

DAFTAR PUSTAKA

- Anjani, A., Bayzoni, B., Husni, H. R., & Niken, C. (2022). Penerapan *Building Information Modeling* (BIM) Menggunakan Software Autodesk Revit pada Gedung 4 Rumah Sakit Pendidikan Perguruan Tinggi Negeri (RSPTN) Universitas Lampung. *Jurnal Rekayasa Sipil dan Desain (JRSDD)*, 10(1).
- Badan Standardisasi Nasional. (2000). *SNI 03-2834-2000: Tata cara pembuatan rencana campuran beton normal*. BSN.
- Badan Standardisasi Nasional. (2011). *SNI 1974:2011: Cara uji kuat tekan beton dengan benda uji*. BSN.
- Badan Standardisasi Nasional. (2014). *SNI 2460:2014: Spesifikasi abu terbang batubara dan pozolan alam mentah atau yang telah dikalsinasi untuk digunakan dalam beton*. BSN.
- Badan Standardisasi Nasional. (2016). *SNI 6385:2016: Spesifikasi semen slag untuk digunakan dalam beton, mortar, dan grout*. BSN.
- Badan Standardisasi Nasional. (2017). *SNI 8363:2017: Semen Portland slag*. BSN.
- Badan Standardisasi Nasional. (2019). *SNI 1726:2019: Tata cara perencanaan ketahanan gempa untuk struktur bangunan gedung dan non gedung*. BSN.
- Badan Standardisasi Nasional. (2019). *SNI 2847:2019: Persyaratan beton struktural untuk bangunan gedung*. BSN.
- Bagaskara, R. (2026). [emisi karbon pada aktivitas industri, termasuk industri semen]. .
- An-Nawawi, A. (2025). [beton ramah lingkungan berbasis material alternatif/limbah industri]. .
- BIMtrust. (2026). [integrasi BIM dan sertifikasi bangunan hijau].

- European Committee for Standardization [CEN]. (2011). *EN 15978:2011 — Sustainability of construction works: Assessment of environmental performance of buildings — Calculation method*. CEN.
- European Committee for Standardization [CEN]. (2019). *EN 15804:2019+A2 — Sustainability of construction works: Environmental product declarations — Core rules for the product category of construction products*. CEN.
- CTS Network. (2026). [Sumber daring mengenai supplementary cementitious materials (SCM) pada beton rendah karbon]
- Discover Sustainability. (2025). [Artikel jurnal mengenai perbandingan perangkat lunak LCA, termasuk One Click LCA, untuk sertifikasi bangunan hijau].
- Eleftheriadis, S., Duffour, P., Greening, P., James, J., Stephenson, B., & Mumovic, D. (2018). Investigating relationships between cost and CO2 emissions in reinforced concrete structures using a BIM-based design optimisation approach. *Energy and Buildings*, 166, 330–346.
<https://doi.org/10.1016/j.enbuild.2018.02.037>
- P.E. Farrell , J.R. Maddison . (2009). *Conservative interpolation between volume meshes by local Galerkin projection*.
<https://www.sciencedirect.com/science/article/abs/pii/S0045782510002276?via%3Dihub>
- Ghozali, I. (2013). *Aplikasi analisis multivariate dengan program IBM SPSS 21* (7th ed.). Badan Penerbit Universitas Diponegoro.
- Huang, B., Zhang, H., Ullah, H., & Lv, Y. (2025). BIM-based embodied carbon evaluation during building early-design stage: A systematic literature review. *Environmental Impact Assessment Review*, 112, 107768.
<https://doi.org/10.1016/j.eiar.2024.107768>
- INCOCYCLE. (2023). embodied carbon dan siklus hidup bangunan

- International Organization for Standardization [ISO]. (2006). *ISO 14040/44:2006 — Environmental management: Life cycle assessment — Principles and framework*. ISO.
- International Organization for Standardization [ISO]. (2017). *ISO 21930:2017 — Sustainability in buildings and civil engineering works: Core rules for environmental product declarations of construction products and services*. ISO.
- Kaewunruen, S., Fu, H., Adebiyi, A., & Sengsri, P. (2024). Digital twins for managing bridge climate change adaptation. *Open Research Europe*, 4, 173. <https://doi.org/10.12688/openreseurope.17809.2>
- Kaewunruen, S., Sresakoolchai, J., & Zhou, Z. (2020). Sustainability-based lifecycle management for bridge infrastructure using 6D BIM. *Sustainability*, 12(6), 2436. <https://doi.org/10.3390/su12062436>
- Keyhani, M., Bahadori-Jahromi, A., & Godfrey, P. B. (2024). A comparative study of traditional vs. automated BIM-LCA methods for embodied carbon assessment. *Engineering Future Sustainability*, 1(4). <https://doi.org/10.36828/efs.265>
- Kementerian Pekerjaan Umum dan Perumahan Rakyat. (2018). *Peraturan Menteri PUPR Nomor 22 Tahun 2018 tentang Bangunan Gedung Hijau*. Kementerian PUPR.
- Kementerian Pekerjaan Umum dan Perumahan Rakyat. (2021). *Peraturan Menteri PUPR Nomor 21 Tahun 2021 tentang Penilaian Kinerja Bangunan Gedung Hijau*. Kementerian PUPR.
- Kundu, S. P., (2018). *Evaluation of thermal and mechanical properties of fly ash blended concrete*
- Nizar Fauzan. (2026). *Analisis emisi karbon pada bangunan bertingkat menggunakan BIM 6D dengan pendekatan perangkat penilaian BCA Green Mark Singapura*.

- One Click LCA. (2026). *One Click LCA software documentation*. Bionova Ltd.
<https://www.oneclicklca.com> .
- Parece, S., Resende, R., & Rato, V. (2024). A BIM-based tool for embodied carbon assessment using a Construction Classification System. *Developments in the Built Environment*, 19, 100467.
<https://doi.org/10.1016/j.dibe.2024.100467>
- Reista, I. A., Annisa, A., & Ilham, I. (2022). Implementasi *Building Information Modeling* (BIM) dalam Estimasi Volume Pekerjaan Struktural dan Arsitektural. *Journal of Sustainable Construction*, 2(1), 13–22.
- Sacks, R., Eastman, C., Lee, G., & Teicholz, P. (2018). *BIM handbook: A guide to building information modeling for owners, designers, engineers, contractors, and facility managers* (3rd ed.). John Wiley & Sons.
- Sangadji, S., Kristiawan, S. A., & Saputra, I. K. (2019). Pengaplikasian *Building Information Modeling* (BIM) dalam desain bangunan gedung. *E-Jurnal Matriks Teknik Sipil*, 7(3).
- Septiady, E. (2024). metode analisis kuantitatif dalam penelitian
- Siddique, R. (2003). *Effect of fine aggregate replacement with class F fly ash on the mechanical properties of concrete*.
- Soust-Verdaguer, B., Llatas, C., & García-Martínez, A. (2017). Critical review of BIM-based LCA method to buildings. *Energy and Buildings*, 136, 110–120. <https://doi.org/10.1016/j.enbuild.2016.12.009>
- United Nations Environment Programme & Global Alliance for Buildings and Construction. (2025). *Global status report for buildings and construction 2025–2026*. UNEP. <https://www.unep.org/resources/report/global-status-report-buildings-and-construction-2025-2026>
- Universitas Negeri Surabaya. (2025). Analisis Data: Pengertian, Jenis, dan Tahapan Analisisnya. <https://si.ft.unesa.ac.id/post/analisis-data-pengertian-jenis-dan-tahapan-analisisnya>

Viscuso, S., et al. (2022). perhitungan Global Warming Potential (GWP) pada material konstruksi

Wicaksono, A. D., & Bayuaji, R. (2025). Evaluasi Efisiensi Embodied Carbon dari Spesifikasi Material Bangunan Hijau. *Jurnal Profesi Insinyur Universitas Lampung*, 6(1). <https://doi.org/10.23960/jpi.v6n1.153>

Xu, L., & Huang, B.. (2024). *Thermal properties of fly ash concrete*,

