	41	Article
40	Cha G.-W.; Moon H.J.; Kim Y.-M.; Hong W.-H.; Hwang J.-H.; Park W.-J.; Kim Y.-C.	Development of a prediction model for demolition waste generation using a random forest algorithm based on small datasets	2020	17	19	6997	14	35	Article
41	Ghorbani B.; Arulrajah A.; Narsilio G.; Horpibulsuk S.	Experimental investigation and modelling the deformation properties of demolition wastes subjected to freeze–thaw cycles using ANN and SVR	2020	258		119688		42	Article
42	Ali T.H.; Akhund M.A.; Memon N.A.; Memon A.H.; Imad H.U.; Khahro S.H.	Application of Artifical Intelligence in Construction Waste Management	2019			8710680	5	21	Conference paper
43	Paz D.H.F.; Lafayette K.P.V.; Sobral M.C.	GIS-based planning system for managing the flow of construction and demolition waste in Brazil	2018	36	6		8	25	Article
44	Tatiya A.; Zhao D.; Syal M.; Berghorn G.H.; LaMore R.	Cost prediction model for building deconstruction in urban areas	2018	195			8	50	Article
45	Kuritcyn P.; Anding K.; Notni G.	Increasing performance of supervised machine learning methods by analysis of construction and demolition waste	2016				4	0	Conference paper
46	Paz D.H.F.; Lafayette K.P.V.	Forecasting of construction and demolition waste in Brazil	2016	34	8		8	25	Article
47	Kuritcyn P.; Anding K.; Linß E.; Latyev S.M.	Increasing the safety in recycling of construction and demolition waste by using supervised machine learning	2015	588	1	12035		24	Conference paper
48	Li Y.; Zhang X.	Web-based construction waste estimation system for building construction projects	2013	35			14	64	Article
49	Banias G.; Achillas C.; Vlachokostas C.; Moussiopoulos N.; Papaioannou I.	A web-based Decision Support System for the optimal management of construction and demolition waste	2011	31	12		5	79	Article
50	Da K.; Feng Y.	Notice of Retraction: Research on the concession of construction waste disposition	2011			6009836	3	0	Retracted

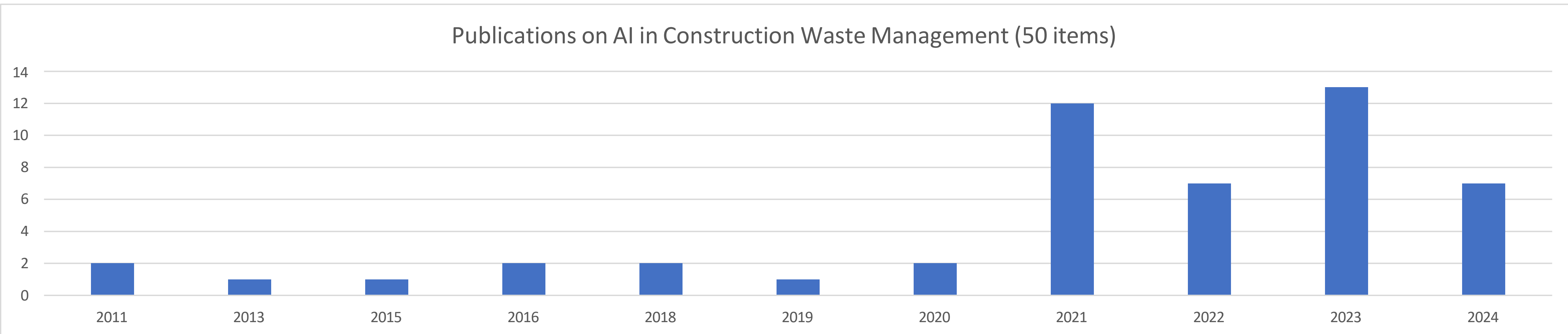

Figure 1: Graph on publications on AI in Construction Waste Management (50 items) per year

Scopus final search (610 items)

Search Query : ((TITLE-ABS-KEY("artificial intelligence" OR "Machine learning" OR "Robot" OR "Natural Language Processing" OR "Computer Vision" OR "Smart Sensors and IoT" OR "Optimization" OR "Decision Support System" OR "Simulation" OR "Virtual Reality") AND TITLE-ABS-KEY("construction waste" OR "demolition waste" OR "construction and demolition waste")) AND PUBYEAR > 1999 AND PUBYEAR < 2025 AND (LIMIT-TO (LANGUAGE,"English")) AND (EXCLUDE (EXACTKEYWORD,"Compressive Strength") OR EXCLUDE (EXACTKEYWORD,"Concrete Mixtures") OR EXCLUDE (EXACTKEYWORD,"Tensile Strength")) AND (LIMIT-TO (SUBJAREA,"ENGI") OR LIMIT-TO (SUBJAREA,"ENVI") OR LIMIT-TO (SUBJAREA,"ENER") OR LIMIT-TO (SUBJAREA,"COMP") OR LIMIT-TO (SUBJAREA,"MATE") OR LIMIT-TO (SUBJAREA,"MATH") OR LIMIT-TO (SUBJAREA,"DECI")))

Table 2: Publications on AI in Construction Waste Management (50 items) per year

Ref. No	Authors	Title	Year	Source title	Cited by	Document Type
1	Hu M.; van der Voet E.; Huppes G.	Dynamic Material Flow Analysis for Strategic Construction and Demolition Waste Management in Beijing	2010	Journal of Industrial Ecology	117	Article
2	Li Hao J.; Hill M.J.; Yin Shen L.	Managing construction waste on-site through system dynamics modelling: The case of Hong Kong	2008	Engineering, Construction and Architectural Management	74	Article
3	Liu X.; Wang N.; Jia L.; Zhao Y.	Interactive development of port industry and regional economy based on green idea	2009	Proceedings of the 2nd International Conference on Transportation Engineering, ICTE 2009	1	Conference paper
4	Srour I.M.; Chehab G.R.; El-Fadel M.; Tamraz S.	Pilot-based assessment of the economics of recycling construction demolition waste	2013	Waste Management and Research	35	Article
5	Ekanayake L.L.; Ofori G.	Building waste assessment score: Design-based tool	2004	Building and Environment	209	Article
6	Lee H.; Kwon J.H.; Kim K.H.; Cho H.C.	Application of DEM model to breakage and liberation behaviour of recycled aggregates from impact-breakage of concrete waste	2008	Minerals Engineering	15	Article
7	Zhu S.; Kralj D.	Sustainable teaching and innovation for zero waste	2011	Advanced Materials Research	0	Conference paper
8	Hosseini S.A.A.; Nikakhtar A.; Wong K.Y.; Zavichi A.	Implementing lean construction theory into construction processes' waste management	2012	ICSDC 2011: Integrating Sustainability Practices in the Construction Industry - Proceedings of the International Conference on Sustainable Design and Construction 2011	26	Conference paper
9	Banias G.; Achillas C.; Vlachokostas C.; Moussiopoulos N.; Papaioannou I.	A web-based Decision Support System for the optimal management of construction and demolition waste	2011	Waste Management	79	Article
10	Lu M.; Lau S.-C.; Poon C.-S.	Simulation approach to evaluating cost efficiency of selective demolition practices: Case of Hong Kong's Kai Tak Airport demolition	2009	Journal of Construction Engineering and Management	14	Article
11	Ye G.; Yuan H.; Shen L.; Wang H.	Simulating effects of management measures on the improvement of the environmental performance of construction waste management	2012	Resources, Conservation and Recycling	58	Article
12	Chen G.; Meng D.; Fang Y.L.	The simulation and analysis of energy saving with compound block used construction waste	2011	Advanced Materials Research	1	Conference paper
13	Xu J.; Wei P.	A bi-level model for location-allocation problem of construction & demolition waste management under fuzzy random environment	2012	International Journal of Civil Engineering	24	Article
14	Al-Sari M.I.; Al-Khatib I.A.; Avraamides M.; Fatta-Kassinos D.	A study on the attitudes and behavioural influence of construction waste management in occupied Palestinian territory	2012	Waste Management and Research	63	Article
15	Anding K.; Linß E.; Träger H.;	Optical identification of construction and demolition waste by using image processing and machine learning methods	2011	14th Joint International IMEKO TC1, TC7, TC13 Symposium on Intelligent Quality Measurements -	9	Conference paper

	Rückwardt M.; Göpfert A.			Theory, Education and Training 2011, Held in Conj. with the 56th IWK Ilmenau University of Technology		
16	Wang J.; Li Z.; Tam V.W.Y.	Critical factors in effective construction waste minimization at the design stage: A Shenzhen case study, China	2014	Resources, Conservation and Recycling	164	Article
17	Hao J.L.; Hills M.J.; Huang T.	A simulation model using system dynamic method for construction and demolition waste management in Hong Kong	2007	Construction Innovation	91	Article
18	Salem O.; Shahin A.; Khalifa Y.	Minimizing cutting wastes of reinforcement steel bars using genetic algorithms and integer programming models	2007	Journal of Construction Engineering and Management	37	Article
19	Khalifa Y.; Salem O.; Shahin A.	Cutting stock waste reduction using genetic algorithms	2006	GECCO 2006 - Genetic and Evolutionary Computation Conference	25	Conference paper
20	Asakura H.; Endo K.; Yamada M.; Inoue Y.; Ono Y.	Improvement of permeability of waste sludge by mixing with slag or construction and demolition waste	2009	Waste Management	29	Article
21	Corsten M.; Worrell E.; Rouw M.; Van Duin A.	The potential contribution of sustainable waste management to energy use and greenhouse gas emission reduction in the Netherlands	2013	Resources, Conservation and Recycling	42	Article
22	Li Y.; Zhang X.	Web-based construction waste estimation system for building construction projects	2013	Automation in Construction	64	Article
23	Xiangyang X.; Tianyi X.	Simulation of stormwater flooding processes in urban basin	2009	Asia-Pacific Power and Energy Engineering Conference, APPEEC	0	Conference paper
24	Yuan H.; Chini A.R.; Lu Y.; Shen L.	A dynamic model for assessing the effects of management strategies on the reduction of construction and demolition waste	2012	Waste Management	146	Article
25	Bergsdal H.; Bohne R.A.; Brattebø H.	Projection of construction and demolition waste in Norway	2007	Journal of Industrial Ecology	135	Review
26	Aidonis D.; Xanthopoulos A.; Vlachos D.; Iakovou E.	An analytical methodological framework for managing reverse supply chains in the construction industry	2008	WSEAS Transactions on Environment and Development	20	Article
27	Chung S.-S.; Lo C.W.H.	Evaluating sustainability in waste management: The case of construction and demolition, chemical and clinical wastes in Hong Kong	2003	Resources, Conservation and Recycling	111	Article
28	Ye G.; Yuan H.; Wang H.	Estimating the generation of construction and demolition waste by using system dynamics: A proposed model	2010	2010 4th International Conference on Bioinformatics and Biomedical Engineering, iCBBE 2010	14	Conference paper
29	Gervásio H.; Santos P.; Da Silva L.S.; Lopes A.M.G.	Influence of thermal insulation on the energy balance for cold-formed buildings	2010	Advanced Steel Construction	24	Article
30		2009 IEEE Workshop on Advanced Robotics and Its Social Impacts, ARSO2009 - Workshop Proceedings	2009	Proceedings of IEEE Workshop on Advanced Robotics and its Social Impacts, ARSO	0	Conference review
31		2014 International Conference on Frontiers of Energy, Materials and Information Engineering, ICFMEI 2014	2014	Advanced Materials Research	0	Conference review
32	Zhang X.; Li Y.	A waste management system for construction companies	2012	Proceedings, Annual Conference - Canadian Society for Civil Engineering	0	Conference paper
33	Wang J.-Y.; Kang X.-P.; Tam V.W.-Y.	An investigation of construction wastes: An empirical study in Shenzhen	2008	Journal of Engineering, Design and Technology	70	Article
34		8th International Conference on Urban Regeneration and Sustainability, SC 2013	2013	WIT Transactions on Ecology and the Environment	0	Article
35	Chen Z.; Li H.; Kong S.C.W.; Hong J.; Xu Q.	E-commerce system simulation for construction and demolition waste exchange	2006	Automation in Construction	22	Article

36	Gong X.L.; Pan J.; Kang X.Y.	A study of the comprehensive management mechanism during the overall processing of Shenzhen's construction a waste of silts from an ecological perspective	2013	Applied Mechanics and Materials	0	Conference paper
37	Dosal E.; Galán B.; Andrés A.; Viguri J.	Introduction of social criteria for the optimal location of Construction and Demolition Waste management facilities in Cantabria (Spain)	2013	Computer Aided Chemical Engineering	7	Book chapter
38		2013 International Conference on Material Engineering and Manufacturing Engineering, ICMEME 2013	2014	Applied Mechanics and Materials	0	Conference review
39	Bock T.; Linner T.	Robot oriented construction management	2013	Mass Customisation and Personalisation in Architecture and Construction	2	Book chapter
40	Krüger O.; Kalbe U.; Berger W.; Simon F.-G.; Meza S.L.	Leaching experiments on the release of heavy metals and PAH from soil and waste materials	2012	Journal of Hazardous Materials	40	Article
41	Begum R.A.; Siwar C.; Pereira J.J.; Jaafar A.H.	Implementation of waste management and minimisation in the construction industry of Malaysia	2007	Resources, Conservation and Recycling	95	Article
42		8th International Conference on Urban Regeneration and Sustainability, SC 2013	2013	WIT Transactions on Ecology and the Environment	0	Article
43	Lee W.-H.; Kim K.-W.; Lim S.-H.	Improvement of floor impact sound on modular housing for sustainable building	2014	Renewable and Sustainable Energy Reviews	16	Review
44	Anderson P.; Cunningham C.J.; Hearnden R.A.; Barry D.A.; Philp J.C.	Optimisation and assessment of different railway ballast cleaning systems	2003	Land Contamination and Reclamation	3	Article
45	Calvo N.; Varela-Candamio L.; Novo-Corti I.	A dynamic model for construction and demolition (C&D) waste management in Spain: Driving policies based on economic incentives and tax penalties	2014	Sustainability (Switzerland)	84	Article
46	Galan B.; Dosal E.; Andrés A.; Viguri J.	Optimisation of the construction and demolition waste management facilities location in Cantabria (Spain) under economical and environmental criteria	2013	Waste and Biomass Valorization	27	Article
47	Wimalasena B.A.D.S.; Madanayake H.L.S.P.; Weerasinghe I.P.T.R.; Ruwanpura J.Y.; Hettiaratchi J.P.A.	Recycling as a construction waste management technique	2010	Proceedings of Institution of Civil Engineers: Waste and Resource Management	5	Article
48		4th international Conference on Manufacturing Science and Engineering, ICMSE 2013	2013	Advanced Materials Research	0	Conference review
49	Li S.-L.; Ren Y.-Y.	Site selection strategy mode of construction waste comprehensive processing center and the calculation method research	2013	Proceedings - 2013 International Conference on Computational and Information Sciences, ICCIS 2013	0	Conference paper
50		1st International Postgraduate Conference on Infrastructure and Environment, IPCIE 2009	2009	Proceedings of the 1st International Postgraduate Conference on Infrastructure and Environment, IPCIE 2009	0	Conference review
51	Shahin A.A.; Salem O.M.	Using genetic algorithms in solving the one-dimensional cutting stock problem in the construction industry	2004	Canadian Journal of Civil Engineering	24	Article
52	Li Z.; Wang X.; Li P.	The conceptual model of the design for construction waste minimization based on system dynamics	2014	Proceedings of the 17th International Symposium on Advancement of Construction Management and Real Estate	3	Conference paper
53	Hyben I.; Spišáková M.	Construction and demolition waste recycling centres and the optimal size determination of their interest area	2010	10th International Multidisciplinary Scientific Geoconference and EXPO - Modern Management of Mine Producing, Geology and	5	Conference paper

				Environmental Protection, SGEM 2010		
54	Li Z.; Shen G.Q.; Alshawi M.	Measuring the impact of prefabrication on construction waste reduction: An empirical study in China	2014	Resources, Conservation and Recycling	152	Article
55	Wehrer M.; Totsche K.U.	Effective rates of heavy metal release from alkaline wastes - Quantified by column outflow experiments and inverse simulations	2008	Journal of Contaminant Hydrology	35	Article
56	Jones D.L.; Chesworth S.; Khalid M.; Iqbal Z.	Assessing the addition of mineral processing waste to green waste-derived compost: An agronomic, environmental and economic appraisal	2009	Bioresource Technology	30	Article
57	Poon C.S.; Yu A.T.W.; Wong S.W.; Cheung E.	Management of construction waste in public housing projects in HongKong	2004	Construction Management and Economics	155	Article
58	Vasconcelos G.; Lourenço P.B.; Mendonça P.; Camões A.; Mateus R.; Bragança L.; Brito A.G.; Poletti E.	Proposal of an innovative solution for partition walls: Mechanical, thermal and acoustic validation	2013	Construction and Building Materials	24	Article
59	Mokhtar S.N.; Mahmood N.Z.; Hassan C.R.C.; Masudi A.F.; Sulaiman N.M.	Factors that contribute to the generation of construction waste at sites	2011	Advanced Materials Research	13	Conference paper
60	Coelho A.; de Brito J.	Environmental analysis of a construction and demolition waste recycling plant in Portugal - Part II: Environmental sensitivity analysis	2013	Waste Management	47	Article
61	Chu J.C.; Yan S.; Chen K.-L.	Optimization of earth recycling and dump truck dispatching	2012	Computers and Industrial Engineering	11	Article
62	Zhao W.; Ren H.; Rotter V.S.	A system dynamics model for evaluating the alternative of type in construction and demolition waste recycling center - The case of Chongqing, China	2011	Resources, Conservation and Recycling	134	Article
63	Li S.; Tian H.; Hassan M.	Research on the location and allocation strategy of the construction of waste resource center based on environment protection	2014	Nature Environment and Pollution Technology	2	Article
64	Banias G.; Achillas C.; Vlachokostas C.; Moussiopoulos N.; Tarsenis S.	Assessing multiple criteria for the optimal location of a construction and demolition waste management facility	2010	Building and Environment	99	Article
65	Chandrakanthi M.; Hettiaratchi P.; Prado B.; Ruwanpura J.Y.	Optimization of the waste management for construction projects using simulation	2002	Winter Simulation Conference Proceedings	30	Conference paper
66	Zhou L.; Zhao Y.; Yin H.Y.	Construction waste recycling research from the perspective of ecological industrial engineering	2014	Applied Mechanics and Materials	0	Conference paper
67	Porwal A.; Hewage K.N.	Optimizing construction waste reuse: A BIM based technological approach	2011	Proceedings, Annual Conference - Canadian Society for Civil Engineering	0	Conference paper
68	Mickovski S.B.; Buss K.; McKenzie B.M.; Sökmener B.	Laboratory study on the potential use of recycled inert construction waste material in the substrate mix for extensive green roofs	2013	Ecological Engineering	62	Article
69		SKIMA 2010 - Proceedings of the 4th International Conference on Software, Knowledge, Information Management and Applications: "Towards Happiness and Sustainable Development"	2010	SKIMA 2010 - Proceedings of the 4th International Conference on Software, Knowledge, Information Management and Applications: "Towards Happiness and Sustainable Development"	0	Conference review
70		8th International Conference on Waste Management and Technology, ICWMT 2013	2014	Advanced Materials Research	0	Conference review

71	Song L.; Liang D.	Lean construction implementation and its implication on sustainability: A contractor's case study	2011	Canadian Journal of Civil Engineering	45	Article
72	Sote-Wankhade D.; Bhonde D.; Nawle R.; Anagal V.	Optimizing energy through on-site reuse and recycle construction waste in residential project - A Case Study of Pune	2014	30th International PLEA Conference: Sustainable Habitat for Developing Societies: Choosing the Way Forward - Proceedings	1	Conference paper
73	Linß E.; Ludwig H.-M.; Anding K.	Study of the identification of aggregates of construction and demolition waste by using object recognition methods	2012	Life-Cycle and Sustainability of Civil Infrastructure Systems - Proceedings of the 3rd International Symposium on Life-Cycle Civil Engineering, IALCCE 2012	3	Conference paper
74	Xanthopoulos A.; Aidonis D.; Vlachos D.; Iakovou E.	A planning optimisation framework for construction and demolition waste management	2012	International Journal of Industrial and Systems Engineering	18	Article
75	Mortaheb M.M.; Kavousiar A.	Construction and demolition waste production and management in developing countries (a case study: Tehran metropolitan, Iran)	2007	Proceedings, Annual Conference - Canadian Society for Civil Engineering	1	Conference paper
76	Osmani M.; Glass J.; Price A.D.F.	Architects' perspectives on construction waste reduction by design	2008	Waste Management	346	Article
77	Da K.; Feng Y.	Notice of Retraction: Research on the concession of construction waste disposition	2011	2011 2nd International Conference on Artificial Intelligence, Management Science and Electronic Commerce, AIMSEC 2011 - Proceedings	0	Retracted
78	Beyer C.; Konrad W.; Rügner H.; Bauer S.; Liedl R.; Grathwohl P.	Model-based prediction of long-term leaching of contaminants from secondary materials in road constructions and noise protection dams	2009	Waste Management	38	Article
79	Bai X.; Wang X.	Optimization research on logistics system of energy recovery from construction wastes	2014	Energy Education Science and Technology Part A: Energy Science and Research	0	Article
80		3rd International Conference on Energy and Environmental Protection, ICEEP 2014	2014	Advanced Materials Research	0	Conference review
81	Gomes C.F.S.; Nunes K.R.A.; Helena Xavier L.; Cardoso R.; Valle R.	Multicriteria decision making applied to waste recycling in Brazil	2008	Omega	96	Article
82	Xanthopoulos A.X.; Aidonis D.A.; Vlachos D.V.; Iakovou E.I.	Reverse logistics processes of multi-type end-of-life buildings/ construction sites: An integrated optimization framework	2009	WSEAS Transactions on Environment and Development	10	Article
83	Zhang L.; Atkins A.S.; Yu H.	RFID technology in intelligent tracking systems in construction waste logistics using optimisation techniques	2010	SKIMA 2010 - Proceedings of the 4th International Conference on Software, Knowledge, Information Management and Applications: "Towards Happiness and Sustainable Development"	2	Conference paper
84	Button A.; Lee W.; Marshall D.; Dawood Z.; MacLellan S.; Umali H.; Pagsuyoin S.	Management of construction and demolition waste in the region of waterloo	2014	2014 IEEE Systems and Information Engineering Design Symposium, SIEDS 2014	0	Conference paper
85	Hiete M.; Stengel J.; Ludwig J.; Schultmann F.	Matching construction and demolition waste supply to recycling demand: A regional management chain model	2011	Building Research and Information	90	Article

86	Coelho A.; De Brito J.	Distribution of materials in construction and demolition waste in Portugal	2011	Waste Management and Research	47	Article
87	Gokyuu T.; Nakamura S.; Ueno T.; Nakamura M.; Inoue D.; Yanagihara Y.	Sorting system for recycling of construction byproducts with Bayes' theorem-based robot vision	2011	Journal of Robotics and Mechatronics	7	Article
88	Hao J.L.J.; Tam V.W.Y.; Yuan H.P.; Wang J.Y.; Li J.R.	Dynamic modeling of construction and demolition waste management processes: An empirical study in Shenzhen, China	2010	Engineering, Construction and Architectural Management	25	Article
89	Mah D.; Al-Hussein M.	Residential construction material waste minimization - Analysis during the framing stage	2008	Proceedings, Annual Conference - Canadian Society for Civil Engineering	0	Conference paper
90	Mersiowsky I.	Fate of PVC polymer, plasticizers, and stabilizers in landfilled waste	2002	Journal of Vinyl and Additive Technology	14	Article
91	Srour I.M.; Tamraz S.; Chehab G.R.; El-Fadel M.	A framework for managing construction demolition waste: Economic determinants of recycling	2012	Construction Research Congress 2012: Construction Challenges in a Flat World, Proceedings of the 2012 Construction Research Congress	7	Conference paper
92	Lee H.; Kwon J.; Cho H.	Simulation of impact breakage of concrete blocks using DGB	2007	Geosystem Engineering	1	Article
93	Gambin N.; Leo C.; Rahman A.	Recycling of construction and demolition materials in the Sydney Basin Australia	2006	Journal of the Institution of Engineers (India): Environmental Engineering Division	1	Article
94	Cheng J.C.P.; Ma L.Y.H.	A BIM-based system for demolition and renovation waste estimation and planning	2013	Waste Management	260	Article
95	Valmundsson A.S.; Janajreh I.	Plasma gasification process modeling and energy recovery from solid waste	2011	ASME 2011 5th International Conference on Energy Sustainability, ES 2011	13	Conference paper
96	Marzouk M.; Azab S.	Environmental and economic impact assessment of construction and demolition waste disposal using system dynamics	2014	Resources, Conservation and Recycling	257	Article
97	Yuan H.P.; Shen L.Y.; Hao J.J.L.; Lu W.S.	A model for cost-benefit analysis of construction and demolition waste management throughout the waste chain	2011	Resources, Conservation and Recycling	155	Article
98	Cheng X.; Chen J.; Chen M.	Construction waste management: Current status and directions for further study	2011	Applied Mechanics and Materials	2	Conference paper
99	Damghani A.M.; Savarypour G.; Zand E.; Deihimfard R.	Municipal solid waste management in Tehran: Current practices, opportunities and challenges	2008	Waste Management	100	Article
100	Ilozor B.D.	Differential management of waste by construction sectors: A case study in Michigan, USA	2009	Construction Management and Economics	2	Article
101	Lee D.; Kim S.; Kim S.	Development of hybrid model for estimating construction waste for multifamily residential buildings using artificial neural networks and ant colony optimization	2016	Sustainability (Switzerland)	13	Article
102	Ghanimeh S.; Jawad D.; Semaan P.	Quantification of construction and demolition waste: A measure toward effective modeling	2016	2016 3rd International Conference on Advances in Computational Tools for Engineering Applications, ACTEA 2016	4	Conference paper
103	Correia M.N.; Gomes M.C.; Duque J.	Optimization of Construction and Demolition Waste Management: Application to the Lisbon Metropolitan Area	2015	Studies in Big Data	0	Book chapter
104	Jia S.; Yan G.; Shen A.; Zheng J.	Dynamic simulation analysis of a construction and demolition waste management model under penalty and subsidy mechanisms	2017	Journal of Cleaner Production	78	Article
105	Mohammadinia A.; Arulrajah A.;	Alkali-activation of fly ash and cement kiln dust mixtures for stabilization of demolition aggregates	2018	Construction and Building Materials	46	Article

	D'Amico A.; Horpibulsuk S.					
106	Kucukvar M.; Egilmez G.; Tatari O.	Life cycle assessment and optimization-based decision analysis of construction waste recycling for a LEED-certified university building	2016	Sustainability (Switzerland)	58	Article
107	Pang Y.; Xiao Y.; Liu J.	A dynamic model for simulation of the scale of industrial Chain of construction waste reclamation in China	2017	Open Construction and Building Technology Journal	1	Review
108	Banihashemi S.; Tabadkani A.; Hosseini M.R.	Modular Coordination-based Generative Algorithm to Optimize Construction Waste	2017	Procedia Engineering	20	Conference paper
109	Jiang W.; Chen Y.; Zhou Y.; Fu Y.	Cost analysis and transportation strategy of contractors considering construction waste transfer	2018	Conference Proceedings of the 6th International Symposium on Project Management, ISPM 2018	0	Conference paper
110	Suciati H.; Adi T.J.W.; Wiguna I.P.A.	A dynamic model for assessing the effects of construction workers' waste behavior to reduce material waste	2018	International Journal on Advanced Science, Engineering and Information Technology	4	Article
111	Calvo N.; Feás J.; Pérez I.; Pasandín A.R.	Waste management in civil engineering: A dynamic framework	2015	Environmental Engineering and Management Journal	1	Article
112	Nikmehr B.; Reza Hosseini M.; Rameezdeen R.; Chileshe N.; Ghoddousi P.; Arashpour M.	An integrated model for factors affecting construction and demolition waste management in Iran	2017	Engineering, Construction and Architectural Management	50	Article
113	de Andrade A.R.; Gomes M.C.; Duque J.	New approach for optimization of construction and demolition waste management: Application to the Lisbon metropolitan area	2018	Springer Proceedings in Mathematics and Statistics	0	Conference paper
114	Li G.; Yang J.	Formula optimization of the autoclaved construction-waste brick and mechanism analysis of the strength formation in the production process	2015	Fresenius Environmental Bulletin	0	Article
115	Wang Q.; Qin S.	The impact of construction waste discharge and penalty changes on enterprises reduction behavior	2017	4th International Conference on Industrial Economics System and Industrial Security Engineering, IEIS 2017	0	Conference paper
116	Llatas C.; Osmani M.	Development and validation of a building design waste reduction model	2016	Waste Management	37	Article
117	Asgari A.; Ghorbanian T.; Yousefi N.; Dadashzadeh D.; Khalili F.; Bagheri A.; Raei M.; Mahvi A.H.	Quality and quantity of construction and demolition waste in Tehran	2017	Journal of Environmental Health Science and Engineering	56	Article
118	Moussavi Nadoushani Z.S.; Hammad A.W.A.; Xiao J.; Akbarnezhad A.	Minimizing cutting wastes of reinforcing steel bars through optimizing lap splicing within reinforced concrete elements	2018	Construction and Building Materials	28	Article
119	Kuritcyn P.; Anding K.; Notni G.	Increasing performance of supervised machine learning methods by analysis of construction and demolition waste	2016	14th IMEKO TC10 Workshop on Technical Diagnostics 2016: New Perspectives in Measurements, Tools and Techniques for Systems Reliability, Maintainability and Safety	0	Conference paper
120	Yang C.; Chen J.	A Robust Optimization Approach to the Regional Construction and Demolition Waste Reverse Logistics Network Design	2018	ICCREM 2018: Sustainable Construction and Prefabrication - Proceedings of the International Conference on Construction and Real Estate Management 2018	2	Conference paper

121	Jia S.; Liu X.; Yan G.	Dynamic analysis of construction and demolition waste management model based on system dynamics and grey model approach	2018	Clean Technologies and Environmental Policy	16	Article
122	Fonollosa P.; Couchy F.; Cremona C.	Characterization of foamcretes with recycled fillers	2019	fib Symposium	0	Conference paper
123	Paz D.H.F.; Lafayette K.P.V.; Sobral M.C.	GIS-based planning system for managing the flow of construction and demolition waste in Brazil	2018	Waste Management and Research	25	Article
124	Li R.Y.M.; Leung T.H.	Sustainable construction waste management in Adelaide	2019	Proceedings of 22nd International Conference on Advancement of Construction Management and Real Estate, CRIOCM 2017	0	Conference paper
125	Kelly M.; Dowd D.	A review of construction waste management practices on selected case studies in Ireland	2017	Proceedings of Institution of Civil Engineers: Waste and Resource Management	6	Article
126	Yi W.; Wang S.; Attard M.	Construction site layout for minimization of transportation cost: Step-by-step teaching approach	2019	Proceedings of the 24th International Conference of Hong Kong Society for Transportation Studies, HKSTS 2019: Transport and Smart Cities	0	Conference paper
127	Carpio M.; Roldán-Fontana J.; Pacheco-Torres R.; Ordóñez J.	Construction waste estimation depending on urban planning options in the design stage of residential buildings	2016	Construction and Building Materials	16	Article
128	Lee S.; Pan W.; Linner T.; Bock T.	A framework for robot assisted deconstruction: Process, sub-systems and modelling	2015	32nd International Symposium on Automation and Robotics in Construction and Mining: Connected to the Future, Proceedings	11	Conference paper
129	Tatiya A.; Zhao D.; Syal M.; Berghorn G.H.; LaMore R.	Cost prediction model for building deconstruction in urban areas	2018	Journal of Cleaner Production	50	Article
130	Au L.S.; Ahn S.; Kim T.W.	System dynamic analysis of impacts of government charges on disposal of construction and demolition waste: A Hong Kong case study	2018	Sustainability (Switzerland)	30	Article
131	Fu P.; Li H.; Wang X.; Luo J.; Zhan S.-L.; Zuo C.	Multiobjective Location Model Design Based on Government Subsidy in the Recycling of CDW	2017	Mathematical Problems in Engineering	14	Article
132	Xie Q.; Fan X.R.; He Q.; Yang Y.	Location Model and Algorithm of Construction Waste Recycling Centers for Service Reliability	2015	Journal of Intelligent Systems	2	Article
133	Suárez Silgado S.; Calderón Valdiviezo L.; Gassó Domingo S.; Roca X.	Multi-criteria decision analysis to assess the environmental and economic performance of using recycled gypsum cement and recycled aggregate to produce concrete: The case of Catalonia (Spain)	2018	Resources, Conservation and Recycling	43	Article
134	Tesárek P.; Zobal O.; Prošek Z.; Plachý T.	Optimization of cement composites composition with milled recycled concrete and admixture of slag and lime hydrate	2019	Experimental Stress Analysis - 57th International Scientific Conference, EAN 2019 - Conference Proceedings	0	Conference paper
135	MacDonald I.J.; Mohan S.B.	Modeling lifetime greenhouse gas emissions associated with materials for various end-of-life treatments	2018	Environmental Monitoring and Assessment	1	Article
136	Koutamanis A.; van Reijn B.; van Bueren E.	Urban mining and buildings: A review of possibilities and limitations	2018	Resources, Conservation and Recycling	68	Article
137	Paz D.H.F.; Lafayette K.P.V.	Forecasting of construction and demolition waste in Brazil	2016	Waste Management and Research	25	Article
138	Wei L.; Wei C.; Sui S.	Study on fluorine pollution in a slag yard	2019	Applied Sciences (Switzerland)	0	Article

139	Wang C.; Liu S.; Zhang J.; Feng Y.; Chen S.	RGB-D based object segmentation in severe color degraded environment	2017	Communications in Computer and Information Science	5	Conference paper
140	Kerekes A.	Energetic impact of preheating of fresh air in added convex window	2019	International Review of Applied Sciences and Engineering	0	Article
141	Tošić N.; Marinković S.; Dašić T.; Stanić M.	Multicriteria optimization of natural and recycled aggregate concrete for structural use	2015	Journal of Cleaner Production	164	Article
142	Li X.	Research on the urban construction waste recycling network and its optimization	2016	Proceedings - 2016 8th International Conference on Measuring Technology and Mechatronics Automation, ICMTMA 2016	0	Conference paper
143	Liu J.; Chen J.; Tang K.	A Method for Estimation of the On-Site Construction Waste Quantity of Residential Projects	2018	ICCREM 2018: Sustainable Construction and Prefabrication - Proceedings of the International Conference on Construction and Real Estate Management 2018	4	Conference paper
144	Dong A.; You W.; Zhang H.	Research on construction waste treatment methods based on system dynamics	2018	Conference Proceedings of the 6th International Symposium on Project Management, ISPM 2018	1	Conference paper
145	Nikakhtar A.; Hosseini A.A.; Wong K.Y.; Zavichi A.	Application of lean construction principles to reduce construction process waste using computer simulation: A case study	2015	International Journal of Services and Operations Management	67	Article
146	Yuan H.; Wang J.	A system dynamics model for determining the waste disposal charging fee in construction	2014	European Journal of Operational Research	136	Article
147	Xu J.-J.; Chen Z.-P.; Ozbakkaloglu T.; Zhao X.-Y.; Demartino C.	A critical assessment of the compressive behavior of reinforced recycled aggregate concrete columns	2018	Engineering Structures	75	Article
148	Mor D.; Ramachandran M.	Optimization of solid wastes disposal strategy by fuzzy topsis method	2017	Nature Environment and Pollution Technology	11	Article
149	Lu W.; Chen X.; Peng Y.; Shen L.	Benchmarking construction waste management performance using big data	2015	Resources, Conservation and Recycling	117	Article
150	Vitale P.; Arena U.	An attributional life cycle assessment for an Italian residential multifamily building	2018	Environmental Technology (United Kingdom)	7	Article
151	Rahardjo H.; Satyanaga A.; Leong E.-C.; Noh O.	Performance of Residual Soil as Cover System for a Sanitary Landfill in Singapore	2017	Journal of Performance of Constructed Facilities	6	Article
152	Bilal M.; Oyedele L.O.; Munir K.; Ajayi S.O.; Akinade O.O.; Owolabi H.A.; Alaka H.A.	The application of web of data technologies in building materials information modelling for construction waste analytics	2017	Sustainable Materials and Technologies	19	Article
153	Chi C.-P.; Pei C.-C.	Finite Element Simulation Analysis on Crack Resistance of Recycled Concrete Beams of Hybrid Fiber with Waste Polypropylene Fiber	2018	IOP Conference Series: Materials Science and Engineering	4	Conference paper
154	Akinade O.O.; Oyedele L.O.; Bilal M.; Ajayi S.O.; Owolabi H.A.; Alaka H.A.; Bello S.A.	Waste minimisation through deconstruction: A BIM based Deconstructability Assessment Score (BIM-DAS)	2015	Resources, Conservation and Recycling	162	Article
155	Fonollosa P.; Couchy F.; Cremona C.	Characterization of foamcretes with recycled fillers	2019	Proceedings of the fib Symposium 2019: Concrete - Innovations in Materials, Design and Structures	0	Conference paper

156	Sun S.; Ma D.; Zhou G.	Applications and Analysis of the Composite wall on Construction in Heilongjiang Province	2015	Procedia Engineering	4	Conference paper
157		International Conference on Buildings and Environment, EnviBUILD 2013	2014	Advanced Materials Research	0	Conference review
158	Wang J.; Li Z.; Tam V.W.Y.	Identifying best design strategies for construction waste minimization	2015	Journal of Cleaner Production	129	Article
159	Correia M.N.; Gomes M.C.; Duque J.	Optimization of construction and demolition waste management: Application to the lisbon metropolitan area	2015	Operations Research and Big Data: IO2015-XVII Congress of Portuguese Association of Operational Research (APDIO)	3	Book chapter
160	Bakshan A.; Srour I.; Chehab G.; El-Fadel M.; Karaziwan J.	Behavioral determinants towards enhancing construction waste management: A Bayesian Network analysis	2017	Resources, Conservation and Recycling	88	Article
161	Gao Y.; Yin Y.; Li B.; He K.; Wang X.	Post-failure behavior analysis of the Shenzhen “12.20” CDW landfill landslide	2019	Waste Management	23	Article
162	Ding Z.; Yi G.; Tam V.W.Y.; Huang T.	A system dynamics-based environmental performance simulation of construction waste reduction management in China	2016	Waste Management	179	Article
163	Maqsoom A.; Hashmi A.A.Q.; Zeeshan M.; Arshad Q.; Nawaz A.; Zeeshan B.U.A.; Salahuddin H.	A system dynamics-based economic performance simulation of construction waste reduction management: Effective application of prefabrication	2019	Environmental Engineering and Management Journal	9	Review
164	Kunieda Y.; Codinhoto R.	Basic study of 4D-CAD application to demolition impact estimation	2018	Journal of Structural and Construction Engineering	4	Article
165	Harun N.A.; Ahmad A.C.; Ismail F.; Mahyuddin S.A.	Potential supply and demand of construction waste in secondary market	2019	International Journal of Innovative Technology and Exploring Engineering	0	Article
166	Skouras E.D.; Burganos V.N.	Three-dimensional simulation of the effects of demolition waste recycling into rotary cement kilns	2017	Industrial and Engineering Chemistry Research	3	Article
167		2013 2nd International Conference on Sustainable Energy and Environmental Engineering, ICSEEE 2013	2014	Applied Mechanics and Materials	0	Conference review
168	Ding Z.; Li M.; Li S.	An agent based modeling of building demolition waste sustainable management	2017	ICCREM 2017: Industry Regulation and Sustainable Development - Proceedings of the International Conference on Construction and Real Estate Management 2017	3	Conference paper
169	Ghanbari M.; Monir Abbasi A.; Ravanshadnia M.	Economic and Environmental Evaluation and Optimal Ratio of Natural and Recycled Aggregate Production	2017	Advances in Materials Science and Engineering	16	Article
170	Gómez-Soberón J.M.; Gómez-Soberón M.C.; Saldaña-Márquez H.; Gámez-García D.C.; Arredondo-Rea S.P.; Corral-Higuera R.	Comparative by simulating the eventual waste generation of building indoor pavements construction	2017	2016 World Congress on Sustainable Technologies, WCST 2016	3	Conference paper
171	Alves A.B.M.; Miller A.P.R.R.; De Lima J.E., Jr.; Miranda L.F.R.; De Medeiros M.H.F.	Economic evaluation to recycling plaster	2017	International Journal of Environment and Waste Management	0	Article
172	Wang Z.; Li H.; Zhang X.	Construction waste recycling robot for nails and screws: Computer vision technology and neural network approach	2019	Automation in Construction	123	Article
173	Bilal M.; Oyedele L.O.; Akinade	Big data architecture for construction waste analytics (CWA): A conceptual framework	2016	Journal of Building Engineering	121	Article

	O.O.; Ajayi S.O.; Alaka H.A.; Owolabi H.A.; Qadir J.; Pasha M.; Bello S.A.					
174	Zhang L.; Atkins A.S.	A Decision Support Application in Tracking Construction Waste Using Rule-based Reasoning and RFID Technology	2015	International Journal of Computational Intelligence Systems	0	Article
175	Qiu Y.; Zhao X.; Zhang X.	Optimal routing for safe construction and demolition waste transportation: A cvar criterion and big data analytics approach	2019	Tehnicki Vjesnik	4	Article
176	Ding Z.; Gong W.; Li S.; Wu Z.	System dynamics versus agent-based modeling: A review of complexity simulation in construction waste management	2018	Sustainability (Switzerland)	76	Article
177	Vieira C.S.	Seismic response analysis of a geogrid reinforced wall constructed with recycled Construction and Demolition Waste	2015	COMPDYN 2015 - 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering	0	Conference paper
178	Nguyen P.T.; Vo K.D.; Phan P.T.; Nguyen Q.L.H.T.T.; Huynh V.D.B.	Optimization of main factors affecting construction waste by the supply chain management	2019	International Journal of Supply Chain Management	3	Article
179	Gan V.J.L.; Cheng J.C.P.	Formulation and analysis of dynamic supply chain of backfill in construction waste management using agent-based modeling	2015	Advanced Engineering Informatics	37	Article
180	Doan D.T.; Chinda T.	Modeling construction and demolition waste recycling program in Bangkok: Benefit and cost analysis	2016	Journal of Construction Engineering and Management	53	Article
181	Won J.; Cheng J.C.P.; Lee G.	Quantification of construction waste prevented by BIM-based design validation: Case studies in South Korea	2016	Waste Management	127	Article
182	Huang W.; Huang Y.; Lin S.; Chen Z.; Gao B.; Cui S.	Changing urban cement metabolism under rapid urbanization – A flow and stock perspective	2018	Journal of Cleaner Production	30	Article
183	Bonifazi G.; Picone N.; Serranti S.	Innovative hyperspectral imaging (HSI) based techniques applied to end-of-life concrete drill core characterization for optimal dismantling and materials recovery	2015	Proceedings of SPIE - The International Society for Optical Engineering	1	Conference paper
184	Li L.; Weber R.; Liu J.; Hu J.	Long-term emissions of hexabromocyclododecane as a chemical of concern in products in China	2016	Environment International	37	Article
185	Zaki T.; Nassar K.; Hosny O.	Parametric Blockwall-Assembly Algorithms for the Automated Generation of Virtual Wall Mockups Using BIM	2017	AEI 2017: Resilience of the Integrated Building - Proceedings of the Architectural Engineering National Conference 2017	6	Conference paper
186	Chen X.; Lu W.; Xue F.; Xu J.	A cost-benefit analysis of green buildings with respect to construction waste minimization using big data in Hong Kong	2018	Journal of Green Building	27	Article
187	Ding Z.; Gong W.; Yifei W.; Zou P.X.W.; Wang Y.	ABM-based environmental performance simulation study of demolition waste management policies in Shenzhen, China	2019	Proceedings of 22nd International Conference on Advancement of Construction Management and Real Estate, CRIOCM 2017	0	Conference paper
188		3rd International Conference on Civil, offshore and Environmental Engineering, ICCOEE 2016	2016	Engineering Challenges for Sustainable Future - Proceedings of the 3rd International Conference on Civil, offshore and Environmental Engineering, ICCOEE 2016	0	Conference review
189	Bosch-Sijtsema P.; Buser M.	Construction and demolition waste management on the building site: A literature review	2017	Association of Researchers in Construction Management, ARCOM - 33rd Annual Conference 2017, Proceeding	6	Conference paper

190	Kalderis D.; Kayan B.; Akay S.; Kulaksiz E.; Gözmen B.	Adsorption of 2,4-dichlorophenol on paper sludge/wheat husk biochar: Process optimization and comparison with biochars prepared from wood chips, sewage sludge and HOG fuel/demolition waste	2017	Journal of Environmental Chemical Engineering	83	Article
191	Grigor'Eva L.S.; Oleinik P.P.	Modelling of Processing Construction Waste Management System	2016	Procedia Engineering	9	Conference paper
192	Kuritcyn P.; Anding K.; Linß E.; Notni G.	Using hybrid information of colour image analysis and SWIR-spectrum for high-precision analysis of construction and demolition waste	2019	Optical Characterization of Materials	0	Conference paper
193	Ding Z.; Zhu M.; Tam V.W.Y.; Yi G.; Tran C.N.N.	A system dynamics-based environmental benefit assessment model of construction waste reduction management at the design and construction stages	2018	Journal of Cleaner Production	166	Article
194	Liu J.; Zhuang M.; Li S.; Zhao S.; Huang B.	System dynamic analysis of disposal policy of construction and demolition waste in urban village	2019	Ekoloji	5	Article
195	Banihashemi S.; Tabadkani A.; Hosseini M.R.	Integration of parametric design into modular coordination: A construction waste reduction workflow	2018	Automation in Construction	93	Article
196	Gómez-Meijide B.; Pérez I.	Nonlinear elastic behavior of bitumen emulsion-stabilized materials with C&D waste aggregates	2015	Construction and Building Materials	23	Article
197	Armatmontree A.; San-Um W.; Keatmanee C.	Design and Analysis of a Hammer Mill Machine in High-Efficacy Recycle Process	2018	Proceedings of the Conference on the Industrial and Commercial Use of Energy, ICUE	2	Conference paper
198	Parisi Kern A.; Ferreira Dias M.; Piva Kulakowski M.; Paulo Gomes L.	Waste generated in high-rise buildings construction: A quantification model based on statistical multiple regression	2015	Waste Management	74	Article
199	Oliveira Neto R.; Gastineau P.; Cazacliu B.G.; Le Guen L.; Paranhos R.S.; Petter C.O.	An economic analysis of the processing technologies in CDW recycling platforms	2017	Waste Management	53	Article
200		International Workshop on Materials and Mechanical Engineering, WMME 2013	2014	Applied Mechanics and Materials	0	Conference review
201	Anurag; Singh S.K.	Impact of using recycled demolition waste as aggregates in steel fiber reinforced self-compacting concrete on its durability properties	2021	Materials Today: Proceedings	2	Conference paper
202	Pešta J.; Šerešová M.; Kočí V.	Carbon footprint assessment of construction waste packaging using the package-to-product indicator	2020	Sustainability (Switzerland)	2	Article
203	Su Y.	Multi-agent evolutionary game in the recycling utilization of construction waste	2020	Science of the Total Environment	65	Article
204	Liu S.; Feng Y.; Zhang S.; Song H.; Chen S.	L0 sparse regularization-based image blind deblurring approach for solid waste image restoration	2019	IEEE Transactions on Industrial Electronics	14	Article
205	Mor-Mussery A.; Helman D.; Agmon Y.; Ben-Shabat I.; El-Frejat S.; Golan D.G.	The indigenous Bedouin farmers as land rehabilitators—Setup of an action research programme in the Negev	2020	Land Degradation and Development	5	Article
206	Zhang C.; Hu M.; Yang X.; Amati A.; Tukker A.	Life cycle greenhouse gas emission and cost analysis of prefabricated concrete building façade elements	2020	Journal of Industrial Ecology	34	Article
207	Azúa G.; González M.; Arroyo P.; Kurama Y.	Recycled coarse aggregates from precast plant and building demolitions: Environmental and economic modeling through stochastic simulations	2019	Journal of Cleaner Production	55	Article
208	Chen W.; Zhao Y.; Yu Y.; Chen K.; Arashpour M.	Collaborative scheduling of on-site and off-site operations in prefabrication	2020	Sustainability (Switzerland)	21	Article

209	Tiedemann T.; Keppner M.; Runge T.; Vögele T.; Wittmaier M.; Wolff S.	Concept of a robotic system for autonomous coarse waste recycling	2021	Proceedings of the 18th International Conference on Informatics in Control, Automation and Robotics, ICINCO 2021	3	Conference paper
210	Bajjou M.S.; Chafi A.	Application of simulation modelling for waste assessment: A case study of bricklaying process	2021	International Journal of Engineering Research in Africa	5	Article
211	Imadabathuni L.S.; Asadi S.S.; Chandra D.S.	Evaluation of optimum utilization of resources in construction industry	2019	International Journal of Recent Technology and Engineering	0	Article
212	Huh J.-H.; Park J.H.	Decrepit building monitoring solution for zero energy building management using PLC and android application	2020	Sustainability (Switzerland)	4	Article
213	Santos A.C.; Mendes P.; Ribau Teixeira M.	Social life cycle analysis as a tool for sustainable management of illegal waste dumping in municipal services	2019	Journal of Cleaner Production	47	Article
214	Wi S.; Yang S.; Berardi U.; Kim S.	Assessment of recycled ceramic-based inorganic insulation for improving energy efficiency and flame retardancy of buildings	2019	Environment International	25	Article
215	Walz J.; Linß E.; Könke C.	Automatic image analysis of mineral construction and demolition waste (CDW) using machine learning methods and deep learning	2021	EG-ICE 2021 Workshop on Intelligent Computing in Engineering, Proceedings	0	Conference paper
216	Quiñones R.; Llatas C.; Montes M.V.; Cortés I.	Rehabilitation vs Demolition Methodology to Compare the Waste Generated in Alternative Scenarios of Building Elements in BIM During the Design Stage	2021	Springer Series in Geomechanics and Geoengineering	1	Conference paper
217	Kovacic I.; Honic M.; Sreckovic M.	Digital platform for circular economy in aec industry	2020	Engineering Project Organization Journal	25	Article
218	Jaballah A.; Cherif-Khettaf W.R.	Multi-trip Pickup and Delivery Problem, with Split Loads, Profits and Multiple Time Windows to Model a Real Case Problem in the Construction Industry	2021	International Conference on Operations Research and Enterprise Systems	0	Conference paper
219	Amrutha Balan M.B.; Abin Thomas C.A.	Experimental Study and Optimisation of Best Performance Self Compacting Recycled Aggregate Concrete	2020	Lecture Notes in Civil Engineering	1	Book chapter
220	Shi Q.; Ren H.; Ma X.; Xiao Y.	Site selection of construction waste recycling plant	2019	Journal of Cleaner Production	38	Article
221	Xiao Y.; Liu J.; Pang Y.	Co-evolution of construction waste recycling industrial chain based on lotka–volterra model	2021	International Journal of Circuits, Systems and Signal Processing	0	Article
222	Iringová A.; Vandličková D.; Diviš M.	The Use of Products Recycled from Municipal Waste in Sustainable Architecture	2019	IOP Conference Series: Earth and Environmental Science	0	Conference paper
223	Qiu W.; Liu Y.; Lu F.; Huang G.	Establishing a sustainable evaluation indicator system for railway tunnel in China	2020	Journal of Cleaner Production	26	Article
224	Vaccaro G.; Buoninconti L.	3D print e circular economy: Innovation and sustainability for the construction sector; [3D print e circular economy: Innovazione e sostenibilità per il settore delle costruzioni]	2021	Sustainable Mediterranean Construction	3	Article
225	Hao J.; Yuan H.; Liu J.; Chin C.S.; Lu W.	A model for assessing the economic performance of construction waste reduction	2019	Journal of Cleaner Production	64	Article
226	Rakotonjanahary M.; Scholzen F.; Waldmann D.	Summertime overheating risk assessment of a flexible plug-in modular unit in luxembourg	2020	Sustainability (Switzerland)	7	Article
227	Long H.; Liu H.; Li X.; Chen L.	An evolutionary game theory study for construction and demolition waste recycling considering green development performance under the chinese government's reward–penalty mechanism	2020	International Journal of Environmental Research and Public Health	69	Article
228	Akanbi L.A.; Oyedele A.O.; Oyedele L.O.; Salami R.O.	Deep learning model for Demolition Waste Prediction in a circular economy	2020	Journal of Cleaner Production	83	Article
229	Huang Q.; Qian Z.; Hu J.; Zheng D.	Evaluation of stone mastic asphalt containing ceramicwaste aggregate for cooling asphalt pavement	2020	Materials	15	Article

230	Majzoub O.; Haeusler M.H.	Investigating Computational Methods and Strategies to Reduce Construction and Demolition Waste in Preliminary Design	2021	Proceedings of the International Conference on Education and Research in Computer Aided Architectural Design in Europe	2	Conference paper
231	Kvočka D.; Lešek A.; Knez F.; Ducman V.; Panizza M.; Tsoutis C.; Bernardi A.	Life cycle assessment of prefabricated geopolymeric façade cladding panels made from large fractions of recycled construction and demolition waste	2020	Materials	23	Article
232	Luciano A.; Reale P.; Cutaia L.; Carletti R.; Pentassuglia R.; Elmo G.; Mancini G.	Resources Optimization and Sustainable Waste Management in Construction Chain in Italy: Toward a Resource Efficiency Plan	2020	Waste and Biomass Valorization	23	Article
233	Churkin S.V.; Korshunov A.A.	Determination of thermal conductivity of backfill	2020	IOP Conference Series: Materials Science and Engineering	0	Conference paper
234	Zhuang J.; Yang J.; Fang H.; Xiao W.; Ku Y.	Recognition of concrete and gray brick based on color and texture features	2019	Journal of Testing and Evaluation	3	Article
235	Joshi D.D.; Patel P.V.; Rangwala H.M.; Patoliya B.G.	Experimental and Numerical Studies of Precast Connection Under Progressive Collapse Scenario	2020	Advances in Concrete Construction	5	Article
236	Ali T.H.; Akhund M.A.; Memon N.A.; Memon A.H.; Imad H.U.; Khahro S.H.	Application of Artifical Intelligence in Construction Waste Management	2019	Proceedings of 2019 8th International Conference on Industrial Technology and Management, ICITM 2019	21	Conference paper
237	Quesada-Ruiz L.C.; Perez L.; Rodriguez-Galiano V.	Spatiotemporal analysis of the housing bubble's contribution to the proliferation of illegal landfills – The case of Gran Canaria	2019	Science of the Total Environment	5	Article
238	AlZaghrini N.; Srour F.J.; Srour I.	Using GIS and optimization to manage construction and demolition waste: The case of abandoned quarries in Lebanon	2019	Waste Management	38	Article
239	Trochu J.; Chaabane A.; Ouhimmou M.	A two-stage stochastic optimization model for reverse logistics network design under dynamic suppliers' locations	2019	Waste Management	32	Article
240	Zhang L.W.; Sojobi A.O.; Kodur V.K.R.; Liew K.M.	Effective utilization and recycling of mixed recycled aggregates for a greener environment	2019	Journal of Cleaner Production	126	Article
241	Kusheva R.; Petrova R.	CONSTRUCTION AND DEMOLITION WASTE BEST MANAGEMENT PRACTICES IN EUROPE - BENCH-MARKING ANALYSIS. DIGITAL TOOLS; [LAS MEJORES PRÁCTICAS DE GESTIÓN DE RESIDUOS DE CONSTRUCCIÓN Y DEMOLICIÓN EN EUROPA: ANÁLISIS COMPARATIVO. HERRAMIENTAS DIGITALES]	2020	Proceedings from the International Congress on Project Management and Engineering	0	Conference paper
242	Bizcocho N.; Llatas C.	Inclusion of prevention scenarios in LCA of construction waste management	2019	International Journal of Life Cycle Assessment	17	Review
243	Hu Q.; Peng Y.; Guo C.; Cai D.; Su P.	Dynamic incentive mechanism design for recycling construction and Demolition waste under dual information asymmetry	2019	Sustainability (Switzerland)	12	Article
244		3rd International conference on Innovative Technologies for Clean and Sustainable Development, ITCSD 2020	2021	RILEM Bookseries	0	Conference review
245	Zhu X.; Huang Y.; Yan R.	SYSTEM DYNAMICS-BASED REDUCTION MECHANISM STUDY OF CONSTRUCTION WASTE	2021	Journal of Environmental Protection and Ecology	2	Article
246	Wang Z.; Li H.; Yang X.	Vision-based robotic system for on-site construction and demolition waste sorting and recycling	2020	Journal of Building Engineering	59	Article

247	Ku Y.-D.; Yang J.-H.; Fang H.-Y.; Xiao W.; Zhuang J.-T.	Optimization of Grasping Efficiency of a Robot Used for Sorting Construction and Demolition Waste	2020	International Journal of Automation and Computing	18	Article
248	Aleksanin A.	Development of construction waste management	2019	E3S Web of Conferences	7	Conference paper
249	Drochytka R.; Dufek Z.; Michalčíková M.; Hodul J.	Study of possibilities of using special types of building and demolition waste in civil engineering	2020	Periodica Polytechnica Civil Engineering	7	Article
250	Ayzenshtadt A.M.; Danilov V.E.; Drozdyuk T.A.; Frolova M.A.; Garamov G.A.	Integral quality indicators of waste concrete for reuse	2021	Nanotechnologies in Construction	1	Article
251	Xu J.; Shi Y.; Zhao S.	Reverse Logistics Network-Based Multiperiod Optimization for Construction and Demolition Waste Disposal	2019	Journal of Construction Engineering and Management	39	Article
252	Shi Y.; Huang Y.; Xu J.	Technological paradigm-based construction and demolition waste supply chain optimization with carbon policy	2020	Journal of Cleaner Production	17	Article
253	Saberian M.; Li J.; Boroujeni M.; Law D.; Li C.-Q.	Application of demolition wastes mixed with crushed glass and crumb rubber in pavement base/subbase	2020	Resources, Conservation and Recycling	71	Article
254	Xiao W.; Yang J.; Fang H.; Zhuang J.; Ku Y.	A robust classification algorithm for separation of construction waste using NIR hyperspectral system	2019	Waste Management	42	Article
255	Zhao L.; Liu Z.; Mbachu J.	Optimization of the supplier selection process in prefabrication using BIM	2019	Buildings	19	Article
256		ANZAScA 2020 - 54th International Conference of the Architectural Science Association: Imaginable Futures: Design Thinking, and the Scientific Method	2020	Proceedings of the International Conference of Architectural Science Association	0	Conference review
257	Wang Y.; Huang J.; Wu T.; Huang J.; Liu Y.	Comprehensive utilization study of waste red brick in urban reconstruction	2020	IOP Conference Series: Earth and Environmental Science	1	Conference paper
258	Pavlin M.; Frankovič A.; Horvat B.; Ducman V.	Optimization of Alkali-Activated Mineral Wool Mixture for Panel Production	2021	RILEM Bookseries	0	Book chapter
259	Üçer Erduran D.; Elias-Ozkan S.T.; Ulybin A.	Assessing potential environmental impact and construction cost of reclaimed masonry walls	2020	International Journal of Life Cycle Assessment	8	Article
260	Li X.	Dynamic simulation of system flow of green building complexes considering ecological environment vulnerability	2020	Fresenius Environmental Bulletin	1	Article
261	Liu J.; Liu Y.; Wang X.	An environmental assessment model of construction and demolition waste based on system dynamics: a case study in Guangzhou	2020	Environmental Science and Pollution Research	170	Article
262	Jaballah A.; Cherif-Khettaf W.R.	Multi-trip pickup and delivery problem, with split loads, profits and multiple time windows to model a real case problem in the construction industry	2021	ICORES 2021 - Proceedings of the 10th International Conference on Operations Research and Enterprise Systems	2	Conference paper
263	Hasan U.; Whyte A.; Al Jassmi H.	Life cycle assessment of roadworks in United Arab Emirates: Recycled construction waste, reclaimed asphalt pavement, warm-mix asphalt and blast furnace slag use against traditional approach	2020	Journal of Cleaner Production	55	Article
264	Cha G.-W.; Moon H.J.; Kim Y.-M.; Hong W.-H.; Hwang J.-H.; Park W.-J.; Kim Y.-C.	Development of a prediction model for demolition waste generation using a random forest algorithm based on small datasets	2020	International Journal of Environmental Research and Public Health	35	Article

265	Bilal M.; Oyedele L.O.; Akinade O.O.; Delgado J.M.D.; Akanbi L.A.; Ajayi A.O.; Younis M.S.	Design optimisation using convex programming: Towards waste-efficient building designs	2019	Journal of Building Engineering	7	Article
266	Yang C.; Chen J.	Robust design for a multi-echelon regional construction and demolition waste reverse logistics network based on decision Maker's conservative attitude	2020	Journal of Cleaner Production	19	Article
267	Xiao W.; Yang J.; Fang H.; Zhuang J.; Ku Y.; Zhang X.	Development of an automatic sorting robot for construction and demolition waste	2020	Clean Technologies and Environmental Policy	32	Article
268	Heigermoser D.; García de Soto B.; Abbott E.L.S.; Chua D.K.H.	BIM-based Last Planner System tool for improving construction project management	2019	Automation in Construction	103	Article
269	Lin X.; Vollpracht A.; Markus P.; Linnemann V.	Optimization of a German short term percolation test to determine the leaching of granular materials	2020	Waste Management	1	Article
270	Guerra B.C.; Leite F.; Faust K.M.	4D-BIM to enhance construction waste reuse and recycle planning: Case studies on concrete and drywall waste streams	2020	Waste Management	72	Article
271	Su P.; Peng Y.; Hu Q.; Tan R.	Incentive mechanism and subsidy design for construction and demolition waste recycling under information asymmetry with reciprocal behaviors	2020	International Journal of Environmental Research and Public Health	17	Article
272	Du L.; Feng Y.; Lu W.; Kong L.; Yang Z.	Evolutionary game analysis of stakeholders' decision-making behaviours in construction and demolition waste management	2020	Environmental Impact Assessment Review	84	Article
273	Zheng C.; Yi C.; Lu M.	Integrated optimization of rebar detailing design and installation planning for waste reduction and productivity improvement	2019	Automation in Construction	35	Article
274	Tanguay-Rioux F.; Legros R.; Spreutels L.	Particle size analysis of municipal solid waste for treatment process modeling	2020	Waste Management and Research	1	Article
275	Cha G.; Moon H.; Kim J.	A method to improve the performance of support vector machine regression model for predicting demolition waste generation using categorical principal components analysis	2021	International Journal of Sustainable Building Technology and Urban Development	2	Article
276	Xiaonan W.; Wei W.; Ting C.; Kehua S.; Li H.	Using RBF Neural Network in Forecasting Urban Construction and Demolition Waste Generation	2020	Proceedings - 2020 International Conference on Big Data and Social Sciences, ICBDSS 2020	0	Conference paper
277	Cai T.; Wang G.; Guo Z.	Construction and Demolition Waste Generation Forecasting Using a Hybrid Intelligent Method	2020	ICITM 2020 - 2020 9th International Conference on Industrial Technology and Management	4	Conference paper
278	Yang B.; Song X.; Yuan H.; Zuo J.	A model for investigating construction workers' waste reduction behaviors	2020	Journal of Cleaner Production	23	Article
279	Hafez H.; Kurda R.; Kurda R.; Al-Hadad B.; Mustafa R.; Ali B.	A critical review on the influence of fine recycled aggregates on technical performance, environmental impact and cost of concrete	2020	Applied Sciences (Switzerland)	27	Review
280	Aleksanin A.	Modern methods of increasing the level of resource saving in construction	2020	IOP Conference Series: Materials Science and Engineering	2	Conference paper
281	Su Y.; Si H.; Chen J.; Wu G.	Promoting the sustainable development of the recycling market of construction and demolition waste: A stakeholder game perspective	2020	Journal of Cleaner Production	40	Article
282	Goyal L.K.; Rai H.S.	BIM Approach for Sustainable Design of Flat Slab Buildings: A Review	2020	IOP Conference Series: Materials Science and Engineering	0	Conference paper

283		5th Australasia and South East Asia Conference on Structural Engineering and Construction, ASEA-SEC-5 2020	2020	Proceedings of International Structural Engineering and Construction	0	Conference review
284	Chen J.; Hua C.; Liu C.	Considerations for better construction and demolition waste management: Identifying the decision behaviors of contractors and government departments through a game theory decision-making model	2019	Journal of Cleaner Production	99	Article
285	Mak T.M.W.; Chen P.-C.; Wang L.; Tsang D.C.W.; Hsu S.C.; Poon C.S.	A system dynamics approach to determine construction waste disposal charge in Hong Kong	2019	Journal of Cleaner Production	58	Article
286	Shahi S.; Wozniczk P.; Truyensb T.; Trudeaub I.; Haasa C.	Energy performance and lca-driven computational design methodology for integrating modular construction in adaptation of concrete residential towers in cold climates	2020	Proceedings of the 37th International Symposium on Automation and Robotics in Construction, ISARC 2020: From Demonstration to Practical Use - To New Stage of Construction Robot	0	Conference paper
287		2019 4th International Conference on Environmental Engineering and Sustainable Development, CEESD 2019	2020	IOP Conference Series: Earth and Environmental Science	0	Conference review
288	Yue Q.	Research on Contractual Relationship Optimization of Urban Construction Waste Disposal PPP Project	2019	IOP Conference Series: Earth and Environmental Science	0	Conference paper
289	Liu J.; Teng Y.; Wang D.; Gong E.	System dynamic analysis of construction waste recycling industry chain in China	2020	Environmental Science and Pollution Research	42	Article
290	Zheng T.; Wang B.; Rajaeifar M.A.; Heidrich O.; Zheng J.; Liang Y.; Zhang H.	How government policies can make waste cooking oil-to-biodiesel supply chains more efficient and sustainable	2020	Journal of Cleaner Production	36	Article
291	Waskow R.P.; dos Santos V.L.G.; Ambrós W.M.; Sampaio C.H.; Passuello A.; Tubino R.M.C.	Optimization and dust emissions analysis of the air jigging technology applied to the recycling of construction and demolition waste	2020	Journal of Environmental Management	12	Article
292	Kunieda Y.; Codinhoto R.; Emmitt S.	Increasing the efficiency and efficacy of demolition through computerised 4D simulation	2019	Engineering, Construction and Architectural Management	8	Article
293	Geetha S.; Selvakumar M.; Muthulakshmi S.	Optimization of high strength concrete with construction and demolition waste	2020	IOP Conference Series: Materials Science and Engineering	1	Conference paper
294	Ghorbani B.; Arulrajah A.; Narsilio G.; Horpibulsuk S.	Experimental investigation and modelling the deformation properties of demolition wastes subjected to freeze–thaw cycles using ANN and SVR	2020	Construction and Building Materials	42	Article
295	El Kanzaoui M.; Guenbour A.; Boussen R.; Hajjaji A.	Environmental Approach, Processing, and Valorization Solid Waste Ceramic Breaks	2021	Environmental Science and Engineering	0	Conference paper
296	Aidonis D.	Multiobjective mathematical programming model for the optimization of end-of-life buildings' deconstruction and demolition processes	2019	Sustainability (Switzerland)	13	Article
297	Globa S.B.; Ashkerov M.; Arnold V.; Berezovaya V.V.	Optimisation of Material Flows in the Concept Urban Mining Based on the Use of Long-Term Storage Depot	2021	Studies in Systems, Decision and Control	0	Book chapter
298	Bagarić M.; Banjad Pečur I.; Milovanović B.	Hygrothermal performance of ventilated prefabricated sandwich wall panel from recycled construction and demolition waste – A case study	2020	Energy and Buildings	24	Article

299	Pečur I.B.; Bagarić M.; Milovanović B.	Development and application of a prefabricated façade panel containing recycled construction and demolition waste	2020	Journal of Facade Design and Engineering	4	Article
300	Liu J.; Xiao Y.; Wang D.; Pang Y.	Optimization of site selection for construction and demolition waste recycling plant using genetic algorithm	2019	Neural Computing and Applications	19	Article
301	Aboginije A.; Aigbavboa C.; Thwala W.	A holistic assessment of construction and demolition waste management in the nigerian construction projects	2021	Sustainability (Switzerland)	6	Article
302		20th LACCEI International Multi-Conference for Engineering, Education Caribbean Conference for Engineering and Technology: "Education, Research and Leadership in Post-Pandemic Engineering: Resilient Inclusive and Sustainable Actions", LACCEI 2022	2022	Proceedings of the LACCEI international Multi-conference for Engineering, Education and Technology	0	Conference review
303	Hu J.; Liu P.; Huang Q.; Qian Z.; Luo S.	Research on interfacial zone failure of asphalt mixture mixed with recycled aggregates	2022	Construction and Building Materials	8	Article
304	Laovisutthichai V.; Lu W.; Bao Z.	Design for construction waste minimization: guidelines and practice	2022	Architectural Engineering and Design Management	12	Article
305	Hu W.; Dong J.; Xu N.	Multi-period planning of integrated underground logistics system network for automated construction-demolition-municipal waste collection and parcel delivery: A case study	2022	Journal of Cleaner Production	14	Article
306	Ghorbani B.; Arulrajah A.; Narsilio G.; Horpibulsuk S.; Bo M.W.	Shakedown analysis of PET blends with demolition waste as pavement base/subbase materials using experimental and neural network methods	2021	Transportation Geotechnics	25	Article
307	Yuan R.; Guo F.; Qian Y.; Cheng B.; Li J.; Tang X.; Peng X.	A system dynamic model for simulating the potential of prefabrication on construction waste reduction	2022	Environmental Science and Pollution Research	29	Article
308	Singh Y.; Singh H.	Applications of Fiber Reinforced Polymer Laminates in Strengthening of Structures	2021	RILEM Bookseries	0	Conference paper
309	Baik D.-S.	A Study on Analytical Methods for Installing Soundproof Walls	2021	International Journal of Mechanical Engineering	0	Article
310	Maghool F.; Senanayake M.; Arulrajah A.; Horpibulsuk S.	Permanent deformation and rutting resistance of demolition waste triple blends in unbound pavement applications	2021	Materials	7	Article
311	Rohini I.; Padmapriya R.; Anusuya R.; Sudarsan J.S.; Nithiyanantham S.	Valuation of characteristics strength by utilizing Construction and Demolition (C&D) waste as Recycled Aggregates (RA) in concrete	2021	Journal of Building Pathology and Rehabilitation	2	Article
312	L. S. Ferreira R.; A. S. Anjos M.; Maia C.; Pinto L.; R. G. de Azevedo A.; de Brito J.	Long-term analysis of the physical properties of the mixed recycled aggregate and their effect on the properties of mortars	2021	Construction and Building Materials	27	Article
313	Hu H.; Han L.; Li L.; Wang H.; Xu T.	Soil heavy metal pollution source analysis based on the land use type in Fengdong District of Xi'an, China	2021	Environmental Monitoring and Assessment	11	Article
314	Bao Z.; Lu W.	A decision-support framework for planning construction waste recycling: A case study of Shenzhen, China	2021	Journal of Cleaner Production	55	Article
315	Ding Z.; Cao X.; Shi M.; Tam V.W.Y.; Illankoon I.M.C.S.	New hybrid simulation model for urban construction waste management: An empirical study	2021	Proceedings of the Institution of Civil Engineers: Engineering Sustainability	2	Article
316	Wang H.; Pan X.; Zhang S.; Zhang P.	Simulation analysis of implementation effects of construction and demolition waste disposal policies	2021	Waste Management	23	Article

317	Yang D.; Dang M.; Sun L.; Han F.; Shi F.; Zhang H.; Zhang H.	A system dynamics model for urban residential building stock towards sustainability: The case of Jinan, China	2021	International Journal of Environmental Research and Public Health	7	Article
318	Eryue Z.; Qi J.	Optimization of construction waste transportation path for urban roads based on ECEA algorithm	2022	2022 IEEE 4th International Conference on Power, Intelligent Computing and Systems, ICPICS 2022	0	Conference paper
319		International Conference on Sustainable Practices and Innovations in Civil Engineering, SPICE 2021	2022	Lecture Notes in Civil Engineering	0	Conference review
320	Luo X.; Liu G.; Zhang Y.; Meng T.; Zhan L.	Estimation of resilient modulus of cement-treated construction and demolition waste with performance-related properties	2021	Construction and Building Materials	11	Article
321	Petcu C.; Vasile V.	TRADITIONAL BUILDING MATERIALS FOR SUSTAINABLE THERMAL INSULATING OF BUILDING ELEMENTS; [MATERIALE DE CONSTRUCȚII TRADIȚIONALE PENTRU IZOLAREA TERMICĂ DURABILĂ A ELEMENTELOR DE CONSTRUCȚII]	2022	Revista Romana de Materiale/ Romanian Journal of Materials	1	Article
322	Tsydenova N.; Becker T.; Walther G.	Optimised design of concrete recycling networks: The case of North Rhine-Westphalia	2021	Waste Management	5	Article
323	Bizarro D.E.G.; Lennartz J.	ENVIRONMENTAL LIFE CYCLE AND CIRCULARITY ASSESSMENT IN STRUCTURAL DESIGN; AN ALTERNATIVE APPROACH	2022	fib Symposium	0	Conference paper
324	Raza A.; Rafique U.	Efficiency of GFRP bars and hoops in recycled aggregate concrete columns: Experimental and numerical study	2021	Composite Structures	46	Article
325	Deng Y.; Xu C.; Marsheal F.; Geng X.; Chen Y.; Sun H.	Constituent effect on mechanical performance of crushed demolished construction waste/silt mixture	2021	Construction and Building Materials	10	Article
326	Barakat B.; Srour I.; Srour J.	ESTIMATING THE DEMOLITION PROBABILITY OF BUILDINGS USING A BOTTOM-UP APPROACH	2022	Proceedings of International Structural Engineering and Construction	0	Conference paper
327	Rakhshan K.; Morel J.-C.; Daneshkhah A.	Predicting the technical reusability of load-bearing building components: A probabilistic approach towards developing a Circular Economy framework	2021	Journal of Building Engineering	17	Article
328	Yan L.	Application Method of Environmental Protection Building Elements Based on Artificial Intelligence Technology in the Field of Urban Planning and Design	2022	Advances in Multimedia	0	Article
329	Mikhailenko P.; Piao Z.; Kakar M.R.; Bueno M.; Poulikakos L.D.	Durability and surface properties of low-noise pavements with recycled concrete aggregates	2021	Journal of Cleaner Production	17	Article
330	Cha G.-W.; Moon H.-J.; Kim Y.-C.	Comparison of random forest and gradient boosting machine models for predicting demolition waste based on small datasets and categorical variables	2021	International Journal of Environmental Research and Public Health	36	Article
331	Zheng F.; Wang C.; Wu X.	Simulation on Multiple Supervision Strategy of Construction Waste in China	2021	IOP Conference Series: Earth and Environmental Science	0	Conference paper
332	Tang J.; Zheng C.; Liu Z.; Li L.; Li X.	Simulation of microbial enhanced recycled aggregate preparation system based on artificial intelligence and embedded processor	2021	Microprocessors and Microsystems	0	Article
333	Saeed T.; Hossain N.	Organics and nutrients removal in vertical flow wetlands: loading fluctuation and alternative media	2021	Environmental Technology (United Kingdom)	10	Article
334	Ostrowska-Wawryniuk K.	Prefabrication 4.0: BIM-aided design of sustainable DIY-oriented houses	2021	International Journal of Architectural Computing	8	Article
335	Elshaboury N.; Marzouk M.	Optimizing construction and demolition waste transportation for sustainable construction projects	2021	Engineering, Construction and Architectural Management	14	Article
336	Xie H.; Dong J.; Deng Y.; Dai Y.	Research and Model Prediction on the Performance of Recycled Brick Powder Foam Concrete	2022	Advances in Civil Engineering	3	Article

337	Bravo M.; Duarte A.P.C.; De Brito J.; Evangelista L.	Tests and simulation of the bond-slip between steel and concrete with recycled aggregates from CDW	2021	Buildings	13	Article
338	Chulkov V.; Yevstigneyeva E.	Comparison of options and optimization of sorting and collection of waste at demolition sites during renovation	2021	E3S Web of Conferences	0	Conference paper
339	Sorociak W.; Konieczna K.; Król J.B.; Żymełka D.; Kowalski K.J.	Evaluation of Aging Processes in Binders Stabilised from Cationic Bituminous Emulsion	2022	RILEM Bookseries	0	Book chapter
340	Mohamad Ali Ridho B.K.A.; Ngamkhanong C.; Wu Y.; Kaewunruen S.	Recycled aggregates concrete compressive strength prediction using artificial neural networks (Anns)	2021	Infrastructures	35	Article
341	Na S.; Heo S.; Han S.; Shin Y.; Lee M.	Development of an Artificial Intelligence Model to Recognise Construction Waste by Applying Image Data Augmentation and Transfer Learning	2022	Buildings	23	Article
342	Ahmed R.R.; Zhang X.	Multi-stage network-based two-type cost minimization for the reverse logistics management of inert construction waste	2021	Waste Management	35	Article
343	Zhang H.-L.; Tang Y.; Meng T.; Zhan L.-T.	Evaluating the crushing characteristics of recycled construction and demolition waste for use in road bases	2021	Transportation Geotechnics	14	Article
344		International Conference on Sustainable Computing and Data Communication Systems, ICSCDS 2022 - Proceedings	2022	International Conference on Sustainable Computing and Data Communication Systems, ICSCDS 2022 - Proceedings	0	Conference review
345	Shao Z.; Li M.; Yu D.; Han C.; Meng L.	Evolutionary Game Model of Construction Enterprises and Construction Material Manufacturers in Construction and Demolition Waste Resource Utilization	2022	ICCREM 2022: Carbon Peak and Neutrality Strategies of the Construction Industry - Proceedings of the International Conference on Construction and Real Estate Management 2022	0	Conference paper
346	Hao J.; Chen Z.; Zhang Z.; Loehlein G.	Quantifying construction waste reduction through the application of prefabrication: a case study in Anhui, China	2021	Environmental Science and Pollution Research	31	Article
347	Liu J.; Yi Y.; Li C.Z.; Zhao Y.; Xiao Y.	A model for analyzing compensation for the treatment costs of construction waste	2021	Sustainable Energy Technologies and Assessments	17	Article
348	Baghban H.; Arulrajah A.; Narsilio G.A.; Horpibulsuk S.	DEM simulation of the thermo-geomechanical effect of recycled concrete aggregate assemblies in geothermal pavement bases	2021	Transportation Geotechnics	4	Article
349		2021 6th International Conference on Green Materials and Environmental Engineering	2021	IOP Conference Series: Earth and Environmental Science	0	Conference review
350	Wu P.-Y.; Mjörnell K.; Mangold M.; Sandels C.; Johansson T.	A data-driven approach to assess the risk of encountering hazardous materials in the building stock based on environmental inventories	2021	Sustainability (Switzerland)	8	Article
351	Quiñones R.; Llatas C.; Montes M.V.; Cortés I.	A multiplatform bim-integrated construction waste quantification model during design phase. The case of the structural system in a spanish building	2021	Recycling	21	Article
352	Yılmaz Y.; Seyis S.	Mapping the scientific research of the life cycle assessment in the construction industry: A scientometric analysis	2021	Building and Environment	20	Article
353	Yang Z.; Xue F.; Lu W.	Handling missing data for construction waste management: machine learning based on aggregated waste generation behaviors	2021	Resources, Conservation and Recycling	14	Article
354		3rd International Conference on Environment, Sustainability Issues, and Community Development	2021	IOP Conference Series: Earth and Environmental Science	0	Conference review

355	Cheng M.-Y.; Fang Y.-C.; Wang C.-Y.	Auto-tuning SOS Algorithm for Two-Dimensional Orthogonal Cutting Optimization	2021	KSCE Journal of Civil Engineering	8	Article
356	Haeusler M.H.; Gardner N.; Yu D.K.; Oh C.; Huang B.	(Computationally) designing out waste: Developing a computational design workflow for minimising construction and demolition waste in early-stage architectural design	2021	International Journal of Architectural Computing	4	Article
357	Zheng Y.; Zhang Y.; Zhang P.	Methods for improving the durability of recycled aggregate concrete: A review	2021	Journal of Materials Research and Technology	42	Review
358	Perera S.; Opoku D.-G.J.; Rodrigo N.	Technological advancements in green and sustainable construction	2021	The Construction Industry: Global Trends, Job Burnout and Safety Issues	2	Book chapter
359	Amine Laadila M.; LeBihan Y.; Caron R.-F.; Vaneeckhaute C.	Construction, renovation and demolition (CRD) wastes contaminated by gypsum residues: Characterization, treatment and valorization	2021	Waste Management	19	Review
360	Huang J.; Peng Y.; Tan R.; Guo C.	Alliance Strategy Of Construction And Demolition Waste Recycling Based On The Modified Shapley Value Under Government Regulation	2021	Journal of Industrial and Management Optimization	2	Article
361	Lu W.; Lou J.; Webster C.; Xue F.; Bao Z.; Chi B.	Estimating construction waste generation in the Greater Bay Area, China using machine learning	2021	Waste Management	50	Article
362	Aldebei F.; Dombi M.	Mining the built environment: Telling the story of urban mining	2021	Buildings	13	Review
363	Ding Z.; Cao X.; Wang Y.; Wu H.; Zuo J.; Zillante G.	Cost-benefit analysis of demolition waste management via agent-based modelling: A case study in Shenzhen	2022	Waste Management	15	Article
364	Chen J.; Lu W.; Xue F.	“Looking beneath the surface”: A visual-physical feature hybrid approach for unattended gauging of construction waste composition	2021	Journal of Environmental Management	28	Article
365	Ghorbani B.; Arulrajah A.; Narsilio G.; Horpibulsuk S.; Win Bo M.	Thermal and mechanical properties of demolition wastes in geothermal pavements by experimental and machine learning techniques	2021	Construction and Building Materials	21	Article
366	Zhang A.-L.; Wang H.-W.; Jiang Z.-Q.; Guo K.; Niu Z.-Y.	Numerical simulation analysis of double yield points assembled buckling-restrained brace with replaceable inner core	2022	Structures	10	Article
367	Yazdani M.; Kabirifar K.; Frimpong B.E.; Shariati M.; Mirmozaffari M.; Boskabadi A.	Improving construction and demolition waste collection service in an urban area using a simheuristic approach: A case study in Sydney, Australia	2021	Journal of Cleaner Production	237	Article
368	Chen H.; Zhou H.; Wu X.	The Evolutionary Game Model of the Multiple Governance System of Chinese Construction Waste	2021	IOP Conference Series: Earth and Environmental Science	0	Conference paper
369	Shuvaiev A.; Arutiunian I.; Anin V.; Ichetovkin A.; Sylenko S.	ENSURING THE ECONOMIC AND ENVIRONMENTAL EFFICIENCY IN MANAGING THE FLOWS OF CONSTRUCTION AND DEMOLITION WASTE BY USING TOOLS OF ECONOMIC AND MATHEMATICAL MODELING	2022	Eastern-European Journal of Enterprise Technologies	0	Article
370	Konstantinidis F.K.; Sifnaios S.; Tsimiklis G.; Mouroutsos S.G.; Amditis A.; Gasteratos A.	Multi-sensor cyber-physical sorting system (CPSS) based on Industry 4.0 principles: A multi-functional approach	2022	Procedia Computer Science	6	Conference paper
371	Favier A.; Petit A.	Strategies for Reducing the Environmental Footprint of Additive Manufacturing via Sprayed Concrete	2022	RILEM Bookseries	2	Book chapter

372	Leea H.J.; Heuera C.; Brell-Cokcana S.	Concept of a Robot Assisted On-Site Deconstruction Approach for Reusing Concrete Walls	2022	Proceedings of the International Symposium on Automation and Robotics in Construction	3	Conference paper
373	Wang T.-K.; Wu Z.; Luo C.	Multi-participant construction waste demolition and transportation decision-making system	2021	Resources, Conservation and Recycling	21	Article
374	Hu R.; Chen K.; Chen W.; Wang Q.; Luo H.	Estimation of construction waste generation based on an improved on-site measurement and SVM-based prediction model: A case of commercial buildings in China	2021	Waste Management	32	Article
375	Liu J.; Gong E.; Wang X.	Economic benefits of construction waste recycling enterprises under tax incentive policies	2022	Environmental Science and Pollution Research	20	Article
376	Ding Z.; Liu R.; Wang Y.; Tam V.W.; Ma M.	An agent-based model approach for urban demolition waste quantification and a management framework for stakeholders	2021	Journal of Cleaner Production	20	Article
377	Sojobi A.O.; Liew K.M.	Multi-objective optimization of high performance bio-inspired prefabricated composites for sustainable and resilient construction	2022	Composite Structures	35	Article
378	Anurag; Singh S.K.	Impact of using Recycled Demolition waste as Aggregates in Steel Fiber Reinforced Self-compacting Concrete on its Sulphate Resistance	2021	IOP Conference Series: Earth and Environmental Science	0	Conference paper
379	Chen Q.; Feng H.; Garcia de Soto B.	Revamping construction supply chain processes with circular economy strategies: A systematic literature review	2022	Journal of Cleaner Production	37	Review
380	Zhang C.; Hu M.; Laclau B.; Garnesson T.; Yang X.; Li C.; Tukker A.	Environmental life cycle costing at the early stage for supporting cost optimization of precast concrete panel for energy renovation of existing buildings	2021	Journal of Building Engineering	18	Article
381	Liu S.; Li Z.; Teng Y.; Dai L.	A dynamic simulation study on the sustainability of prefabricated buildings	2022	Sustainable Cities and Society	34	Article
382	Li X.; Huang R.; Dai J.; Li J.; Shen Q.	Research on the evolutionary game of construction and demolition waste (Cdw) recycling units' green behavior, considering remanufacturing capability	2021	International Journal of Environmental Research and Public Health	41	Article
383	Chen X.; Fang Y.; Shi X.; Cai Z.	Optimization of Transportation Route of Construction Waste Using the Quota Based Carbon Emissions Management	2022	ICCREM 2022: Carbon Peak and Neutrality Strategies of the Construction Industry - Proceedings of the International Conference on Construction and Real Estate Management 2022	0	Conference paper
384	Park K.; Ergan S.	Toward Intelligent Agents to Detect Work Pieces and Processes in Modular Construction: An Approach to Generate Synthetic Training Data	2022	Construction Research Congress 2022: Computer Applications, Automation, and Data Analytics - Selected Papers from Construction Research Congress 2022	4	Conference paper
385	Chen J.; Lu W.; Yuan L.; Wu Y.; Xue F.	Estimating construction waste truck payload volume using monocular vision	2022	Resources, Conservation and Recycling	16	Article
386	Qi B.; Pu L.; Xu C.; Zheng A.	Multi-robot Task Assignment Method in the Construction Waste Sorting System	2022	2022 IEEE International Conference on Mechatronics and Automation, ICMA 2022	0	Conference paper
387	Bosoc S.; Suciu G.; Scheianu A.; Petre I.	Real-time sorting system for the Construction and Demolition Waste materials	2021	Proceedings of the 13th International Conference on Electronics, Computers and Artificial Intelligence, ECAI 2021	5	Conference paper
388		International Conference on Computational Modeling, Simulation, and Data Analysis, CMSDA 2021	2022	Proceedings of SPIE - The International Society for Optical Engineering	0	Conference review
389	Suciu G.; Petre I.; Valentin Iordache G.; Ionel T.; Simionescu S.	Classification algorithm of an automated sorting system for Construction and Demolition Waste materials	2022	Proceedings - RoEduNet IEEE International Conference	3	Conference paper

390	Liu H.; Zhang J.; Li B.; Zhou N.; Li D.; Zhang L.; Xiao X.	Long term leaching behavior of arsenic from cemented paste backfill made of construction and demolition waste: Experimental and numerical simulation studies	2021	Journal of Hazardous Materials	20	Article
391	Sobotka A.; Sagan J.	Decision support system in management of concrete demolition waste	2021	Automation in Construction	12	Article
392	Zhang S.; Liu Y.; Bate B.; Peng D.-L.; Li C.; Zhan L.-T.	Quantitative human risk analysis of 2015 Shenzhen dump failure considering influence of urbanization	2021	Journal of Mountain Science	5	Article
393	Kliem D.; Scheidegger A.; Kopainsky B.	Closing the mineral construction material cycle – An endogenous perspective on barriers in transition	2021	Resources, Conservation and Recycling	7	Article
394	Ku Y.; Yang J.; Fang H.; Xiao W.; Zhuang J.	Deep learning of grasping detection for a robot used in sorting construction and demolition waste	2021	Journal of Material Cycles and Waste Management	36	Article
395	Bi J.; Sai Q.; Wang F.; Chen Y.	Identification of Working Trucks and Critical Path Nodes for Construction Waste Transportation Based on Electric Waybills: A Case Study of Shenzhen, China	2022	Journal of Advanced Transportation	0	Article
396	Rahimzadeh Oskooei P.; Mohammadinia A.; Arulrajah A.; Horpibulsuk S.; Emam S.	Crushing behavior of recycled waste materials: Experimental analysis and DEM simulation	2021	Construction and Building Materials	1	Article
397	Cal B.F.-D.; Garrido-Marijuan A.; Eguiarte O.; Arregi B.; Romero-Amorrortu A.; Mezzasalma G.; Ferrarini G.; Bernardi A.	Energy performance assessment of innovative building solutions coming from construction and demolition waste materials	2021	Materials	8	Article
398	Costa M.M.; Barreto Neto J.F.; Varela Alberte E.P.; Carneiro A.P.	Blockchain-based framework for improving waste management and circular economy in construction	2022	IOP Conference Series: Earth and Environmental Science	0	Conference paper
399	Nagalli A.	Estimation of construction waste generation using machine learning	2021	Proceedings of Institution of Civil Engineers: Waste and Resource Management	8	Article
400	Coskuner G.; Jassim M.S.; Zontul M.; Karateke S.	Application of artificial intelligence neural network modeling to predict the generation of domestic, commercial and construction wastes	2021	Waste Management and Research	41	Article
401	Muzaffar S.; Khan K.I.A.; Tahir M.B.; Bukhari H.	Analysing the Causes of Design Generated Waste through System Dynamics	2022	KSCE Journal of Civil Engineering	1	Article
402	Netsch N.; Simons M.; Feil A.; Leibold H.; Richter F.; Slama J.; Yogish S.P.; Greiff K.; Stapf D.	Recycling of polystyrene-based external thermal insulation composite systems – Application of combined mechanical and chemical recycling	2022	Waste Management	6	Article
403	Wang Q.; Zhou M.	Development of hybrid SVM-FA, DT-FA and MLR-FA models to predict the flexural strength (FS) of recycled concrete	2023	Frontiers in Materials	1	Article
404	Li G.; Liu J.; Giordano A.	Robust optimization of construction waste disposal facility location considering uncertain factors	2022	Journal of Cleaner Production	12	Article
405	Kwok T.W.; Chang S.; Li H.	Understanding client satisfaction of prefabricated curtain wall in Hong Kong using XGBoost and Pearson correlation	2023	Engineering, Construction and Architectural Management	0	Article

406	Quéheille E.; Ventura A.; Saiyouri N.; Taillandier F.	A Life Cycle Assessment model of End-of-life scenarios for building deconstruction and waste management	2022	Journal of Cleaner Production	11	Article
407	Wang H.; Yi W.	Optimization Models for Reducing Off-Cuts of Raw Materials in Construction Site	2022	Mathematics	1	Article
408	Perrucci D.V.; Aktaş C.B.; Sorentino J.; Akanbi H.; Curabba J.	A review of international eco-industrial parks for implementation success in the United States	2022	City and Environment Interactions	8	Review
409	Slánský B.; Zelinka P.; Cermák J.	UNIQUE AND INNOVATIVE TECHNOLOGY FOR SUSTAINABLE AND EFFICIENT STRUCTURAL CONCRETE MADE OF 100% RECYCLED AGGREGATE FROM CDW	2022	Acta Polytechnica CTU Proceedings	0	Conference paper
410	Yu S.; Awasthi A.K.; Ma W.; Wen M.; Di Sarno L.; Wen C.; Hao J.L.	In support of circular economy to evaluate the effects of policies of construction and demolition waste management in three key cities in Yangtze River Delta	2022	Sustainable Chemistry and Pharmacy	27	Article
411	Peng Z.; Lu W.; Webster C.	Understanding the effects of a construction waste cap-and-trade scheme: An agent-based modeling study in Hong Kong	2022	Journal of Cleaner Production	5	Article
412	Cheng B.; Huang J.; Li J.; Chen S.; Chen H.	Improving Contractors' Participation of Resource Utilization in Construction and Demolition Waste through Government Incentives and Punishments	2022	Environmental Management	30	Article
413	Martinez P.; Mohsen O.; Al-Hussein M.; Ahmad R.	Vision-based automated waste audits: a use case from the window manufacturing industry	2022	International Journal of Advanced Manufacturing Technology	4	Article
414	Bodenko E.M.; Slesarev M.Y.; Shershneva M.V.; Perepechenov A.M.	Reducing the Negative Impact of Harmful Factors on the Environment in the Process of Transporting Waste from Demolition of Buildings and Structures	2022	IOP Conference Series: Earth and Environmental Science	1	Conference paper
415	Shilavantar S.S.; Suthar S.; Chaitanya B.; Chiranth A.; Ravindra R.	Sustainability by Reverse Joints in Steel Structures (Demountable Modular Shear Connection)	2023	Lecture Notes in Civil Engineering	0	Conference paper
416	Tan R.; Qing X.; Yang J.; Zhang J.; Li D.	Analysis on Recycling Channel Selection of Construction and Demolition Waste in China from the Perspective of Supply Chain	2022	International Journal of Environmental Research and Public Health	6	Article
417	Nishaant H.; Sudhakumar J.	Construction Resource Wastage Optimization and Green Ideologies – An Insight on Literature	2023	Lecture Notes in Civil Engineering	0	Conference paper
418	Oluleye B.I.; Chan D.W.M.; Saka A.B.; Olawumi T.O.	Circular economy research on building construction and demolition waste: A review of current trends and future research directions	2022	Journal of Cleaner Production	52	Review
419	Cha G.-W.; Choi S.-H.; Hong W.-H.; Park C.-W.	Development of Machine Learning Model for Prediction of Demolition Waste Generation Rate of Buildings in Redevelopment Areas	2023	International Journal of Environmental Research and Public Health	3	Article
420	Leite G.S.; Vigoderis R.B.; da Cruz Gonzaga N.; de Lucena Rocha L.; da Silva J.M.; Pachêco C.R.X.; dos Santos E.R.C.; de Lima Oliveira T.	Management of Construction Waste in an Urban Development Using BIM Technology; [GESTÃO DE RESÍDUOS DA CONSTRUÇÃO CIVIL EM UM EMPREENDIMENTO URBANO USANDO A TECNOLOGIA BIM]	2023	Revista de Gestao Social e Ambiental	7	Article
421	Zhou Q.; Liu H.; Qiu Y.; Zheng W.	Object Detection for Construction Waste Based on an Improved YOLOv5 Model	2023	Sustainability (Switzerland)	8	Article

422	Kang K.; Besklubova S.; Dai Y.; Zhong R.Y.	Building demolition waste management through smart BIM: A case study in Hong Kong	2022	Waste Management	26	Article
423	Chen Q.; Liao W.	Collaborative Routing Optimization Model for Reverse Logistics of Construction and Demolition Waste from Sustainable Perspective	2022	International Journal of Environmental Research and Public Health	3	Article
424	Zhang X.; Ahmed R.R.	A queuing system for inert construction waste management on a reverse logistics network	2022	Automation in Construction	9	Article
425	Wu P.-Y.; Sandels C.; Mjörnell K.; Mangold M.; Johansson T.	Predicting the presence of hazardous materials in buildings using machine learning	2022	Building and Environment	18	Article
426	Pena E.G.; Silva D.L.; Marcos C.J.L.; Villaverde B.S.; Gonzales D.R.; Adina E.M.	A Synthesis of Structural Equation Model-Analytical Hierarchy Process, Nonlinear Autoregressive and Backpropagation Neural Network-Sensitivity Analysis for Construction and Demolition Waste Assessment in the Philippines	2023	2023 7th International Conference on Management Engineering, Software Engineering and Service Sciences, ICMSS 2023	0	Conference paper
427	Ren J.; Zhang L.; Zhao H.; Zhao Z.; Wang S.	Determination of the fatigue equation for the cement-stabilized cold recycled mixtures with road construction waste materials based on data-driven	2022	International Journal of Fatigue	23	Article
428	Nemmour A.; Inayat A.; Janajreh I.; Ghenai C.	New performance correlations of municipal solid waste gasification for sustainable syngas fuel production	2022	Biomass Conversion and Biorefinery	6	Article
429	Dong D.; Tukker A.; Steubing B.; van Oers L.; Rechberger H.; Alonso Aguilar-Hernandez G.; Li H.; Van der Voet E.	Assessing China's potential for reducing primary copper demand and associated environmental impacts in the context of energy transition and “Zero waste” policies	2022	Waste Management	8	Article
430	Yang J.; Wang G.; Sun Y.; Bai L.; Yang B.	Deep Pixel-Wise Textures for Construction Waste Classification	2023	IEEE Transactions on Automation Science and Engineering	0	Article
431		12th International Conference on Operations Research and Enterprise Systems, ICORES 2023	2023	International Conference on Operations Research and Enterprise Systems	0	Conference review
432	Chen X.; Huang H.; Liu Y.; Li J.; Liu M.	Robot for automatic waste sorting on construction sites	2022	Automation in Construction	28	Article
433	Diao J.; Liu Y.	Towards Sustainable Construction Waste Management: A Four-Party Evolutionary Game Analysis	2023	11th International Symposium on Project Management, ISPM 2023	0	Conference paper
434	Lu W.; Yuan L.; Lee W.M.W.	Understanding loading patterns of construction waste hauling trucks: triangulation between big quantitative and informative qualitative data	2022	Environmental Science and Pollution Research	1	Article
435	Neupane R.P.; Imjai T.; Makul N.; Garcia R.; Kim B.; Chaudhary S.	Use of recycled aggregate concrete in structural members: a review focused on Southeast Asia	2023	Journal of Asian Architecture and Building Engineering	0	Article
436	Attri G.K.; Gupta R.C.; Shrivastava S.	Comparative Environmental Impacts of Recycled Concrete Aggregate and Manufactured Sand Production	2022	Process Integration and Optimization for Sustainability	9	Article
437	Quiñones R.; Llatas C.; Montes M.V.; Cortés I.	Quantification of Construction Waste in Early Design Stages Using Bim-Based Tool	2022	Recycling	10	Article
438	Cha G.-W.; Moon H.J.; Kim Y.-C.	A hybrid machine-learning model for predicting the waste generation rate of building demolition projects	2022	Journal of Cleaner Production	15	Article
439	Shivashankar M.; Pandey M.; Shukla A.K.	Numerical Investigation on the Evaluation of the Sediment Retention Efficiency of Invert Traps in an Open Rectangular Combined Sewer Channel	2023	Journal of Hazardous, Toxic, and Radioactive Waste	1	Article

440	Dong Z.; Chen J.; Lu W.	Computer vision to recognize construction waste compositions: A novel boundary-aware transformer (BAT) model	2022	Journal of Environmental Management	22	Article
441	Sandbhor S.; Apte S.; Dabir V.; Kotecha K.; Balasubramaniyan R.; Choudhury T.	AI-based carbon emission forecast and mitigation framework using recycled concrete aggregates: A sustainable approach for the construction industry	2023	AIMS Environmental Science	0	Article
442	Liu C.; Hua C.; Chen J.	Efficient supervision strategy for illegal dumping of construction and demolition waste: A networked game theory decision-making model	2022	Waste Management and Research	13	Article
443	Wu S.; Zhang N.; Luo X.; Lu W.-Z.	Multi-objective optimization in floor tile planning: Coupling BIM and parametric design	2022	Automation in Construction	11	Article
444	Kobylinska N.E.; Raghu D.; Gordon M.; Hunhevicz J.; De Wolf C.	PREDICTING RECOVERABLE MATERIAL STOCK IN BUILDINGS: USING MACHINE LEARNING WITH PRE-DEMOLITION AUDIT DATA AS A CASE STUDY	2023	Proceedings of the European Conference on Computing in Construction	0	Conference paper
445	Nowogońska B.; Nowogoński I.	Method of Planning Repairs of the Installation including Building Waste	2022	Applied Sciences (Switzerland)	4	Article
446	Li J.; Wu Q.; Wang C.C.; Du H.; Sun J.	Triggering factors of construction waste reduction behavior: Evidence from contractors in Wuhan, China	2022	Journal of Cleaner Production	11	Article
447	Menegatti L.C.; Castrillon Fernandez L.I.; Caldas L.R.; Pepe M.; Pittau F.; Zani G.; Rampini M.C.; Michels J.; Toledo Filho R.D.; Martinelli E.	Environmental Performance of Deconstructable Concrete Beams Made with Recycled Aggregates	2022	Sustainability (Switzerland)	4	Article
448	Baghban H.; Arulrajah A.; Narsilio G.A.; Horpibulsuk S.	Assessing the performance of geothermal pavement constructed using demolition wastes by experimental and CFD simulation techniques	2022	Geomechanics for Energy and the Environment	4	Article
449	Nodehi M.; Omer L.; Asiabanpour B.; Ozbakkaloglu T.	A novel lightweight mechanism for 3D printing of cementitious materials	2023	Progress in Additive Manufacturing	0	Article
450	Gholami Rostam M.; Abbasi A.	Integrating construction and demolition waste impact categories into building energy optimization through a conceptual sustainability-oriented model	2022	Journal of Cleaner Production	3	Article
451	Bi W.; Lu W.; Zhao Z.; Webster C.J.	Combinatorial optimization of construction waste collection and transportation: A case study of Hong Kong	2022	Resources, Conservation and Recycling	18	Article
452	Qiao L.; Tang Y.; Li Y.; Liu M.; Yuan X.; Wang Q.; Ma Q.	Life cycle assessment of three typical recycled products from construction and demolition waste	2022	Journal of Cleaner Production	13	Article
453	Abderebbi S.; Cherif-Khettaf W.R.	Optimization of Direct Transportation Flows for the Removal of Construction Waste Bins with both Resource and Task Availability Interval Constraints	2023	International Conference on Operations Research and Enterprise Systems	0	Conference paper
454	Wang J.; Song Y.; Wang W.; Wang S.; Guo F.; Lu J.	Marine Construction Waste Recycling Mechanism Considering Public Participation and Carbon Trading: A Study on Dynamic Modeling and Simulation Based on Sustainability Policy	2022	Sustainability (Switzerland)	2	Article
455	Kaliyavaradhan S.K.; Li L.; Ling T.-C.	Response surface methodology for the optimization of CO2 uptake using waste concrete powder	2022	Construction and Building Materials	17	Article
456	Tsui T.P.Y.	Spatial approaches to a circular economy: Determining locations and scales of closing material loops using geographic data	2023	A+BE Architecture and the Built Environment		Article

457	Muralha A.; Amaral S.; Aido N.; Jónatas R.; Mendes S.; Melo J.F.; Viseu T.	Use of Automated Control Machining Tools for Design, Construction, and Testing with Hydraulic Physical Models	2023	RILEM Bookseries	0	Book chapter
458	Li J.; Fang H.; Fan L.; Yang J.; Ji T.; Chen Q.	RGB-D fusion models for construction and demolition waste detection	2022	Waste Management	12	Article
459	Feng Y.	Game study on the evolution of subsidy strategies for on-site construction waste recycling management	2023	Engineering Letters	0	Article
460	Sunwoo H.; Choi W.; Na S.; Kim C.; Heo S.	Comparison of the Performance of Artificial Intelligence Models Depending on the Labelled Image by Different User Levels	2022	Applied Sciences (Switzerland)	2	Article
461	Lu W.; Chen J.; Xue F.	Using computer vision to recognize composition of construction waste mixtures: A semantic segmentation approach	2022	Resources, Conservation and Recycling	43	Article
462	Imran R.; Al Rashid A.; Khan S.A.; Ilcan H.; Sahin O.; Sahmaran M.; Koç M.	Buildability analysis on squared profile structure in 3D concrete printing (3DCP)	2023	European Journal of Materials	1	Article
463	Cha G.-W.; Hong W.-H.; Kim Y.-C.	Performance Improvement of Machine Learning Model Using Autoencoder to Predict Demolition Waste Generation Rate	2023	Sustainability (Switzerland)	2	Article
464	Mostert C.; Weber C.; Bringezu S.	Modelling and Simulation of Building Material Flows: Assessing the Potential for Concrete Recycling in the German Construction Sector	2022	Recycling	2	Article
465	Marica E.; Popa M.	BIBLIOMETRIC ANALYSIS OF LITERATURE ON THE RECOVERY OF CONSTRUCTION WASTE	2023	Journal of Environmental Protection and Ecology	0	Article
466	Sun Y.; Gu Z.	Implementation of Construction Waste Recycling under Construction Sustainability Incentives: A Multi-Agent Stochastic Evolutionary Game Approach	2022	Sustainability (Switzerland)	9	Article
467	Wang Wai Ng C.; Guo H.; Xue Q.; Lu B.; Feng Y.; Zhang P.	Physical and numerical modelling of a vegetated three-layer landfill cover system using recycled aggregates without a geomembrane	2023	Geomechanics for Energy and the Environment	1	Article
468	Khodaei H.; Olson C.; Patino D.; Rico J.; Jin Q.; Boateng A.	Multi-objective utilization of wood waste recycled from construction and demolition (C&D): Products and characterization	2022	Waste Management	5	Article
469	Ghorbani B.; Yaghoubi E.; Wasantha P.L.P.; van Staden R.; Guerrieri M.; Fragomeni S.	Machine learning-based prediction of resilient modulus for blends of tire-derived aggregates and demolition wastes	2023	Road Materials and Pavement Design	1	Article
470	Ramnarayan; Malla P.	A Machine Learning-Enhanced Method for Quantifying and Recycling Construction and Demolition Waste in India	2023	2023 IEEE International Conference on Integrated Circuits and Communication Systems, ICICACS 2023	0	Conference paper
471	Joseph H.S.; Pachiappan T.; Avudaiappan S.; Guindos P.	Prediction of the mechanical properties of concrete incorporating simultaneous utilization of fine and coarse recycled aggregate	2023	Revista de la Construccion	0	Article
472	Ding Z.; Wen X.; Cao X.; Yuan H.	A GIS and hybrid simulation aided environmental impact assessment of city-scale demolition waste management	2022	Sustainable Cities and Society	10	Article
473	Oluleye B.I.; Chan D.W.M.; Antwi-Afari P.	Adopting Artificial Intelligence for enhancing the implementation of systemic circularity in the construction industry: A critical review	2023	Sustainable Production and Consumption	16	Review

474	Liu F.; Jiang H.; Huang B.	SVM based sub-classification study of engineering waste glass	2023	Proceedings of SPIE - The International Society for Optical Engineering	0	Conference paper
475	Yuan W.-B.; Mao L.; Li L.-Y.	A two-step approach for calculating chloride diffusion coefficient in concrete with both natural and recycled concrete aggregates	2023	Science of the Total Environment	9	Article
476	Jahangiri A.; Asadi-Gangraj E.; Nemati A.	Designing a reverse logistics network to manage construction and demolition wastes: A robust bi-level approach	2022	Journal of Cleaner Production	5	Article
477	Alqarni A.S.; Abbas H.; Al-shwikh K.M.; Al-salloum Y.A.	Influence of Treatment Methods of Recycled Concrete Aggregate on Behavior of High Strength Concrete	2022	Buildings	9	Article
478	Liu Z.; Wu T.; Wang F.; Osmani M.; Demian P.	Blockchain Enhanced Construction Waste Information Management: A Conceptual Framework	2022	Sustainability (Switzerland)	6	Article
479	Chen Y.; Yang S.	Prediction model for recycled coarse aggregate concrete compressive strength based on improved grey wolf algorithm optimized extreme gradient boosting	2023	2023 10th International Forum on Electrical Engineering and Automation, IFEEA 2023	0	Conference paper
480	Jayarathna H.S.N.M.; Perera B.A.K.S.; Atapattu A.M.D.S.; Rodrigo M.N.N.	SYNERGY BETWEEN BLOCKCHAIN AND CIRCULAR ECONOMY IN IMPROVING CONSTRUCTION WASTE MANAGEMENT: A LITERATURE REVIEW	2023	World Construction Symposium	0	Conference paper
481	Maiurova A.; Kurniawan T.A.; Kustikova M.; Bykovskaia E.; Othman M.H.D.; Singh D.; Goh H.H.	Promoting digital transformation in waste collection service and waste recycling in Moscow (Russia): Applying a circular economy paradigm to mitigate climate change impacts on the environment	2022	Journal of Cleaner Production	64	Article
482	Desai P.; Sandbhor S.; Kaushik A.	AI and BIM-based Construction defects, rework, and waste optimization	2023	2023 International Conference on Emerging Smart Computing and Informatics, ESCI 2023	1	Conference paper
483	Zbíral T.; Nežerka V.	Computer Vision-Based Algorithms for Recognition of Construction and Demolition Waste Materials	2023	Advances in Science and Technology	0	Conference paper
484	Zheng H.; Li X.; Zhu X.; Huang Y.; Liu Z.; Liu Y.; Liu J.; Li X.; Li Y.; Li C.	Impact of Recycler Information Sharing on Supply Chain Performance of Construction and Demolition Waste Resource Utilization	2022	International Journal of Environmental Research and Public Health	25	Article
485	Tsui T.; Duarte F.; Venverloo T.; Benson T.	Identifying locations and scales of tomorrow	2023	A+BE Architecture and the Built Environment		Book chapter
486		2023 7th International Conference on Management Engineering, Software Engineering and Service Sciences, ICMSS 2023	2023	2023 7th International Conference on Management Engineering, Software Engineering and Service Sciences, ICMSS 2023	0	Conference review
487		ISM 2022 - 4th International Conference on Industry 4.0 and Smart Manufacturing	2023	Procedia Computer Science	0	Conference review
488	Hua C.; Liu C.; Chen J.; Yang C.; Chen L.	Promoting construction and demolition waste recycling by using incentive policies in China	2022	Environmental Science and Pollution Research	14	Article
489	Suleman T.; Ezema I.; Aderonmu P.	Benefits of Circular Design Adoption in the Nigerian Building Industry	2023	Eurasia Proceedings of Science, Technology, Engineering and Mathematics	1	Conference paper
490	Elshehawy S.K.; Elgendi E.O.; Shehata A.S.	Construction waste management: For biodiesel production process	2022	Energy Reports	1	Article
491	Pepe M.; Michels J.; Zani G.;	Deconstructable Concrete Structures Made of Recycled Aggregates from Construction & Demolition Waste: The Experience of the DeConStRAtion Project	2023	RILEM Bookseries	0	Book chapter

	Rampini M.C.; Martinelli E.					
492	Abd Ali Z.T.; Khadim H.J.; Ibrahim M.A.	Simulation of the remediation of groundwater contaminated with ciprofloxacin using grafted concrete demolition wastes by ATPES as reactive material: Batch and modeling study	2022	Egyptian Journal of Chemistry	7	Article
493	Podlasek A.; Vaverková M.D.; Koda E.; Paleologos E.K.; Adamcová D.; Bilgin A.; Palm E.R.; Nissim W.G.	Temporal variations in groundwater chemical composition of landfill areas in the vicinity of agricultural lands: a case study of the Zdounky and Petrůvky landfills in the Czech Republic	2022	Desalination and Water Treatment	0	Article
494	Shao Z.; Li M.; Yu D.; Han C.; Meng L.	Collaborative Evolution Mechanism and Simulation of Construction Waste Recycling Stakeholders Based on Social Network	2022	Buildings	3	Article
495	Wang H.; Yi W.; Liu Y.	Optimal Route Design for Construction Waste Transportation Systems: Mathematical Models and Solution Algorithms	2022	Mathematics	1	Article
496	Mendoza A.; Guaje J.; Enciso C.; Beltrán G.	Mechanical behavior assessment of tire-reinforced recycled aggregates for low traffic road construction	2022	Transportation Geotechnics	4	Article
497	Yang S.; Qiu J.; Huang H.	Research on the Governance Relationship among Stakeholders of Construction Waste Recycling Based on ANP-SNA	2022	International Journal of Environmental Research and Public Health	0	Article
498	Santos M.L.; Silva C.M.; Ferreira F.; Matos J.S.	Hydrological Analysis of Green Roofs Performance under a Mediterranean Climate: A Case Study in Lisbon, Portugal	2023	Sustainability (Switzerland)	4	Article
499	Ashrafian A.; Hamzehkolaei N.S.; Dwijendra N.K.A.; Yazdani M.	An Evolutionary Neuro-Fuzzy-Based Approach to Estimate the Compressive Strength of Eco-Friendly Concrete Containing Recycled Construction Wastes	2022	Buildings	11	Article
500		12th Conference Nano and Macro Mechanics, NMM 2021	2022	Acta Polytechnica CTU Proceedings	0	Conference review
501	Ravichandran P.; Rajendran N.; Al-Ghanim K.A.; Govindarajan M.; Gurunathan B.	Investigations on evaluation of marine macroalgae Dictyota bartayresiana oil for industrial scale production of biodiesel through technoeconomic analysis	2023	Bioresource Technology	7	Article
502	Wang Z.; Lu X.; Yu B.; Yang Y.; Wang L.; Lei K.	Ascertaining priority control pollution sources and target pollutants in toxic metal risk management of a medium-sized industrial city	2023	Science of the Total Environment	5	Article
503	Ai X.; Pei Z.; Xu M.; Fan L.; Tu L.; Yang J.; Feng D.; Yi J.	Micromechanical behavior of cement-treated base materials incorporating recycled crushed aggregates arising from C&D waste powder based on DEM	2023	Construction and Building Materials	0	Article
504	Wang T.; Liu X.; Liu L.; Xiong W.; Li Z.	Research on the Reinforcement Effect and Bearing Characteristics of High-Pressure Jet-Grouting Piles on Covered Road Composite Ground in Landfill Sites	2024	Buildings		Article
505	almahameed B.; Bisharah M.	Applying Machine Learning and Particle Swarm Optimization for predictive modeling and cost optimization in construction project management	2024	Asian Journal of Civil Engineering	2	Article
506	Wang L.; Lv Y.; Huang S.; Liu Y.; Li X.	The Evolution of Research on C&D Waste and Sustainable Development of Resources: A Bibliometric Study	2023	Sustainability (Switzerland)	2	Article
507	Deng N.; Wang J.; Sun J.; Cao N.	Life cycle assessment and optimization scenario of solid wood composite doors: A case study in the east of China	2023	Science of the Total Environment	6	Article
508	Liu J.; Li J.	Economic benefit analysis of the carbon potential of construction waste resource management based on a simulation of carbon trading policy	2023	Environmental Science and Pollution Research	1	Article

509	Wong C.L.Y.; Zawadzki W.	Emissions rate measurement with flow modelling to optimize landfill gas collection from horizontal collectors	2023	Waste Management	2	Article
510	Yang J.; Gao X.; Xu J.; Zhu H.; Hasan M.M.; Shao J.; Haruna S.I.	A multi-scale investigation on recycled ceramic and rubber composite cement-based materials: Acoustic emission, NMR, molecular dynamics simulation	2024	Construction and Building Materials	0	Article
511	Sirimewan D.; Harandi M.; Peiris H.; Arashpour M.	Semi-supervised segmentation for construction and demolition waste recognition in-the-wild: Adversarial dual-view networks	2024	Resources, Conservation and Recycling	0	Article
512	Barakat B.; Srour I.	A multi-stakeholder digital platform for regional construction and demolition waste management	2024	Waste Management and Research	1	Article
513	Ershadi A.; Finkel M.; Susset B.; Grathwohl P.	Applicability of machine learning models for the assessment of long-term pollutant leaching from solid waste materials	2023	Waste Management	0	Article
514	Venes H.; Galavote T.; Brumatti D.; Chaves G.D.L.D.; Siman R.R.	AN ECONOMIC ASSESSMENT MODEL OF CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT BASED ON SYSTEM DYNAMICS: A CASE STUDY IN THE CITY OF SERRA – ES	2023	Environmental Engineering and Management Journal	1	Article
515	Kamali M.; Hewage K.; Rana A.; Alam M.S.; Sadiq R.	Environmental sustainability assessment of single-family modular homes using performance benchmarks of conventional homes: case studies in British Columbia, Canada	2023	Clean Technologies and Environmental Policy	2	Article
516	He Q.; He Y.; Zhang Z.; Ou G.-Z.; Zhu K.-F.; Lou W.; Zhang K.-N.; Chen Y.-G.; Ye W.-M.	Spatiotemporal distribution and pollution control of pollutants in a Cr(VI)-contaminated site located in Southern China	2023	Chemosphere	2	Article
517	Zheng M.; Lu X.; Chen L.; Li L.; Yu F.; Zhang F.; Guo S.	Impact analysis of a construction and demolition waste dumping quota trading scheme in uncertain, cooperative, and non-cooperative scenarios	2024	Journal of Cleaner Production	0	Article
518	Komkova A.; Habert G.	Optimal supply chain networks for waste materials used in alkali-activated concrete fostering circular economy	2023	Resources, Conservation and Recycling	4	Article
519	Zhang H.; Zhu Y.; Wang S.; Zhao S.; Nie Y.; Ji C.; Wang Q.; Liao X.; Cao H.; Liu X.	Spatial-vertical variations of energetic compounds and microbial community response in soils from an ammunition demolition site in China	2023	Science of the Total Environment	1	Article
520	Liu G.; Luo X.; Zhang Y.; Li H.	Predicting fatigue damage growth in cement-treated base layer built with construction and demolition waste	2023	Construction and Building Materials	1	Article
521	Han D.; Kalantari M.; Rajabifard A.	Identifying and prioritizing sustainability indicators for China's assessing demolition waste management using modified Delphi–analytic hierarchy process method	2023	Waste Management and Research	2	Article
522	Nezhaddehghan M.; Ansari R.; Banihashemi S.A.	An optimized hybrid decision support system for waste management in construction projects based on gray data: A case study in high-rise buildings	2023	Journal of Building Engineering	0	Article
523	Yao P.; Feng Y.; Xie Q.; Zhang Y.; Zhang P.	Optimizing site selection for construction demolition waste treatment plants considering demand and supply uncertainty: a case study in Chongqing, China	2024	Engineering Optimization	0	Article
524	Li W.; Cheng W.; Zheng T.; Men Y.; Hu F.; Liu J.; Pang Z.; Liu J.	Construction waste ditch: a novel rural household sewage collection and treatment facility	2023	Environmental science and pollution research international	0	Article
525	Liu J.; Li Y.; Wang Z.	The potential for carbon reduction in construction waste sorting: A dynamic simulation	2023	Energy	10	Article
526	Zerig T.; Aidoud A.; Belachia M.;	Combined sand eco-mortar reinforced with polyethylene Terephthalate: Behavior and optimization using RSM method	2023	Construction and Building Materials	0	Article

	Djedid T.; Abbas M.					
527	Peng Z.; Lu W.; Webster C.	Identifying the impacts of trading construction waste across jurisdictions: a simulation of the Greater Bay Area, China, using non-linear optimization	2023	Environmental Science and Pollution Research	1	Article
528	Tatari A.	Simulating Cost Risks for Prefabricated Construction in Developing Countries Using Bayesian Networks	2023	Journal of Construction Engineering and Management	2	Article
529	Shooshtarian S.; Gurmu A.T.; Sadick A.-M.	Application of natural language processing in residential building defects analysis: Australian stakeholders' perceptions, causes and types	2023	Engineering Applications of Artificial Intelligence	1	Article
530	Kazmi R.; Chakraborty M.	Identification of parameters and indicators for implementing circularity in the construction industry	2023	Journal of Engineering and Applied Science	0	Review
531	Li M.; Han C.; Shao Z.; Meng L.	Exploring the evolutionary mechanism of the cross-regional cooperation of construction waste recycling enterprises: A perspective of complex network evolutionary game	2024	Journal of Cleaner Production	0	Article
532	Gulghane A.; Sharma R.L.; Borkar P.	Performance analysis of machine learning-based prediction models for residential building construction waste	2023	Asian Journal of Civil Engineering	6	Article
533	Yong Q.; Wu H.; Wang J.; Chen R.; Yu B.; Zuo J.; Du L.	Automatic identification of illegal construction and demolition waste landfills: A computer vision approach	2023	Waste Management	0	Article
534	Ghorbani B.; Arulrajah A.; Narsilio G.A.; Horpibulsuk S.; Buritatum A.	Geothermal Pavements: Experimental Testing, Prototype Testing, and Numerical Analysis of Recycled Demolition Wastes	2023	Sustainability (Switzerland)	1	Article
535	Tang S.; Leng W.; Liu G.; Li Y.; Xue Z.; Shi L.	Development of a framework to forecast the urban residential building CO2 emission trend and reduction potential to 2060: A case study of Jiangxi province, China	2024	Journal of Environmental Management	0	Article
536	Teixeira J.; Schaefer C.O.; Rangel B.; Maia L.; Alves J.L.	A road map to find in 3D printing a new design plasticity for construction – The state of art	2023	Frontiers of Architectural Research	6	Review
537	Liu J.; Teng Y.	Evolution game analysis on behavioral strategies of multiple stakeholders in construction waste resource industry chain	2023	Environmental Science and Pollution Research	12	Article
538	Demetriou D.; Mavromatidis P.; Robert P.M.; Papadopoulos H.; Petrou M.F.; Nicolaides D.	Real-time construction demolition waste detection using state-of-the-art deep learning methods; single – Stage vs two-stage detectors	2023	Waste Management	11	Article
539	Kosuri M.; Singh S.; Bhardwaj B.B.	Optimization of Slurry Impregnation Technique for Upcycling Carbonated Recycled Concrete Aggregates for Paving Concrete Applications	2023	Journal of Materials in Civil Engineering	1	Article
540	Sousa V.; Bogas J.A.; Real S.; Meireles I.; Carriço A.	Recycled cement production energy consumption optimization	2023	Sustainable Chemistry and Pharmacy	9	Article
541	Elshaboury N.; AlMetwaly W.M.	Modeling construction and demolition waste quantities in Tanta City, Egypt: a synergistic approach of remote sensing, geographic information system, and hybrid fuzzy neural networks	2023	Environmental Science and Pollution Research	0	Article
542	Cakiroglu C.; Bekdaş G.	Predictive Modeling of Recycled Aggregate Concrete Beam Shear Strength Using Explainable Ensemble Learning Methods	2023	Sustainability (Switzerland)	2	Article

543	Ismail Z.-A.B.	A critical study of the existing issues in circular economy practices during movement control order: can BIM fill the gap?	2023	Engineering, Construction and Architectural Management	3	Review
544	Dodampegama S.; Hou L.; Asadi E.; Zhang G.; Setunge S.	Revolutionizing construction and demolition waste sorting: Insights from artificial intelligence and robotic applications	2024	Resources, Conservation and Recycling	0	Review
545	Cerlanek A.; Liu Y.; Robey N.; Timshina A.S.; Bowden J.A.; Townsend T.G.	Assessing construction and demolition wood-derived biochar for in-situ per- and polyfluoroalkyl substance (PFAS) removal from landfill leachate	2024	Waste Management	0	Article
546	Fleury M.P.; Kamakura G.K.; Pitombo C.S.; Cunha A.L.B.N.; Ferreira F.B.; Lins da Silva J.	Assessing and Predicting Geogrid Reduction Factors after Damage Induced by Dropping Recycled Aggregates	2023	Sustainability (Switzerland)	0	Article
547	Talla A.; McIlwaine S.	Industry 4.0 and the circular economy: using design-stage digital technology to reduce construction waste	2024	Smart and Sustainable Built Environment	12	Article
548	Yuan L.; Lu W.; Xue F.; Li M.	Building feature-based machine learning regression to quantify urban material stocks: A Hong Kong study	2023	Journal of Industrial Ecology	4	Article
549	Mahpour A.	Building Maintenance Cost Estimation and Circular Economy: The Role of Machine-Learning	2023	Sustainable Materials and Technologies	1	Article
550	Mollaei A.; Bachmann C.; Haas C.	Assessing the impact of policy tools on building material recovery	2023	Resources, Conservation and Recycling	1	Article
551	Huang J.; Li W.; Ma Y.; Jin M.; Li Z.; Manzano H.; Liu J.	Multiscale deterioration of recycled aggregate gel network via solar irradiation: Reaction molecular dynamics and experiments	2023	Journal of Cleaner Production	0	Article
552	Jiang C.; Zhang J.; Peng X.; Li J.; Yang X.	Simulation of pollutant deep transport characteristics in a partially infiltrated bioretention system	2024	Journal of Water Process Engineering	0	Article
553	Ghailani H.; Zaidan A.A.; Qahtan S.; Alsattar H.A.; Al-Emran M.; Deveci M.; Delen D.	Developing sustainable management strategies in construction and demolition wastes using a q-rung orthopair probabilistic hesitant fuzzy set-based decision modelling approach	2023	Applied Soft Computing	3	Article
554	Khan S.A.; İlcan H.; Aminipour E.; Şahin O.; Al Rashid A.; Şahmaran M.; Koç M.	Buildability analysis on effect of structural design in 3D concrete printing (3DCP): An experimental and numerical study	2023	Case Studies in Construction Materials	6	Article
555	Ding L.; Zhang J.; Du Q.; Zhou C.	Leaching characteristic and migration simulation of hazardous elements in recycled aggregates as subgrade scenario	2023	Journal of Cleaner Production	0	Article
556	Abulebdah A.; Musharavati F.; Fares E.	Integrative approach for optimizing construction and demolition waste management practices in developing countries	2024	Sustainable Environment	0	Article
557	Silvestre G.R.; Fleury M.P.; Lins da Silva J.; Santos E.C.G.	Use of Recycled Construction and Demolition Waste (RCDW) in Geosynthetic-Reinforced Roadways: Influence of Saturation Condition on Geogrid Mechanical Properties	2023	Sustainability (Switzerland)	0	Article
558	Barakat B.; Srour I.	Consideration of hotspots in the selection of supervision schemes to reduce illegal dumping of construction and demolition waste	2024	Waste Management and Research	0	Article
559	Fleury M.P.; Kamakura G.K.;	Prediction of non-woven geotextiles' reduction factors for damage caused by the drop of backfill materials	2023	Geotextiles and Geomembranes	2	Article

	Pitombo C.S.; Cunha A.L.B.N.; Lins da Silva J.					
560	Shen L.; Liu Y.; Ge H.	Layout Optimization of Construction Waste Recycling Facilities for Development of New Urban Areas from Centralized and Decentralized Processing Collaboration Perspective	2023	KSCE Journal of Civil Engineering	0	Article
561	Kronenwett F.; Maier G.; Leiss N.; Gruna R.; Thome V.; Längle T.	Sensor-based characterization of construction and demolition waste at high occupancy densities using synthetic training data and deep learning	2024	Waste Management and Research	0	Article
562	Lu Y.; Ge Y.; Zhang G.; Abdulwahab A.; Salameh A.A.; Ali H.E.; Nguyen Le B.	Evaluation of waste management and energy saving for sustainable green building through analytic hierarchy process and artificial neural network model	2023	Chemosphere	1	Article
563	Xu Y.; Lin T.; Du P.; Wang J.	An innovative interval grey model for construction waste forecasting	2024	Applied Mathematical Modelling	1	Article
564	Lin K.; Zhao Y.; Zhou T.; Gao X.; Zhang C.; Huang B.; Shi Q.	Applying machine learning to fine classify construction and demolition waste based on deep residual network and knowledge transfer	2023	Environment, Development and Sustainability	4	Article
565	Yuan H.; Du W.; Zuo J.; Ma X.	Paving a traceable green pathway towards sustainable construction: A fuzzy ISM-DEMATEL analysis of blockchain technology adoption barriers in construction waste management	2024	Ain Shams Engineering Journal	0	Article
566	Sirimewan D.; Bazli M.; Raman S.; Mohandes S.R.; Kineber A.F.; Arashpour M.	Deep learning-based models for environmental management: Recognizing construction, renovation, and demolition waste in-the-wild	2024	Journal of Environmental Management	0	Article
567	Qi L.; Yu B.; Yu M.; Zhang M.	Simulation-Based Analysis of Micro-Damage to Recycled Concrete-Containing Brick Coarse Aggregates	2023	Buildings	0	Article
568	Hao J.L.; Ma W.	Evaluating carbon emissions of construction and demolition waste in building energy retrofit projects	2023	Energy	4	Article
569	Soultanidis V.; Voudrias E.A.	Modelling of demolition waste generation: Application to Greek residential buildings	2023	Waste Management and Research	0	Article
570	Cha G.-W.; Choi S.-H.; Hong W.-H.; Park C.-W.	Developing a Prediction Model of Demolition-Waste Generation-Rate via Principal Component Analysis	2023	International Journal of Environmental Research and Public Health	4	Article
571	Lee K.-T.; Ho K.-Y.; Chen W.-H.; Kwon E.E.; Lin K.-Y.A.; Liou S.-R.	Construction and demolition waste as a high-efficiency advanced process for organic pollutant degradation in Fenton-like reaction to approach circular economy	2023	Environmental Pollution	1	Article
572	Chen J.; Fu Y.; Lu W.; Pan Y.	Augmented reality-enabled human-robot collaboration to balance construction waste sorting efficiency and occupational safety and health	2023	Journal of Environmental Management	3	Article
573	Meng Q.; Hu L.; Li M.; Qi X.	Assessing the environmental impact of building life cycle: A carbon reduction strategy through innovative design, intelligent construction, and secondary utilization	2023	Developments in the Built Environment	0	Article
574	Han D.; Kalantari M.; Rajabifard A.	The development of an integrated BIM-based visual demolition waste management planning system for sustainability-oriented decision-making	2024	Journal of Environmental Management	0	Article
575	Saeed F.; Mostafa K.; Rauch C.; Hegazy T.	Environmental Impact and Cost Assessment for Reusing Waste during End-of-Life Activities on Building Projects	2023	Journal of Construction Engineering and Management	0	Article
576	Shao Z.; Li M.; Han C.; Meng L.	Evolutionary game model of construction enterprises and construction material manufacturers in the construction and demolition waste resource utilization	2023	Waste Management and Research	3	Article

577		6th International Congress on Recovery, Maintenance, and Rehabilitation of Buildings, CIRMARE 2023	2024	Lecture Notes in Civil Engineering	0	Conference review
578	Rosales M.; Agrela F.; Sánchez de Rojas M.I.; Cabrera M.; Rosales J.	Optimisation of hybrid eco-efficient mortars with aggregates from construction and demolition waste and olive biomass ash	2023	Construction and Building Materials	0	Article
579	Rodrigo N.; Omrany H.; Chang R.; Zuo J.	Leveraging digital technologies for circular economy in construction industry: a way forward	2024	Smart and Sustainable Built Environment	3	Review
580	Halvorsen E.O.; Andersson H.	Optimizing environmental and economic aspects of collaborative transportation and logistics related to infrastructure projects – A case study from Norway	2023	Waste Management	2	Article
581	Meshref A.N.; Elkasaby E.A.F.A.; Abdel Kader Mohamed Farid A.	Reducing construction waste in the construction life cycle of industrial projects during design phase by using system dynamics	2023	Journal of Building Engineering	3	Article
582	Eghbal N.; Anaraki B.G.; Cheraghi-Shami F.	A fast method for load detection and classification using texture image classification in intelligent transportation systems	2024	Multimedia Tools and Applications		Article
583	Boonkanit P.; Suthiluck K.	Developing a Decision-Making Support System for a Smart Construction and Demolition Waste Transition to a Circular Economy	2023	Sustainability (Switzerland)	1	Article
584	Kim D.-J.; Khant L.P.; Widjaja D.D.; Kim S.	Special Length Priority Optimization Model: Minimizing Wall Rebar Usage and Cutting Waste	2024	Buildings	0	Article
585	Gulghane A.; Sharma R.L.; Borkar P.	Quantification analysis and prediction model for residential building construction waste using machine learning technique	2023	Asian Journal of Civil Engineering	4	Article
586	Zhang M.; Liu X.; Kong L.	Evaluation of carbon and economic benefits of producing recycled aggregates from construction and demolition waste	2023	Journal of Cleaner Production	0	Article
587	Wu F.; Mei S.; Xu H.; Hsu W.-L.	Urban Construction Waste Recycling Path: Robust Optimization	2023	Buildings	0	Article
588	Kuhn D.C.; Cabral L.L.; Pereira I.C.; Gonçalves A.J.; Maciel G.M.; Haminiuk C.W.I.; Nagalli A.; Passig F.H.; Carvalho K.Q.D.	Development of aerated concrete waste/white cement composite for phosphate adsorption from aqueous solutions: Characterization and modeling studies	2023	Chemical Engineering and Processing - Process Intensification	6	Article
589	Gulghane A.; Sharma R.L.; Borkar P.	A formal evaluation of KNN and decision tree algorithms for waste generation prediction in residential projects: a comparative approach	2024	Asian Journal of Civil Engineering	0	Article
590	Cha G.-W.; Hong W.-H.; Choi S.-H.; Kim Y.-C.	Developing an Optimal Ensemble Model to Estimate Building Demolition Waste Generation Rate	2023	Sustainability (Switzerland)	0	Article
591	Xu J.; Jia R.; Wang B.; Xu A.; Zhu X.	The Optimal Emission Reduction and Recycling Strategies in Construction Material Supply Chain under Carbon Cap–Trade Mechanism	2023	Sustainability (Switzerland)	0	Article
592	Ding Z.; Sun Z.; Liu R.; Xu X.	Evaluating the effects of policies on building construction waste management: a hybrid dynamic approach	2023	Environmental Science and Pollution Research	1	Article
593	Rey-Mahía C.; Álvarez-Rabanal F.P.; Sañudo-Fontaneda L.Á.	Experimental and Numerical Study of the Thermal Properties of Dry Green Swales to Be Used as Part of Geothermal Energy Systems	2023	Applied Sciences (Switzerland)	0	Article
594	Tushar Q.; Salehi S.; Santos J.; Zhang G.; Bhuiyan	Application of recycled crushed glass in road pavements and pipeline bedding: An integrated environmental evaluation using LCA	2023	Science of the Total Environment	14	Article

	M.A.; Arashpour M.; Giustozzi F.					
595	Awolusi T.F.; Ekhasomhi A.I.; Aluko O.G.; Akinkurolere O.O.; Azab M.; Deifalla A.F.	Performance Evaluation of Fiber-reinforced Ferroconcrete using Response Surface Methodology	2023	Civil Engineering Journal (Iran)	2	Article
596	Zhang K.; Qing Y.; Umer Q.; Asmi F.	How construction and demolition waste management has addressed sustainable development goals: Exploring academic and industrial trends	2023	Journal of Environmental Management	3	Article
597	Lu W.; Long W.; Yuan L.	A machine learning regression approach for pre-renovation construction waste auditing	2023	Journal of Cleaner Production	1	Article
598	Zubair M.U.; Ali M.; Khan M.A.; Khan A.; Hassan M.U.; Tanoli W.A.	BIM- and GIS-Based Life-Cycle-Assessment Framework for Enhancing Eco Efficiency and Sustainability in the Construction Sector	2024	Buildings		Article
599	Soto-Paz J.; Hernandez A.; Mejía-Parada C.A.; Mora-Ruiz V.; Hernández W.; Luna-Guevara F.; Casallas-Ojeda M.; Parra-Orobio B.A.	A Hybrid Decision Tool for Site Selection of Construction and Demolition Waste (CDW) Facilities in Developing Countries	2023	Environmental Processes	0	Article
600	Zhang C.; Zhang Y.; Xia Y.; Fang H.; Zhao P.; Wang C.; Bin Li; Pan Y.; Zou Z.; Rabczuk T.; Zhuang X.	Risk assessment and optimization of supporting structure for a new recyclable pipe jacking shaft during excavation process	2023	Process Safety and Environmental Protection	2	Article
601	Jiang L.; Wang K.; Fang H.; Chen B.; Zhu L.; Zhang Q.; Zhang X.	Protection performance of a novel anti-collision guardrail with recycled foamed concrete under vehicle collision	2024	Engineering Structures	0	Article
602	Wu W.; Yin Y.; Hao J.L.; Ma W.; Gong G.; Yu S.	Integrated and effective management of muck waste under the platform governance mode for a circular economy	2024	Environmental Science and Pollution Research	0	Article
603	Khan S.A.; Ilcan H.; Imran R.; Aminipour E.; Şahin O.; Al Rashid A.; Şahmaran M.; Koç M.	The impact of nozzle diameter and printing speed on geopolymer-based 3D-Printed concrete structures: Numerical modeling and experimental validation	2024	Results in Engineering	0	Article
604	Neelamegam P.; Muthusubramanian B.	Evaluating embodied energy, carbon impact, and predictive precision through machine learning for pavers manufactured with treated recycled construction and demolition waste aggregate	2024	Environmental Research	0	Article
605	Prasad V.; Arashpour M.	Optimally leveraging depth features to enhance segmentation of recyclables from cluttered construction and demolition waste streams	2024	Journal of Environmental Management		Article
606	Xu C.; Zheng W.; Wang Y.; Jiang Z.	Prediction model for heating rate of section steel during the induction heating demolition process of steel reinforced Concrete：Experimental and numerical analysis	2024	Journal of Building Engineering	0	Article
607	Bisciotti A.; Jiang D.; Song Y.; Cruciani G.	Estimating attached mortar paste on the surface of recycled aggregates based on deep learning and mineralogical models	2024	Cleaner Materials	0	Article

608	Hu J.; Zhao W.; Liu P.; Huang Q.; Luo S.	Study on fracture characteristics of recycled aggregates asphalt concrete	2024	Construction and Building Materials		Article
609	Nežerka V.; Zbíral T.; Trejbal J.	Machine-learning-assisted classification of construction and demolition waste fragments using computer vision: Convolution versus extraction of selected features[Formula presented]	2024	Expert Systems with Applications	1	Article
610	Li Z.; Deng Q.; Liu P.; Bai J.; Gong Y.; Yang Q.; Ning J.	An intelligent identification and classification system of decoration waste based on deep learning model	2024	Waste Management	0	Article

Number of results : 610

PUBLICATIONS PER YEAR	
2002	2
2003	2
2004	3
2006	3
2007	6
2008	9
2009	10
2010	9
2011	15
2012	11
2013	15
2014	19
2015	18
2016	15
2017	22
2018	25
2019	45
2020	54
2021	83
2022	94
2023	114
2024	36

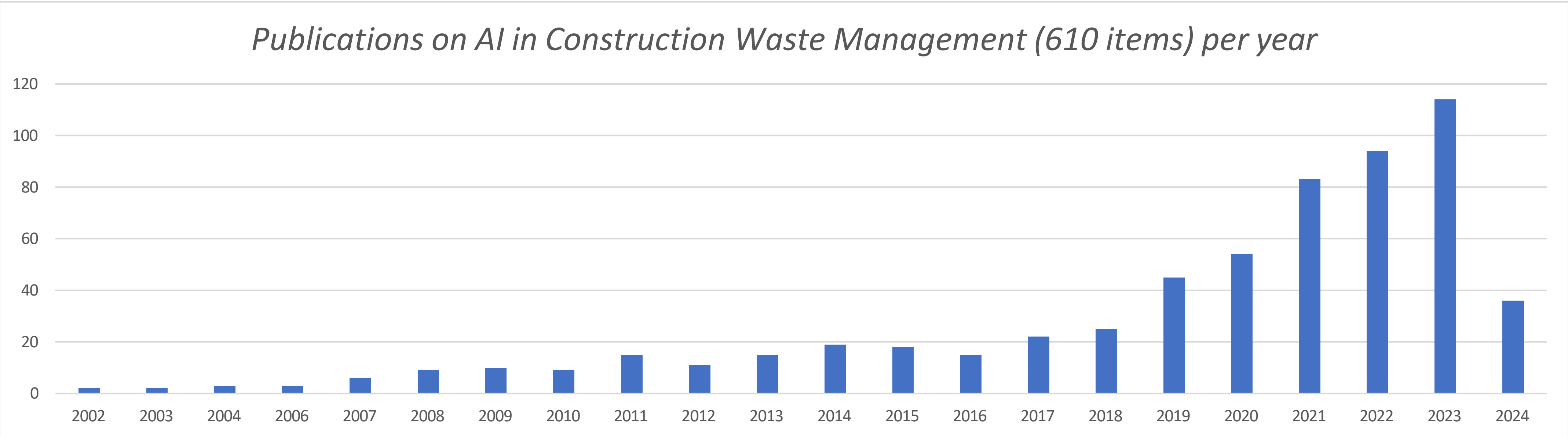

Figure 2: Graph on publications on AI in Construction Waste Management (610 items) per year