

REFERENCES

- [1] Madya, F. Abdullah, C. Chiet, K. Anuar and T. Shen, "An overview on the growth and development of the Malaysian Construction Industry," in *Construction Contract Management 2004*, University Teknologi Malaysia, 2004.
- [2] Y. Nasr, H. Zakhem, A. Hamami, M. Bachawati and R. Belarbi, "Comprehensive Review of Innovative Materials for Sustainable Buildings' Energy Performance," *Energies* , vol. 16, 2023.
- [3] I. Yüksek and T. T. Karadayi, "Energy-Efficient Building Design in the Context of Building Life Cycle," in *Energy Efficient Buildings*, 2017, pp. 93-123.
- [4] A. Hussain and M. A. Kamal, "Energy Efficient Sustainable Building Materials: An Overview," *Key Engineering Materials Online*, vol. 650, pp. 38-50, 03 07 2015.
- [5] A. N. Ede, O. Olofinnade, E. Enyi-Abonta and G. O. Bamigboye, "Implications of Construction Materials on Energy Efficiency of Buildings in Tropical Regions," *International Journal of Applied Engineering Research*, vol. 12, no. 18, pp. 7873-7883, 10 2017.
- [6] İ. Yüksek, "The Evaluation of Building Materials in Terms of Energy Efficiency," *Periodica Polytechnica Civil Engineering*, vol. 59, no. 1, pp. 45-58, 01 2015.
- [7] H. Thanu, H. Kanya Kumari and C. Rajasekaran, "Sustainable Building Management by Using Alternative Materials and Techniques," in *Sustainable Construction and Building Materials*, 2018.
- [8] N. C. Niriella, " Emerging social-spatial polarisation within the housing market in Colombo, Sril Lanka," *Journal of Urban Regeneration and Renewal* , vol. 11, no. 2, pp. 43-52, 2017.
- [9] E. D. P. F. P. a. T. Ministry of Finance, "Census of Population and Housing 2024," Department of Census and Statistics, Colombo, Sri Lanka, 2024.
- [10] S. Goubran, "On the role of construction in achieving the SDGs," *Journal of Sustainable Research*, vol. 1, p. 190020, 2019.

- [11] G. Silviu, "Sustainability as a new school of thought in project management," *Journal of Cleaner Production*, vol. 166, pp. 1479-1493, 2017.
- [12] J. L. Gálvez-Martos, D. Styles, H. Schoenberger and D. Zeschmar-Lahl, "Construction and demolition waste best management practice in Europe," *Resources, Conservation & Recycling*, vol. 136, pp. 166-178, 2018.
- [13] A. Opoku and N. Williams, "Second-generation gender bias: An exploratory study of the women's leadership gap in a U.K. construction organisation," *International Journal of Ethics Systems*, vol. 35, no. 2, pp. 2-23, 2019.
- [14] P. Sharma, "Energy Autonomy: Local Solutions for Global Resource Challenges," *Journal of Sustainable Solutions*, vol. 1, no. 2, pp. 7-12, 2024.
- [15] I. E. A. Energy in Buildings and Communities Programme, "Evaluation of Embodied Energy and CO2 for Building Construction (Annex 57)," International Energy Agency, 2016.
- [16] P. Mithra, L. T. Kuriakose and A. Unnithan, "Embodied Energy Assessment of Building Materials," *IJRET: International Journal of Research in Engineering and Technology*, vol. 4, no. 3, pp. 27-28, 2015.
- [17] R. Kassim and M. H. Santhi, "Basic Studies on Embodied Energy in Construction Materials," *International Journal of Earth Sciences and Engineering*, vol. 9, no. 6, pp. 2452-2456, 2016.
- [18] N. Ferronato and V. Torretta, "Waste Mismanagement in Developing Countries: A Review of Global Issues," *International Journal of Environmental Research and Public Health*, vol. 16, p. 1060, 2019.
- [19] H. A. Olayiwola, L. AbuduLawal and G. K. Adewuyi, "Effects of Indiscriminate Solid Waste Disposal and Environmental Issues In Ibadan South West Local Government, Oyo State, Nigeria," *Journal of Natural Sciences Research*, vol. 7, no. 10, pp. 87-97, 2017.
- [20] E. Joseph, "From Trash to Trouble: The Impact of Solid Waste Dumping in India," *Ecology Environment and Conservation*, vol. 30, pp. S17-S21, 2024.
- [21] A. Siddiqua, J. N. Hahladakis and W. A. K. A. Al-Attiya, "An overview of the environmental pollution and health effects associated with waste landfilling and open dumping," *Environmental Science and Pollution Research*, vol. 29, pp. 58512-58536, 2022.

- [22] D. Dissanayake, C. Jayasinghe and M. Jayasinghe, "A Comparative Embodied Energy Analysis of a House with Recycled Expanded Polystyrene (EPS) Based Foam Concrete Wall Panels," *Energy and Buildings*, vol. 135, pp. 85-94, 2017.
- [23] R. Shiveswarran, N. Athukorala and M. Jayasinghe, "Embodied Energy and Lifecycle Assessment of EPS based Lightweight Panel Apartments in Tropical Uplands," in *2th International Conference on Structural Engineering and Construction Management*, Colombo, Sri Lanka, 2021.
- [24] F. Parisi, D. Asprone, L. Fenu and A. Prota, "Experimental characterization of Italian composite adobe bricks reinforced with straw fibers," *Composite Structures*, vol. 122, pp. 300-307, 2015.
- [25] N. Sathiparan and H. De Zoysa, "The effects of using agricultural waste as partial substitute for sand in cement blocks," *Journal of Building Engineering*, vol. 19, pp. 216-227, 2018.
- [26] N. Sathiparan, A. Anburuvel, M. Muralitharan and D. A. I. Kothalawala, "Sustainable use of coco pith in cement-sand mortar for masonry block production: Mechanical characteristics, durability and environmental benefit," *Journal of Cleaner Production*, vol. 360, p. 132243, 2022.
- [27] N. Bilgin, H. A. Yeprem, S. Arslan, A. Bilgin, E. Günay and M. Marşoğlu, "Use of waste marble powder in brick industry," *Construction and Building Materials*, vol. 29, pp. 449-457, 2012.
- [28] C. K. Madheswaran, P. S. Ambily, J. K. Dattatreya and N. P. Rajamane, "Studies on use of copper slag as replacement material for river sand in building constructions," *Journal of the Institution of Engineers (India): Series A*, vol. 95, no. 3, pp. 169-177, 2014.
- [29] M. M. Sabai, M. Cox, R. Mato, E. Egmond and J. Lichtenberg, "Concrete block production from construction and demolition waste in Tanzania," *Resources, Conservation and Recycling*, vol. 72, pp. 9-19, 2013.
- [30] K. Thanushan, Y. Yogananth, P. Sangeeth, J. G. Coonghe and N. Sathiparan, "Strength and durability characteristics of coconut fibre reinforced earth cement blocks," *Journal of Natural Fibers*, vol. 18, no. 6, pp. 773-788, 2019.
- [31] S. Jeyasegaram and N. Sathiparan, "Influence of soil grading on the mechanical behavior of earth cement blocks," *MRS Advances*, vol. 5, no. 54, pp. 2771-2782, 2020.

- [32] B. Arulmoly, C. Konthesingha and A. Nanayakkara, "Performance evaluation of cement mortar produced with manufactured sand and offshore sand as alternatives for river sand," *Construction and Building Materials*, vol. 297, p. 123784, 2021.
- [33] K. Sundaralingam, A. Peiris, A. Anburuvel and N. Sathiparan, "Strength and durability characteristics of cement blocks incorporating quarry dust as river sand replacement," in *Proceedings of the 8th International Symposium on Advances in Civil and Environmental Engineering Practices for Sustainable*, Galle, Sri Lanka, 2021.
- [34] N. Sathiparan, J. Jaasim and B. Banujan, "Sustainable production of cement masonry blocks with the combined use of fly ash and quarry dust," *Materialia*, vol. 26, p. 101621, 2022.
- [35] R. Joshi and V. Prakash, "An Experimental Study on Fly Ash based Interlocking Hollow Concrete Blocks for Walls," *International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES)*, vol. 4, no. 5, pp. 809-813, 2018.
- [36] A. A. Shakir, S. Naganathan and K. N. B. Mustapha, "Development Of Bricks From Waste Material: A Review Paper," *Australian Journal of Basic and Applied Sciences*, vol. 7, no. 8, pp. 812-818, 2013.
- [37] L. C. S. Herek, C. E. Hori, M. H. M. Reis, N. D. Mora, C. R. G. Tavares and R. Bergamasco, "Characterization of ceramic bricks incorporated with textile laundry sludge," *Journal of Ceramics International*, vol. 38, pp. 951-959, 2012.
- [38] N. C. Onyenokporo, A. Taki, L. Z. Montalvo and M. Oyinlola, "Thermal performance characterization of cement-based masonry blocks incorporating rice husk ash," *Construction and Building Materials*, vol. 398, p. 132481, 2023.
- [39] H. Ahmed, M. Hefni, H. Ahmed and H. Saleem, "Cement Kiln Dust (CKD) as a Partial Substitute for Cement in Pozzolanic Concrete Blocks," *Buildings*, vol. 13, no. 2, 2023.
- [40] K. Gourav and B. V. V. Reddy, "Characteristics of compacted fly ash bricks and fly ash brick masonry," *Journal of sStructural Engineering*, vol. 41, no. 2, pp. 144-157, 2014.
- [41] B. Pushpakumara and G. S. De Silva, "Characteristics of Masonry Blocks Manufactured with Rice Husk Ash (RHA) and Lime," *Engineer*, vol. 45, no. 3, pp. 1-10, 2012.

- [42] N. C. Onyenokporo, A. Taki, L. Z. Montalvo and M. A. Oyinlola, "Exploring the Impact of Rice Husk Ash Masonry Blocks on Building Energy Performance," *Buildings*, vol. 14, p. 1290, 2024.
- [43] K. Selvaranjan, S. Navaratnam, J. C. P. H. Gamage, J. Thamboo, R. Siddique, J. Zhang and G. Zhang, "Thermal and environmental impact analysis of rice husk ash-based mortar as insulating wall plaster," *Construction and Building Materials*, vol. 283, p. 122744, 2021.
- [44] A. Kaya and F. Kar, " Properties of concrete containing waste expanded polystyrene and natural resin," *Construction and Building Materials*, vol. 105, pp. 572-278, 2016.
- [45] C. Aciu, D. L. Manea, L. M. Molnar and E. Jumate, "Recycling of polystyrene waste in the composition of ecological mortar," *Procedia Technology*, vol. 19, pp. 498-505, 2015.
- [46] B. Coppola, L. Courard, F. Michel, L. Incarnato and L. Di Maio, "Investigation on the use of foamed plastic waste as natural aggregates replacement in lightweight mortar," *Composites Part B: Engineering*, vol. 15, pp. 75-83, 2016.
- [47] D. Gamage and G. Tharmarajah, "Light-weight non-load bearing blocks using expanded polystyrene beads," in *UKIERI Concrete Congress 2019*, Punjab, India, 2022.
- [48] E. Sassine, Y. Cherif, J. Dgheim and E. Antczak, "Experimental and Numerical Thermal Assessment of EPS Concrete Hollow Blocks in Lebanon," *Journal of Materials in Civil Engineering*, vol. 32, no. 8, p. 05020007, 2020.
- [49] A. A. Sayadi, J. V. Tapia, T. R. Neitzert and G. C. Clifton, "Effects of expanded polystyrene (EPS) particles on fire resistance, thermal conductivity and compressive strength of foamed concrete," *Construction and Building Materials*, vol. 112, pp. 716-724, 2016.
- [50] M. M. El-Attar, D. M. Sadek and A. M. Salah, "Recycling of high volumes of cement kiln dust in bricks industry," *Journal of Cleaner Production*, vol. 30, pp. 1-10, 2016.
- [51] M. H. Ghazaly , M. N. Almaghrabi and E. E. Ebrahiem, "A study on the resue of cement kiln dust in the production of cement concerts," *Minia Journal of Engineering and Technology*, vol. 31, no. 2, pp. 63-68, 2012.
- [52] R. Mebarkia, M. Bouzeroura and N. Chelouah, "Study of the effect of cement kiln dust on the mechanical, thermal and durability properties of compressed

earth blocks," *Construction and Building Materials*, vol. 349, no. 10, p. 128707, 2022.

- [53] S. Maithel, R. Rawal and Y. Shukla, "Thermal properties of Indian Masonry units & Masonry for Eco-Niwas Samhita implementation," 2023.
- [54] B. Pushpakumara and G. S. De Silva , " Characteristics of Masonry Blocks Manufactured with Rice Husk Ash (RHA) and Lime," *Engineer*, vol. 45, no. 3, pp. 1-10, 2012.
- [55] H. A. W. Chik, B. H. A. Bakar, M. A. M. Johari and R. P. Jaya, "Properties of concrete block contaibning rice husk ash subjected to girha," *International Journal of Recent Research and Applied Studies*, vol. 8, no. 1, pp. 57-64, 2011.
- [56] D. Gamage and G. Tharmarajah, "Light-weight non-load bearing blocks using expanded polystyrene beads," 2022.
- [57] A. S. Moon and A. Patel, "Sustainable Construction Using EPS Beads in Light Weight Blocks to form Innovative Foam Concrete as a Green Building Materials," in *IOP Conf. Series: Materials Science and Engineering*, Jaipur, India, 2020.
- [58] H. M. Ahmed, M. A. Hefni, H. A. M. Ahmed and H. A. Saleem, " Cement Kiln Dust (CKD) as a Partial Substitute for Cement in Pozzolanic Concrete Blocks," *Buildings*, vol. 13, p. 568, 2023.
- [59] K. V. Kumar, C. Daniel, V. Amudhan, S. Kapilan and E. Arunraj, "Experimental investigation of eco-friendly building blocks utilizing coconut shells," *Materials Today: Proceedings*, 2023 (in press).
- [60] M. K. Dixit, J. L. Fernández-Solís, S. Lavy and C. H. Cu, " Identification of parameters for embodied energy measurement: Aliterature review," *Energy and Buildings*, vol. 42, no. 8, pp. 1238-1247, 2010.
- [61] J. Nassen, J. Holmberg, A. Wadeskog and M. Nyman, "Direct and indirect energy use and carbon emissions in the production phase of buildings: An input–output analysis," *Energy*, vol. 32, no. 9, pp. 1593-1602, 2007.
- [62] R. Fay, G. Treloar and U. Iyer-Raniga, "Life-cycle energy analysis of buildings: a case study," *BUILDING RESEARCH & INFORMATION*, vol. 28, no. 1, pp. 31-41, 2000.

- [63] M. Jang, T. Hong and C. Ji, " Hybrid LCA model for assessing the embodied environmental impacts of buildings in South Korea," *Environmental Impact Assessment Review*, vol. 50, pp. 143-155, 2015.
- [64] M. A. Kamal, "Analysis of autoclaved aerated concrete (AAC) blocks with reference to its potential and sustainability," *Journal of Building Materials and Structures*, vol. 7, no. 1, pp. 76-86, 2020.
- [65] A. Thakur, S. S. S. Rao, V. H. Raj, A. Saikumar, R. Sobti and C. Lavanya , "Sustainable Construction Practices using Autoclaved Aerated Concrete (AAC) Blocks as a Replacement," in *E3S Web of Conferences (ICCMES 2024)*, 2024.
- [66] G. Hammond and C. Jones, *Embodied Carbon: The Inventory of Carbon and Energy (ICE)*, Berkshire: Univeristy of Bath, 2011.
- [67] D. Namal, *Analysis of Energy Embodied in Cement Produced in Sri Lanka*, 2004.
- [68] Ó. S. C. Barreto, J. C. R. d. S. Cruz, D. L. Medeiros and E. d. S. Almeida, "Life Cycle Assessment of Linear Alkylbenzene Sulfonate Production: An Adaptation to the Brazilian Context," *Journal of Bioengineering, Technologies and Health*, vol. 6, no. 1, pp. 38-44, 2023.
- [69] A. Alsalman, L. N. Assi, R. S. Kareem, K. Carter and P. Ziehl, "Energy and CO2 emission assessments of alkali-activated concrete and Ordinary Portland Cement concrete: A comparative analysis of different grades of concrete," *Cleaner Environmental Systems*, vol. 3, p. 100047, 2021.
- [70] E. A. M. A. (ACEA), "Differences between diesel and petrol explained," 2016. [Online]. Available: <https://www.acea.auto/fact/differences-between-diesel-and-petrol/>. [Accessed 17 04 2025].
- [71] N. Burnete, F. Mariasiu, B. Varga, D. Moldovanu, C. Iclodean and H. Martin, "onsiderations About Fuel Quality Used in Motor Vehicles," *Scientific Bulletin of the University of Pitesti, Faculty of Mechanics and Technology, Automotive Series*, vol. 17, no. 21, 2014.
- [72] R. S. Agustiningtyas, H. Takaguchi, T. Kubota, M. N. F. Alfata and U. Surahman, "Comparative analysis of life cycle inventory of cement and ready-mix concrete production in Indonesia," *Journal of Material Cycles and Waste Management*, vol. 27, pp. 488-502, 2025.

- [73] R. P. Kumanayake and H. Luo, "Cradle-to-gate life cycle assessment of energy and carbon of a residential building in Sri Lanka," *Journal of the National Science Foundation of Sri Lanka (JNSF)*, vol. 46, no. 3, pp. 355-367, 2018.
- [74] British Standards Institution (BSI), *BS EN 12667:2001 – Thermal performance of building materials and products: Determination of thermal resistance by means of guarded hot plate and heat flow meter methods – Products of high and medium thermal resistance*, London: British Standards Institution, 2001.
- [75] N. Athukorala, M. Jayasinghe and A. Shea, "Thermal characteristics of commercially manufactured expanded polystyrene composite lightweight concrete," *Next Materials*, vol. 8, p. 100854, 2025.
- [76] ASTM International, "ASTM C140/C140M–18: Standard test methods for sampling and testing concrete masonry units and related units," ASTM International, West Conshohocken, PA, 2018.
- [77] International Organization for Standardization, "ISO/DIS 6946:2015 Building components and building elements — Thermal resistance and thermal transmittance — Calculation method," International Organization for Standardization, Geneva, 2015.
- [78] M. Ismaiel, Y. Chen, C. Cruz-Noguez and M. Hagel, "Thermal resistance of masonry walls: a literature review on influence factors, evaluation, and improvement," *Journal of Building Physics*, vol. 45, no. 4, pp. 528-567, 2022.
- [79] J. Clarke, P. Yaneske and A. Pinney, "The Harmonisation of Thermal Properties of Building Materials," Building Research Establishment (BRE), Watford, 1990.
- [80] G. S. De Silva and S. Singhapura , "Structural Performance of Solid Masonry Blocks Made using Crushed Coconut Shell Aggregates," *International Journal of Science, Environment and Technology*, vol. 5, no. 4, pp. 1796-1803, 2016.
- [81] G. Pennarasi, K. Gunasekaran and R. Ramasubramani, "Coconut shell concrete solid blocks and their properties," in *Advancements in Materials for Civil Engineering Applications*, 2024.