



DAFTAR PUSTAKA

- Abass, F., & Ismail, L., & Abd Wahab, I., & Elgadi, A., & Malaysia, H., & Raja, P., & Pahat, B. (2020). Development of a Model for OTTV and RTTV based on BIMVPL to Optimize the Envelope Thermal Performance Development of a Model for OTTV and RTTV based on BIM- VPL to Optimize the Envelope Thermal Performance. IOP Conference Series Materials Science and Engineering. 713. 8. 10.1088/1757-899X/713/1/012009.
- Al-Homoud, M. (2005). A Sistematic Approach for the Thermal Design Optimization of Building Envelopes. Journal of Building Physics - J BUILD PHYS. 29. 95-119. 10.1177/1744259105056267.
- Al-Tamimi, NAM. (2011). Impact of building envelope modifications on the thermal performance of glazed high-rise residential buildings in the tropics. Malaysia: University Science Malaysia; 2011.
- Al-Tamimi, N. A., & Fadzil, S. F. (2011). The potential of shading devices for temperature reduction in high-rise residential buildings in the Tropics. *Procedia Engineering*, 21, 273-282. doi:10.1016/j.proeng.2011.11.2015
- Albatayneh, A. (2021). Sensitivity analysis optimisation of building envelope parameters in a sub-humid Mediterranean climate zone. Energy Exploration & Exploitation. 014459872110204. 10.1177/01445987211020432.
- Apuke, O. (2017). Quantitative Research Methods : A Synopsis Approach. Arabian Journal of Business and Management Review (kuwait Chapter).. 6. 40-47. 10.12816/0040336.
- Asahimas. (2022). e-Katalog Produk. <http://amfg.co.id/> (diakses pada 20 Mei, 2022)
- Autodesk Revit Library. (2022). <https://knowledge.autodesk.com> (diakses 20 Mei 2022)
- Badan Standardisasi Indonesia. (2020). SNI 6389:2020 *tentang Konservasi Energi Selubung Bangunan pada Bangunan Gedung*. Badan Standarisasi Nasional.
- Bahri, M. S., & Nugroho, A. M. (2018). Kinerja Termal Selubung Bangunan pada Gedung Kuliah Universitas Multimedia Nusantara Serpong.
- Carvalho, J., & Bragança, L., & Mateus, R. (2019). Optimising building sustainability assessment using BIM. Automation in Construction. 102. 170-182. 10.1016/j.autcon.2019.02.021.
- Cha, H.S & Kim, J. (2020). A study on 3D/BIM-based on-site performance measurement system for building construction. Journal of Asian Architecture and Building Engineering. 19. 1-12. 10.1080/13467581.2020.1763364.
- Charef, R., & Alaka, H., & Emmitt, S. (2018). Beyond the Third Dimension of BIM: A Sistematic Review of Literature and Assessment of Professional Views. Journal of Building Engineering. 19. 10.1016/j.jobe.2018.04.028.
- Dhaka, S., Mathur, J., & Garg, V. (2013). Effect of building envelope on thermal environmental conditions of a naturally ventilated building block in tropical climate. *Building Services Engineering Research and Technology*, 35(3), 280-295. doi:10.1177/0143624413490177



ANALISIS SENSITIVITAS ELEMEN DINDING SELUBUNG BANGUNAN TERHADAP OTTV DENGAN KALKULATOR BERBASIS KERANGKA KERJA BIM-VPL

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Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Eastman, C. M & Teicholz, P & Sacks, R & Liston, K & Handbook B. (2008). A Guide to Building Information Modeling for Owners, Managers, Architects, Engineers, Contractors, and Fabricators, John Wiley & Sons, Hoboken, NJ, USA.

El-Sherif, S. K. (2012). The Impact of Overhangs and Side-fins on Building Thermal Comfort, Visual Comfort and Energy Consumption in the Tropics. (pp. 1-178, Rep. No. SDBE-100119). Dubai, United Arab Emirates: The British University in Dubai. <http://bspace.buid.ac.ae/handle/1234/139>

Fallahtafti, R., & Mahdavinejad, M. (2015). Optimisation of building shape and orientation for better energy efficient architecture. International Journal of Energy Sector Management. 9. 593-618. 10.1108/IJESM-09-2014-0001.

Gimat, M.F. and Sulaiman, M.K. (2020) "Effect on thermal performance by different types of fixed sun shading devices," International Journal of Engineering and Advanced Technology, 9(3), pp. 3713–3718. Available at: <https://doi.org/10.35940/ijeat.c6298.029320>.

Gondal, I., & Masood, D. S., & Khurram, M. (2019). Role of passive design and alternative energy in building energy optimization. Indoor and Built Environment. 30. 1420326X1988748. 10.1177/1420326X19887486.

Green Building Council Indonesia. (2016). Greenship Rating Tools Untuk Gedung Terbangun Versi 1.1. Green Building Council Indonesia: Jakarta, Indonesia. pp. 1–15.

Grzyl, B., Miszewska-Urbańska, E., & Apollo, M. (2017). Building information modelling as an opportunity and risk for stakeholders involved in construction investment process. *Procedia Engineering*, 196, 1026–1033. <https://doi.org/10.1016/j.proeng.2017.08.045>

Habibi, S. (2017), "The promise of BIM for improving building performance", Energy and Buildings, Vol. 153, pp. 525-548.

Habibi, S. (2019). Improving building envelope performance with respect to thermal, sound insulation, and lighting: a case study. Building Acoustics. 26. 1351010X1987728. 10.1177/1351010X19877280.

Hajji, A & Hilmi, A. (2021). Façade design modification in complying the Indonesia's national standard of energy conservation for tall building envelope – Case study: Green Office Park 9, Serpong, Indonesia. IOP Conference Series: Earth and Environmental Science. 847. 012028. 10.1088/1755-1315/847/1/012028.

Hansford, M. (2011). New Civil Engineer: Future systems, New Civil Engineer(www.nce.co.uk), London, England.

Heiselberg, P., Brohus, H., Hesselholt, A., Rasmussen, H., Seinre, E., & Thomas, S. (2009). Application of sensitivity analysis in design of Sustainable Buildings. *Renewable Energy*, 34(9), 2030–2036. <https://doi.org/10.1016/j.renene.2009.02.016>

Hien, W. N., & Istiadji, A. D. (2003). Effects Of External Shading Devices On Daylighting And Natural Ventilation. *Building Simulation*, 475-482.



ANALISIS SENSITIVITAS ELEMEN DINDING SELUBUNG BANGUNAN TERHADAP OTTV DENGAN KALKULATOR BERBASIS KERANGKA KERJA BIM-VPL

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Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Ilhan, Bahriye & Yaman, Hakan. (2016). Green building assessment tool (GBAT) for integrated BIM-based design decisions. *Automation in Construction.* 70. 10.1016/j.autcon.2016.05.001.

Kaoula, D. & Bouchair, A. (2017). Evaluation of environmental impacts of hotel buildings having different envelopes using a life cycle analysis approach. *Indoor and Built Environment.* 1420326X1668323. 10.1177/1420326X16683235.

Kassem, M., & Brogden, T., & Dawood, N. (2012). BIM and 4D planning: a holistic study of the barriers and drivers to widespread adoption. *Journal of Construction Engineering and Project Management.* 2. 10.6106/JCEPM.2012.2.4.001.

Koenigshberger, O. H., Ingersoll, T. G., Mayhew, A., & Szokolay, S. V. (2010). *Manual of Tropical Housing and Building: Climatic Design.* Universities Press.

Kültür, S.; Türkeri, N.; Knaack, U. (2019) A Holistic Decision Support Tool for Facade Design. *Buildings,* 9, 186.

Kumar, G. & Raheja, G. (2016). Design Determinants of Building Envelope for Sustainable Built Environment: A Review. *International Journal of Built Environment and Sustainability.* 3. 10.11113/ijbes.v3.n2.127.

Kusumawati, M. L. & Setyowati, E. & Purnomo, A. (2021). Practical-Empirical Modeling on Envelope Design towards Sustainability in Tropical Architecture. *Sustainability.* 13. 2959. 10.3390/su13052959.

Latifah, N., & Rahadian, E. (2020). Energy Saving Building Strategies through The Application of Solar Control Glass. *ELKOMIKA: Jurnal Teknik Energi Elektrik, Teknik Telekomunikasi, & Teknik Elektronika,* 8(2), 388. doi:<https://doi.org/10.26760/elkomika.v8i2.388>

Lartigue, B. & Lasternas, B. & Loftness, V. (2014). Multi-objective optimization of building envelope for energy consumption and daylight. *Indoor and Built Environment.* 23. 70-80. 10.1177/1420326X13480224.

Liebich, T. (2002). Standard analysis — Current AEC situation — Building Models, European network for product and project data exchange, e-work and e-business in Architecture, Engineering and Construction, IST — 2001–32035, January 2002.

Lim, Y.-W., Seghier, T. E., Harun, M. F., Ahmad, M. H., Samah, A. A., & Majid, H. A. (2019). Computational BIM for building envelope sustainability optimization. *MATEC Web of Conferences,* 278, 04001. <https://doi.org/10.1051/matecconf/201927804001>

Loekita, S., & Priyatman, J. (2015). OTTV (SNI 03-6389-2011) and ETTV (BCA 2008) Calculation for Various Building's Shapes, Orientations, Envelope Building Materials: Comparison and Analysis. *Civil Engineering Dimension,* 17(2), 108-116. <https://doi.org/10.9744/ced.17.2.108-116>

M.C. Lee, K.W. Mui, L.T. Wong, W.Y. Chan, E.W.M. Lee, C.T. Cheung, (2011). Student learning performance and indoor environmental quality (IEQ) in air-conditioned university teaching rooms, *Build. Environ.* 49. 238–244. doi:[10.1016/j.buildenv.2011.10.001](https://doi.org/10.1016/j.buildenv.2011.10.001).

McCluney, R. (1991) The Death of the Shading Coefficient? *ASHRAE J.* 33, 36–45



ANALISIS SENSITIVITAS ELEMEN DINDING SELUBUNG BANGUNAN TERHADAP OTTV DENGAN KALKULATOR BERBASIS KERANGKA KERJA BIM-VPL

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Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Mirrahimi, S., Mohamed, M. F., Haw, L. C., Ibrahim, N. L., Yusoff, W. F., & Aflaki, A. (2016).

The effect of building envelope on the thermal comfort and energy saving for high-rise buildings in hot-humid climate. *Renewable and Sustainable Energy Reviews*, 53, 1508–1519. <https://doi.org/10.1016/j.rser.2015.09.055>

Mwasha, A., Williams, R., Iwaro, J., (2011), “Modeling the performance of residential building envelope; The role of sustainable energy performance indicators”, *Energy Buildings* 43, hal.2108–2117

Mushtaha, E., Salameh, T., Kharrufa, S., Mori, T., Aldawoud, A., Hamad, R., & Nemer, T. (2021). The impact of passive design strategies on cooling loads of buildings in temperate climate. *Case Studies in Thermal Engineering*, 28, 101588. <https://doi.org/10.1016/j.csite.2021.101588>

Nadiar, F. & Nusantara, D. (2021). Shady residency: Passive technologies through shading devices for some building styles to fix heat problem causes by climate change in a tropical area. *IOP Conference Series: Materials Science and Engineering*. 1098. 022029. [10.1088/1757-899X/1098/2/022029](https://doi.org/10.1088/1757-899X/1098/2/022029).

Nicał, A., & Wodyński, W. (2016). Enhancing Facility Management through BIM 6D. *Procedia Engineering*. 164. 299-306. [10.1016/j.proeng.2016.11.623](https://doi.org/10.1016/j.proeng.2016.11.623).

Nico, M.A., Liuzzi, S., Stefanizzi, P., (2015). Evaluation of thermal comfort in university classrooms through objective approach and subjective preference analysis, *Appl. Ergon.* 48 111–120. doi:[10.1016/j.apergo.2014.11.013](https://doi.org/10.1016/j.apergo.2014.11.013)

Octarino, C. N., & Feriadi, H. (2021). Evaluasi Kinerja Selubung Bangunan Gedung Agape Universitas Kristen Duta Wacana Yogyakarta. *Langkau Betang: Jurnal Arsitektur*, 8(2), 86. Doi:[10.26418/Lantang.V8i2.45436](https://doi.org/10.26418/Lantang.V8i2.45436)

Oral, G. K, Yener, A. K, and Bayazit, N. T. (2004). Building Envelope Design with the Objective to Ensure Thermal, Visual and Acoustic Comfort Conditions. *Building and Environment*, 39: 281 – 287.

Pacevič, R. & Kačeniauskas, A. (2017). The Development Of Visit Visualization Service In Openstack Cloud Infrastructure. *Advances In Engineering Software*. Volume 103. Pages 46-56. ISSN 0965-9978. doi:[10.1016/j.advengsoft.2016.06.01](https://doi.org/10.1016/j.advengsoft.2016.06.01)

Paryudi, I., Fenz, S., & Tjoa, A.M. (2013). Study on Indonesian Overall Thermal Transfer Value (OTTV) Standard.

Pathirana, S., Rodrigo, A & Halwatura, R. (2019). Effect of building shape, orientation, window to wall ratios and zones on energy efficiency and thermal comfort of naturally ventilated houses in tropical climate. *International Journal of Energy and Environmental Engineering*. 10. [10.1007/s40095-018-0295-3](https://doi.org/10.1007/s40095-018-0295-3).

Piaseckienė, G. (2022). Dimensions of BIM in literature: review and analysis. *Mokslo – Lietuvos Ateitis / Science – Future of Lithuania*, 14. <https://doi.org/10.3846/mla.2022.16071>

Pokorska-Silva, I & Nowoświat, A & Fedorowicz, L. (2019). Identification of thermal parameters of a building envelope based on the cooling process of a building object. *Journal of Building Physics*. 43. [10.1177/1744259119881167](https://doi.org/10.1177/174425911988116).



ANALISIS SENSITIVITAS ELEMEN DINDING SELUBUNG BANGUNAN TERHADAP OTTV DENGAN KALKULATOR BERBASIS KERANGKA KERJA BIM-VPL

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Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Prasetio, H. & Euodia, K. & Purwanto, W. (2019). Techno-economic analysis of a combined cooling, heating and power sistem based on hot sedimentary aquifer for hotel building in tropical countries. MATEC Web of Conferences. 268. 06006. 10.1051/matecconf/201926806006.

Sani, A. & Matondang, A. & Kurniawan, G. & Mardiyanto, A. (2019). Kinerja Termal Selubung Gedung Kuliah Kota Bandar Lampung ITERA. Jurnal Arsitektur ARCADE. 3. 267. 10.31848/Arcade.V3i3.303.

Sari, L. H., & Era N. R. (2021). "An Evaluation of Shading Device in Tropics Utilising the Sun-Path Diagram". ARTEKS : Jurnal Teknik Arsitektur 6 (3), 373-82. <https://doi.org/10.30822/arteks.v6i3.877>.

Sattineni, A., & Macdonald, J. (2014). 5D BIM: A Case Study of an Implementation Strategy in the Construction Industry. 10.22260/ISARC2014/0048.

Seghier, Taki & Lim, Yaik-Wah & Ahmad, Mohd & Williams, Opeyemi. (2017). Building Envelope Thermal Performance Assessment Using Visual Programming and BIM, based on ETTV requirement of Green Mark and GreenRE. International Journal of Built Environment and Sustainability. 4. 10.11113/ijbes.v4.n3.216.

Sidebotham, G. (2015). Heat Transfer Modes: Conduction, Convection, and Radiation. 10.1007/978-3-319-14514-3_3.

Singhpoo, C., Punnucharoenwong, N., & Benjapiyaporn, C. (2015). Study of the effect of temperature differences on the overall thermal transfer value of buildings. *Energy Procedia*, 79, 348–353. <https://doi.org/10.1016/j.egypro.2015.11.501>

Smith, P. (2016). Project Cost Management with 5D BIM. Procedia - Social and Behavioral Sciences. 226. 193-200. 10.1016/j.sbspro.2016.06.179.

Soegijanto. (1999). Bangunan di Indonesia dengan Iklim Tropis Lembab Ditinjau dari Aspek Fisika Bangunan. Jakarta: Direktorat Jenderal Pendidikan Tinggi Departemen Pendidikan dan Kebudayaan.

Thomas, R, (2002). Environmental Design – An Introduction for Architects and Engineers. Third Edition, Taylor & Francis group, New York.

Tong, S., Wen, J., Wong, N. H., & Tan, E. (2021). Impact of façade design on indoor air temperatures and cooling loads in residential buildings in the tropical climate. *Energy and Buildings*, 243, 110972. doi:10.1016/j.enbuild.2021.110972

U.S. Department of Energy. (2004). *Energy Design Guidelines for High Performance School: Tropical Island Climates*.

Viana, V.L.B.; Carvalho, M.T.M. (2021). Prioritization of risks related to BIM implementation in brazilian public agencies using fuzzy logic. *J. Build. Eng.*

VšĮ Skaitmeninė Statyba. (2017). BIM terminų žodyno santrauka. BIM dokumentai. <https://skaitmeninestatyba.lt/dokumentai/>

Wang, Z. & Liu, J. (2020). A Seven-Dimensional Building Information Model for the Improvement of Construction Efficiency, Advances in Civil Engineering, vol. 2020, Article ID 8842475, 17 pages, 2020. <https://doi.org/10.1155/2020/8842475>



ANALISIS SENSITIVITAS ELEMEN DINDING SELUBUNG BANGUNAN TERHADAP OTTV DENGAN KALKULATOR BERBASIS KERANGKA KERJA BIM-VPL

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Wang, L. & Nyuk, H. W. & Li, S. (2007). Facade design optimization for naturally ventilated residential buildings in Singapore. *Energy and Buildings*. Volume 39 Issue 8. Pages 954-961. <https://doi.org/10.1016/j.enbuild.2006.10.011>.

Wang, J. C. (2016). A study on the energy performance of school buildings in Taiwan. *Energy and Buildings* 133, 810-822.

Widhayaka, S. & Rilatupa, J. (2021). Optimalisasi Kinerja Termal Selubung Bangunan Unit Hunian Di Rusunawa Cibesut Jakarta Timur. Modul. 21. 43-50. 10.14710/Mdl.21.1.2021.43-50.

Zahiri, S & Altan, H. (2016). The Effect of Passive Design Strategies on Thermal Performance of Female Secondary School Buildings during Warm Season in a Hot and Dry Climate. *Frontiers in Built Environment*. 2. 10.3389/fbuil.2016.00003.

Zhang, Y., Long, E., Li, Y., & Li, P. (2017). Solar radiation reflective coating material on building envelopes: Heat transfer analysis and cooling energy saving. *Energy Exploration & Exploitation*, 35(6), 748–766. <https://doi.org/10.1177/0144598717716285>