

Advances in sustainable additive manufacturing: A systematic review for construction industry to mitigate greenhouse gas emissions

Oladunni et al., 2025



Graphical abstract:

Appendix One: Electronic Bibliographic Databases

Google Scholar, Scopus, Web of Science, Science Direct (Elsevier), Springer Link, Taylor & Francis, Wiley Online, MDPI, Frontiers, ResearchGate, ScienceOpen, Cochrane Library, Index Copernicus, Mendeley, OECD iLibrary, ORCID, Scientific Information Database (SID), WorldCat, WorldWideScience, ASCE Library, OpenAlex, OpenAIRE Graph, Concrete Vault MyScienceWork, J-Gate, Engineering Handbooks Online, ProQuest, CORE, Zenty, ERIC (Educational Resource Information Center), Paperity, United States Patent and Trade Mark, Office and African Journals Online (AJOL), and Engineering Workbench.

Organisation websites

American Society for Testing and Materials (ASTM), Wohlers Report, SmarTech Analysis, Siemens Additive Manufacturing, Additive Manufacturing LLC, Arcam (Sweden), Electro Optical Systems (Germany), Additive Manufacturing Consortium, Additive Manufacturing Center of Excellence (AMCOE), MCP Tooling Technologies (United Kingdom) Contour Crafting, Additive Industries, Additive Manufacturing UK, AMGTA, COBOD International, CyBe Construction, Constructions 3D, Mighty Buildings, SQ4D, XtreeE, WASP, PERI Group (Peri 3D Construction), Apis Cor, and ICON, World Meteorological Organization (MGO), Stratasys, HP, EOS, Formlabs, United Nations (UN).

Appendix Two: Key search terms

Google Scholar (01/07/2023 – 28/02/2024):

((“sustainable additive manufacturing” or “3D printing”)) AND ((“construction industry” or “building sector”)) AND ((“greenhouse gas emissions” OR “GHG emissions”)) AND ((“energy consumption (low & high)”)), AND ((“environmental sides implications”)), AND ((“economic cost implications”)) AND ((“systemic review” OR “literature review”))

Web of Science (01/07/2023 – 28/02/2024):

TS=(“sustainable additive manufacturing”) OR (“3D printing”) AND TS=(“construction industry” OR “building sector”) AND TS=(“greenhouse gas emissions”) OR “GHG emissions”) AND TS=(“energy consumption (low & high)”), AND TS=(“environmental sides implications”), AND TS=(“economic cost implications”) AND TS=(“systemic review” OR “literature review”)

OID (01/07/2023 – 28/02/2024):

((“sustainable additive manufacturing” OR “3D printing”)) AND ((“construction industry” OR “building sector”)) AND ((“greenhouse gas emissions” OR “GHG emissions”)) AND ((“energy consumption (low & high)”)), AND ((“environmental sides implications”)), AND ((“economic cost implications”)) AND ((“systemic review” OR “literature review”)).

ResearchGate (01/07/2023 – 28/02/2024):

"sustainable additive manufacturing" OR "3D printing" AND "construction industry" OR "building sector" AND "greenhouse gas emissions" OR "GHG emissions" AND “energy consumption (low & high)”, AND “environmental sides implications”, AND “economic cost implications” AND "systematic review" OR "literature review".

SCOPUS (01/07/2023 – 28/02/2024):

TITLE-ABS-KEY (("sustainable additive manufacturing" OR "3D printing") AND ("construction industry" OR "building sector") AND ("greenhouse gas emissions" OR "GHG emissions") AND (“energy consumption (low & high)”), AND (“environmental sides implications”), AND (“economic cost implications”) AND ("systematic review" OR "literature review").

Taylor & Francis (01/07/2023 – 28/02/2024):

("sustainable additive manufacturing" OR "3D printing") AND ("construction industry" OR "building sector") AND ("greenhouse gas emissions" OR "GHG emissions") AND (“energy consumption (low & high)”), AND (“environmental sides implications”), AND (“economic cost implications”) AND ("systematic review" OR "literature review").

Wiley Online (01/07/2023 – 28/02/2024):

("sustainable additive manufacturing" OR "3D printing") AND ("construction industry" OR "building sector") AND ("greenhouse gas emissions" OR "GHG emissions") AND (“energy consumption (low & high)”), AND (“environmental sides implications”), AND (“economic cost implications”) AND ("systematic review" OR "literature review").

MDPI (01/07/2023 – 28/02/2024):

("sustainable additive manufacturing" OR "3D printing") AND ("construction industry" OR "building sector") AND ("greenhouse gas emissions" OR "GHG emissions") AND (“energy consumption (low & high)”), AND (“environmental sides implications”), AND (“economic cost implications”) AND ("systematic review" OR "literature review").

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