

DAFTAR PUSTAKA

- Aditya, V. K., Mintoogo, D. S., & Priatman, J. N. K. (2022). *Parameter desain untuk modul green façade bangunan vertikal yang memudahkan pemasangan dan perawatan*. 4(2), 91–99.
- Ahsan, M. M., Cheng, W., Hussain, A. B., Chen, X., & Wajid, B. A. (2022). Knowledge mapping of research progress in vertical greenery systems (VGS) from 2000 to 2021 using CiteSpace based scientometric analysis. *Energy and Buildings*, 256, 111768. <https://doi.org/10.1016/j.enbuild.2021.111768>
- Aksamija, A. (2015). High-Performance Building Envelopes: Design Methods. *BEST4 Conference*. https://www.brikbaze.org/sites/default/files/BEST4_4.2_Aksamija.paper_.pdf%0Ahttp://www.wiley.com/WileyCDA/WileyTitle/productCd-1118458605.html
- Allen, M. R., Dube, O. P., & Solecki, W. (2019). *Framing and Context*. In: *Global Warming of 1.5°C*. 49–92.
- Anderson, B. G., & Bell, M. L. (2009). Weather-related mortality: How heat, cold, and heat waves affect mortality in the United States. *Epidemiology*, 20(2), 205–213. <https://doi.org/10.1097/EDE.0b013e318190ee08>
- Arengi, A., Perra, C., & Caffi, M. (2021). Simulating and comparing different vertical greenery systems grouped into categories using energypus. *Applied Sciences (Switzerland)*, 11(11). <https://doi.org/10.3390/app11114802>
- Atthaillah, A., Bakhtiar, A., & Badriana, B. (2019). Optimalisasi Pencahayaan Alami Dengan Useful Daylight Illuminance Pada Desain Rumah Toko (Ruko) Di Kota Lhokseumawe. *Nature: National Academic Journal of Architecture*, 6(1), 11. <https://doi.org/10.24252/nature.v6i1a2>
- Azkorra-Larrinaga, Z., Erkoreka-González, A., Flores-Abascal, I., Pérez-Iribarren, E., & Romero-Antón, N. (2022). Defining the cooling and heating solar efficiency of a building component skin: application to a modular living wall. *Applied Thermal Engineering*, 210(February). <https://doi.org/10.1016/j.applthermaleng.2022.118403>
- Besir, A. B., & Cuce, E. (2018). Green roofs and facades: A comprehensive review. *Renewable and Sustainable Energy Reviews*, 82(September 2017), 915–939. <https://doi.org/10.1016/j.rser.2017.09.106>
- Bit, E. (2012). *Il nuovo verde verticale. Tecnologie progetti linee guida*. Wolters Kluwer Italia. <https://books.google.co.id/books?id=I9rYMgEACAAJ>
- Bustami, R. A., Belusko, M., Ward, J., & Beecham, S. (2018). Vertical greenery systems: A systematic review of research trends. *Building and Environment*, 146(August), 226–237. <https://doi.org/10.1016/j.buildenv.2018.09.045>
- Campbell, G. S. (1986). Extinction coefficients for radiation in plant canopies calculated using an ellipsoidal inclination angle distribution. *Agricultural and Forest Meteorology*, 36(4), 317–321. [https://doi.org/10.1016/0168-1923\(86\)90010-9](https://doi.org/10.1016/0168-1923(86)90010-9)
- Campbell, G. S. (1990). Derivation of an angle density function for canopies with ellipsoidal leaf angle distributions. *Agricultural and Forest Meteorology*, 49(3), 173–176. [https://doi.org/10.1016/0168-1923\(90\)90030-A](https://doi.org/10.1016/0168-1923(90)90030-A)
- Campbell, G. S. (2020). *The researcher's complete guide to Leaf Area Index (LAI)*. 1–53. <https://www.metergroup.com/environment/articles/lp80-pain-free-leaf-area-index-lai/>
- Campiotti, C. A., Gatti, L., Campiotti, A., Consorti, L., De Rossi, P., Bibbiani, C., Muleo, R., & Latini, A. (2022). Vertical Greenery as Natural Tool for Improving Energy Efficiency of Buildings. *Horticulturae*, 8(6). <https://doi.org/10.3390/horticulturae8060526>
- Carlos, J. S. (2015). Simulation assessment of living wall thermal performance in winter in the climate of Portugal. *Building Simulation*, 8(1), 3–11. <https://doi.org/10.1007/s12273-014-0187-2>
- Chianucci, F., Pisek, J., Raabe, K., Marchino, L., Ferrara, C., & Corona, P. (2018). A dataset of leaf inclination angles for temperate and boreal broadleaf woody species. *Annals of Forest Science*, 75(2), 1–7. <https://doi.org/10.1007/s13595-018-0730-x>
- CHPS, & Corporation, A. E. (2006). Daylighting metric development using daylight autonomy calculations in the sensor placement optimization tool. *Boulder, Colorado: Architectural Energy Corporation*.
- Convertino, F., Schettini, E., Blanco, I., Bibbiani, C., & Vox, G. (2022). Effect of Leaf Area Index on Green Facade Thermal Performance in Buildings. *Sustainability (Switzerland)*, 14(5), 1–12. <https://doi.org/10.3390/su14052966>
- Cortês, A., Almeida, J., Tadeu, A., Ramezani, B., Fino, M. R., de Brito, J., & Silva, C. M. (2022). The effect of cork-based living walls on the energy performance of buildings and local microclimate. *Building and Environment*, 216(January). <https://doi.org/10.1016/j.buildenv.2022.109048>
- Daemei, A. B., Shafiee, E., Chitgar, A. A., & Asadi, S. (2021). Investigating the thermal performance of

- green wall: Experimental analysis, deep learning model, and simulation studies in a humid climate. *Building and Environment*, 205(July), 108201. <https://doi.org/10.1016/j.buildenv.2021.108201>
- Dahanayake, K. W. D. K. C., & Chow, C. L. (2017). Studying the potential of energy saving through vertical greenery systems: Using EnergyPlus simulation program. *Energy and Buildings*, 138, 47–59. <https://doi.org/10.1016/j.enbuild.2016.12.002>
- Dahl, R. (2013). Cooling Concepts. *Environmental Health Perspectives*, 121(1), A18–A25.
- Darmawijaya. (2021). Pembangunan Pusat Data Hijau sebagai Wahana Percepatan Pembangunan Ekonomi Berkelanjutan. *Bappenas Working Papers*, 4(1), 64–83. <https://doi.org/10.47266/bwp.v4i1.92>
- Davis, M. M., & Hirmer, S. (2015). The potential for vertical gardens as evaporative coolers: An adaptation of the “Penman Monteith Equation.” *Building and Environment*, 92, 135–141. <https://doi.org/10.1016/j.buildenv.2015.03.033>
- De Bock, A., Belmans, B., Vanlanduit, S., Blom, J., Alvarado-Alvarado, A. A., & Audenaert, A. (2023). A review on the leaf area index (LAI) in vertical greening systems. *Building and Environment*, 229(December 2022), 109926. <https://doi.org/10.1016/j.buildenv.2022.109926>
- Djedjig, R., Bozonnet, E., & Belarbi, R. (2015). Analysis of thermal effects of vegetated envelopes: Integration of a validated model in a building energy simulation program. *Energy and Buildings*, 86, 93–103. <https://doi.org/10.1016/j.enbuild.2014.09.057>
- Dunnett, N., & Kingsbury, N. (2008). *Planting green roofs and living walls*. Timber press.
- Faragalla, A. M. A., & Asadi, S. (2022). Biomimetic Design for Adaptive Building Façades: A Paradigm Shift towards Environmentally Conscious Architecture. *Energies*, 15(15), 0–21. <https://doi.org/10.3390/en15155390>
- Fecheyr-Lippens, D., & Bhiwapurkar, P. (2017). Applying biomimicry to design building envelopes that lower energy consumption in a hot-humid climate. *Architectural Science Review*, 60(5), 360–370. <https://doi.org/10.1080/00038628.2017.1359145>
- García, M., Vera, S., Rouault, F., Gironás, J., & Bustamante, W. (2022). Cooling potential of greenery systems for a stand-alone retail building under semiarid and humid subtropical climates. *Energy and Buildings*, 259. <https://doi.org/10.1016/j.enbuild.2022.111897>
- GBCI. (2013). Perangkat Penilaian GREENSHIP (GREENSHIP Rating Tools). *GreenShip New Building Versi 1.2, April*, 1–15. http://elib.artefakarkindo.co.id/dok/Tek_Ringkasan GREENSHIP NB V1.2 - id.pdf
- Groat, L. N., & Wang, D. (2013). *Architectural Research Methods* (2 ed.). John Wiley & Sons. <https://www.ptonline.com/articles/how-to-get-better-mfi-results>
- Hao, X., Liu, L., Tan, H., Lin, Y., Hu, J., & Yin, W. (2022). The Impacts of Greenery Systems on Indoor Thermal Environments in Transition Seasons: An Experimental Investigation. *Buildings*, 12(5). <https://doi.org/10.3390/buildings12050506>
- He, B. J. (2018). Potentials of meteorological characteristics and synoptic conditions to mitigate urban heat island effects. *Urban Climate*, 24(December 2017), 26–33. <https://doi.org/10.1016/j.uclim.2018.01.004>
- Huang, Z., Tan, C. L., Lu, Y., & Wong, N. H. (2021). Holistic analysis and prediction of life cycle cost for vertical greenery systems in Singapore. *Building and Environment*, 196(November 2020), 107735. <https://doi.org/10.1016/j.buildenv.2021.107735>
- Imran, M. (2011). *Penelitian terhadap ruang kelas sma aquino manado dengan menggunakan*. 5(2), 165–179.
- IPCC. (2007). Climate Change 2007 – Impacts, Adaptation and Vulnerability. In *International Encyclopedia of Human Geography*. <https://doi.org/10.1016/B978-008044910-4.00250-9>
- Jim, C. Y. (2015). Greenwall classification and critical design-management assessments. *Ecological Engineering*, 77, 348–362. <https://doi.org/10.1016/j.ecoleng.2015.01.021>
- Jovanović, D. D., Vasov, M., Momčilović, A., Živković, P., & Kostadinović, D. (2022). *VENTILATED GREEN FACADES AS A PASSIVE DESIGN STRATEGY*. 1(1), 70–84.
- Kamal, M., Sidik, F., Prananda, A. R. A., & Mahardhika, S. A. (2021). Mapping Leaf Area Index of restored mangroves using WorldView-2 imagery in Perancak Estuary, Bali, Indonesia. *Remote Sensing Applications: Society and Environment*, 23(June), 100567. <https://doi.org/10.1016/j.rsase.2021.100567>
- Kjellstrom, T. (2009). Climate change, direct heat exposure, health and well-being in low and middle-income countries. *Global Health Action*, 2(1), 2–4. <https://doi.org/10.3402/gha.v2i0.1958>
- Kjellstrom, T., Holmer, I., & Lemke, B. (2009). Workplace heat stress, health and productivity-an increasing challenge for low and middle-income countries during climate change. *Global Health Action*, 2(1). <https://doi.org/10.3402/gha.v2i0.2047>
- Kusumawanto, A. (2014). *Arsitektur Hijau Dalam Inovasi Kota*. Gajah Mada University Press.
- Larsen, S. F., Filippin, C., & Lesino, G. (2014). Thermal simulation of a double skin façade with plants.

- Energy Procedia*, 57, 1763–1772. <https://doi.org/10.1016/j.egypro.2014.10.165>
- Lechner, N. (2015). *HEATING, COOLING, LIGHTING Sustainable Methods For Architects* (4 ed.). John Wiley & Sons.
- Lee, J., Boubekri, M., & Liang, F. (2019). Impact of building design parameters on daylighting metrics using an analysis, prediction, and optimization approach based on statistical learning technique. *Sustainability (Switzerland)*, 11(5). <https://doi.org/10.3390/su11051474>
- Mangkuto, R. A., Koerniawan, M. D., Apriliyanthi, S. R., Lubis, I. H., Atthailah, Hensen, J. L. M., & Paramita, B. (2022). Design Optimisation of Fixed and Adaptive Shading Devices on Four Façade Orientations of a High-Rise Office Building in the Tropics. *Buildings*, 12(1). <https://doi.org/10.3390/buildings12010025>
- Mangkuto, R. A., Rohmah, M., & Asri, A. D. (2016). Design optimisation for window size, orientation, and wall reflectance with regard to various daylight metrics and lighting energy demand: A case study of buildings in the tropics. *Applied Energy*, 164, 211–219. <https://doi.org/10.1016/j.apenergy.2015.11.046>
- Mardaljevic, J., Heschong, L., & Lee, E. (2009). Daylight metrics and energy savings. *Lighting Research and Technology*, 41(3), 261–283. <https://doi.org/10.1177/1477153509339703>
- Medl, A., Stangl, R., & Florineth, F. (2017). Vertical greening systems – A review on recent technologies and research advancement. *Building and Environment*, 125, 227–239. <https://doi.org/10.1016/j.buildenv.2017.08.054>
- Moghtadernejad, S., Mirza, M. S., & Chouinard, L. E. (2019). Façade Design Stages: Issues and Considerations. *Journal of Architectural Engineering*, 25(1), 1–10. [https://doi.org/10.1061/\(asce\)ae.1943-5568.0000335](https://doi.org/10.1061/(asce)ae.1943-5568.0000335)
- Monteith, J. L., & Unsworth, M. H. (2013a). *Chapter 7 - Microclimatology of Radiation: (ii) Radiation Interception by Solid Structures* (J. L. Monteith & M. H. B. T.-P. of E. P. (Fourth E. Unsworth (ed.); hal. 95–109). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-386910-4.00007-X>
- Monteith, J. L., & Unsworth, M. H. (2013b). *Chapter 8 - Microclimatology of Radiation: (iii) Interception by Plant Canopies and Animal Coats* (J. L. Monteith & M. H. B. T.-P. of E. P. (Fourth E. Unsworth (ed.); hal. 111–133). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-386910-4.00008-1>
- Nabil, A., & Mardaljevic, J. (2006). Useful daylight illuminances: A replacement for daylight factors. *Energy and Buildings*, 38(7), 905–913. <https://doi.org/10.1016/j.enbuild.2006.03.013>
- Ning, B., & Chen, Y. (2017). Cooling load calculation for integrated operation of radiant and fresh air systems. *Procedia Engineering*, 205, 2987–2994. <https://doi.org/10.1016/j.proeng.2017.10.223>
- Oppelt, D., Herlianika, H., Papst, I., & HEAT GmbH. (2017). *Inventarisasi Gas Rumah Kaca di Sektor Refrigeration dan Air Conditioning (RAC) Indonesia*.
- Paar, M. J., & Petutschnigg, A. (2017). Biomimetic inspired, natural ventilated facade A conceptual study. *Journal of Facade Design and Engineering*, 4(3–4), 131–142. <https://doi.org/10.3233/FDE-171645>
- Parsaee, M., Demers, C. M., Hébert, M., Lalonde, J. F., & Potvin, A. (2021). Biophilic, photobiological and energy-efficient design framework of adaptive building façades for Northern Canada. *Indoor and Built Environment*, 30(5), 665–691. <https://doi.org/10.1177/1420326X20903082>
- Peng, L. L. H., Jiang, Z., Yang, X., Wang, Q., He, Y., & Chen, S. S. (2020). Energy savings of block-scale facade greening for different urban forms. *Applied Energy*, 279(30), 115844. <https://doi.org/10.1016/j.apenergy.2020.115844>
- Pérez, G., Coma, J., Chàfer, M., & Cabeza, L. F. (2022). Seasonal influence of leaf area index (LAI) on the energy performance of a green facade. *Building and Environment*, 207(October 2021). <https://doi.org/10.1016/j.buildenv.2021.108497>
- Pérez, G., Coma, J., Martorell, I., & Cabeza, L. F. (2014). Vertical Greenery Systems (VGS) for energy saving in buildings: A review. *Renewable and Sustainable Energy Reviews*, 39, 139–165. <https://doi.org/10.1016/j.rser.2014.07.055>
- Pérez, G., Coma, J., Sol, S., & Cabeza, L. F. (2017). Green facade for energy savings in buildings: The influence of leaf area index and facade orientation on the shadow effect. *Applied Energy*, 187, 424–437. <https://doi.org/10.1016/j.apenergy.2016.11.055>
- Perini, K., Bazzocchi, F., Croci, L., Magliocco, A., & Cattaneo, E. (2017). The use of vertical greening systems to reduce the energy demand for air conditioning. Field monitoring in Mediterranean climate. *Energy and Buildings*, 143, 35–42. <https://doi.org/10.1016/j.enbuild.2017.03.036>
- Planas, C., Cuerva, E., & Alavedra, P. (2018). Effects of the type of facade on the energy performance of office buildings representative of the city of Barcelona. *Ain Shams Engineering Journal*, 9(4), 3325–3334. <https://doi.org/10.1016/j.asej.2017.04.009>
- Poddar, S., Park, D., & Chang, S. (2017). Energy performance analysis of a dormitory building based on different orientations and seasonal variations of leaf area index. *Energy Efficiency*, 10(4), 887–903.

- <https://doi.org/10.1007/s12053-016-9487-y>
- Poirazis, H., Blomsterberg, Å., & Wall, M. (2008). Energy simulations for glazed office buildings in Sweden. *Energy and Buildings*, 40(7), 1161–1170. <https://doi.org/10.1016/j.enbuild.2007.10.011>
- Raji, B., Tenpierik, M. J., & Van Den Dobbelsteen, A. (2015). The impact of greening systems on building energy performance: A literature review. *Renewable and Sustainable Energy Reviews*, 45, 610–623. <https://doi.org/10.1016/j.rser.2015.02.011>
- Saitoh, T. M., Nagai, S., Noda, H. M., Muraoka, H., & Nasahara, K. N. (2012). Examination of the extinction coefficient in the Beer-Lambert law for an accurate estimation of the forest canopy leaf area index. *Forest Science and Technology*, 8(2), 67–76. <https://doi.org/10.1080/21580103.2012.673744>
- Scarpa, M., Mazzali, U., & Peron, F. (2014). Modeling the energy performance of living walls: Validation against field measurements in temperate climate. *Energy and Buildings*, 79, 155–163. <https://doi.org/10.1016/j.enbuild.2014.04.014>
- Shahin, H. S. M. (2019). Adaptive building envelopes of multistory buildings as an example of high performance building skins. *Alexandria Engineering Journal*, 58(1), 345–352. <https://doi.org/10.1016/j.aej.2018.11.013>
- Solomon, G., & Adde, Y. A. (2020). Analytical Method To Calculate Room Cooling Load. *International Journal of Engineering Technologies and Management Research*, 7(8), 56–64. <https://doi.org/10.29121/ijetmr.v7.i8.2020.761>
- Stec, W. J., Van Paassen, A. H. C., & Maziarz, A. (2005). Modelling the double skin façade with plants. *Energy and Buildings*, 37(5), 419–427. <https://doi.org/10.1016/j.enbuild.2004.08.008>
- Susorova, I. (2015). Investigation on the Thermal Performance of Green Facade in Tropical Climate Based on the Modelling Experiment. In *Eco-efficient Materials for Mitigating Building Cooling Needs: Design, Properties and Applications*. Elsevier Ltd. <https://doi.org/10.1016/B978-1-78242-380-5.00005-4>
- Susorova, Irina, Azimi, P., & Stephens, B. (2014). The effects of climbing vegetation on the local microclimate, thermal performance, and air infiltration of four building facade orientations. *Building and Environment*, 76, 113–124. <https://doi.org/10.1016/j.buildenv.2014.03.011>
- Susorova, Irina, & Bahrami, P. (2013). Facade-integrated vegetation as an environmental sustainable solution for energy-efficient buildings. *MADE Journal of Cardiff University*.
- Widiastuti, R., Bramiana, C. N., Bangun, I. R. H., Prabowo, B. N., & Ramandhika, M. (2018). Vertical Greenery System as the Passive Design Strategy for Mitigating Urban Heat Island in Tropical Area: A Comparative Field Measurement between Green Facade and Green Wall. *IOP Conference Series: Earth and Environmental Science*, 213(1). <https://doi.org/10.1088/1755-1315/213/1/012037>
- Widiastuti, R., Caesarendra, W., Prianto, E., & Budi, W. S. (2018). Study on the leaves densities as parameter for effectiveness of energy transfer on the green facade. *Buildings*, 8(10), 8–13. <https://doi.org/10.3390/buildings8100138>
- Widiastuti, R., I R H, B., Faza R S, H., Novia B, C., Noor Prabowo, B., & Ramandhika, M. (2019). Modeling of Vertical Greenery System As Passive Design Strategy for Mitigating Indoor Temperature. *KnE Social Sciences*, 2019, 674–685. <https://doi.org/10.18502/kss.v3i21.5003>
- Widiastuti, R., Prianto, E., & Budi, W. S. (2018). Investigation on the Thermal Performance of Green Facade in Tropical Climate Based on the Modelling Experiment. *International Journal of Architecture, Engineering and Construction*, 7(1), 26–33. <https://doi.org/10.7492/ijaec.2018.004>
- Widiastuti, R., Zaini, J., & Caesarendra, W. (2020). Field measurement on the model of green facade systems and its effect to building indoor thermal comfort. *Measurement: Journal of the International Measurement Confederation*, 166, 108212. <https://doi.org/10.1016/j.measurement.2020.108212>
- Widiastuti, R., Zaini, J., Caesarendra, W., Kokogiannakis, G., & Binti Suhailian, S. N. N. (2022). Thermal insulation effect of green façades based on calculation of heat transfer and long wave infrared radiative exchange. *Measurement: Journal of the International Measurement Confederation*, 188(November 2021), 110555. <https://doi.org/10.1016/j.measurement.2021.110555>
- Wong, N. H., Kwang Tan, A. Y., Chen, Y., Sekar, K., Tan, P. Y., Chan, D., Chiang, K., & Wong, N. C. (2010). Thermal evaluation of vertical greenery systems for building walls. *Building and Environment*, 45(3), 663–672. <https://doi.org/10.1016/j.buildenv.2009.08.005>
- Wong, N. H., Tan, A. Y. K., Tan, P. Y., & Wong, N. C. (2009). Energy simulation of vertical greenery systems. *Energy and Buildings*, 41(12), 1401–1408. <https://doi.org/10.1016/j.enbuild.2009.08.010>
- Zhang, Y., Zhang, L., & Meng, Q. (2022a). Dynamic heat transfer model of vertical green façades and its co-simulation with a building energy modelling program in hot-summer/warm-winter zones. *Journal of Building Engineering*, 58(July), 105008. <https://doi.org/10.1016/j.job.2022.105008>
- Zhang, Y., Zhang, L., & Meng, Q. (2022b). Dynamic heat transfer model of vertical green façades and its co-simulation with a building energy modelling program in hot-summer/warm-winter zones. *Journal*



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**STUDI OTTV DAN DAYLIGHT PADA GREEN FACADE TERHADAP EFISIENSI ENERGI PENGHAWAAN
BANGUNAN DI JAKARTA**

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