UNIVERSITAS
GADJAH MADA
Optimasi Waste Baja Tulangan Berbasis BIM Cubicost, First Fit Decreasing, dan Cutting Optimization Pro (Studi Kasus: Proyek The Aloon-Aloon)
Dimas Apta Adiyatma, Ir. Tantri Nastiti Handayani, S.T., M.Eng., Ph.D., IPM.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

'Abidah, G., & Wiguna, I. P. A. (2023). Perbandingan Kombinasi Pemotongan Pembesian dengan Metode Manual Bar Bending Schedule dan Tekla Structures. *Jurnal Teknik ITS*, *12*(2). https://doi.org/10.12962/j23373539.v12i2.112943

Akinade, O. O., Oyedele, L. O., Bilal, M., Ajayi, S. O., Owolabi, H. A., Alaka, H. A., & Bello, S. A. (2015). Waste minimisation through deconstruction: A BIM based Deconstructability Assessment Score (BIM-DAS). *Resources, Conservation and Recycling*, *105*, 167–176. https://doi.org/10.1016/j.resconrec.2015.10.018

Al-Zubaidy, D. S. S., Dawood, S. Q., & Khalaf, I. D. (2016). Optimal Utilization of Rebar Stock for Cutting Processes in Housing Project. *Iarjset*, *3*(5), 189–193. https://doi.org/10.17148/iarjset.2016.3639

Alwan, Z., Nawarathna, A., Ayman, R., Zhu, M., & ElGhazi, Y. (2021). Framework for parametric assessment of operational and embodied energy impacts utilising BIM. *Journal of Building Engineering*, *42*. https://doi.org/10.1016/j.jobe.2021.102768

Arfianti, A., Sangadji, F. A., & Taihuttu, F. (2025). Analisis Faktor-Faktor Penerapan Building Information Modeling (Bim) Di Proyek Konstruksi Kota Ambon. *Jurnal Simetrik*, *15*(2), 204–211. https://doi.org/10.31959/js.v15i2.3616

Aryani Ahmad Latiffi, Juliana Brahim, Suzila Mohd, & Mohamad Syazli Fathi. (2015). Building Information Modeling (BIM): Exploring Level of Development (LOD) in Construction Projects. *Applied Mechanics and Materials*, *773–774*, 933–937. https://www.scientific.net/AMM.773-774.933.pdf

Asnudin, A. (2010). Pengendalian Sisa Material Konstruksi Pada Pembangunan Rumah Tinggal. *Jurnal Mekanika Teknik*, *12*(3), 162–164.

Bastari, M. A. D., Husni, H. R., Bayzoni, B., & Ashruri, A. (2024). Analisis Waste Material Tulangan Pelat Menggunakan Building Information Modeling (BIM) Pada Proyek Pembangunan SMPN 41 Bandar Lampung. *Jurnal Rekayasa Sipil Dan Desain*, *12*(1), 65–76. https://doi.org/10.23960/jrsdd.v12i1.4481

Benjaoran, V., & Bhokha, S. (2013). Trim Loss Minimization for Construction Reinforcement

UNIVERSITAS
GADJAH MADA
Optimasi Waste Baja Tulangan Berbasis BIM Cubicost, First Fit Decreasing, dan Cutting Optimization Pro (Studi Kasus: Proyek The Aloon-Aloon)
Dimas Apta Adiyatma, Ir. Tantri Nastiti Handayani, S.T., M.Eng., Ph.D., IPM.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Steel with Oversupply Constraints. *Journal of Advanced Management Science*, 313–316. https://doi.org/10.12720/joams.1.3.313-316

Carvalho, J. P., Bragança, L., & Mateus, R. (2021). Sustainable building design: Analysing the feasibility of BIM platforms to support practical building sustainability assessment. *Computers in Industry*, *127*. https://doi.org/10.1016/j.compind.2021.103400

Chaise, E. Q., Lians, K. S., & Alifen, R. S. (2020). Analisa Sisa Material Pada Pekerjaan Struktur Konstruksi Beton Bertulang. *Jurnal Dimensi Pratama Teknik Sipil*, *9*(2), 78–85.

Chong, H.-Y., Lee, C.-Y., & Wang, X. (2017). A mixed review of the adoption of Building Information Modelling (BIM) for sustainability. *Journal of Cleaner Production*, *142*, 4114–4126. https://doi.org/10.1016/j.jclepro.2016.09.222

Dharmawansyah, D., Eti Kurniati, & Aziz, A. K. (2023). Penggunaan Metode Bar Bending Schedule Untuk Menganalisis Kebutuhan & Sisa (Waste) Pembesian Balok Pada Proyek Rumah Sakit Islam Aysha. *Jurnal TAMBORA*, *7*(2), 67–71. https://doi.org/10.36761/jt.v7i2.3058

Dipohusodo, I. (1996). Manajemen Proyek dan Konstruksi jilid 1 dan jilid 2. In *Kanisius Jakarta*.

Ebtha Yuni, N. K. S., Yuliana, N. P. I., & Sudiarta, I. K. (2023). Analisa waste material besi dalam upaya pengendalian sisa material konstruksi. *Jurnal Teknik Sipil Terapan*, *5*(1), 22. https://doi.org/10.47600/jtst.v5i1.561

Fernández-Mora, V., Navarro, I. J., & Yepes, V. (2025). Structural damage index evaluation in BIM environments. *Structures*, *74*, 108544. https://doi.org/10.1016/j.istruc.2025.108544

Ghorbani, S., Ghorbany, S., & Noorzai, E. (2025). Development of a data-driven framework to predict waste generation and evaluate influential factors: Machine learning innovations in construction waste management. *Cleaner Waste Systems*, *11*, 100299. https://doi.org/10.1016/j.clwas.2025.100299

Hasan, R., Rakib, M. F. H., & Rahman, M. (2022). Quantification of Construction Waste through BIM. *Journal of Technology Management and Business*, *9*(1). https://doi.org/10.30880/jtmb.2022.09.01.007

Optimasi Waste Baja Tulangan Berbasis BIM Cubicost, First Fit Decreasing, dan Cutting Optimization Pro (Studi Kasus: Proyek The Aloon-Aloon)
Dimas Apta Adiyatma, Ir. Tantri Nastiti Handayani, S.T., M.Eng., Ph.D., IPM.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

I Gusti Putu Adi Suartika Putra, G A. P. Candra Dharmayanti, & A. A. Diah Parami Dewi. (2018). Penanganan Waste Material Pada Proyek Konstruksi Gedung Bertingkat. *Jurnal Spektran*, *6*(2), 176–185. http://ojs.unud.ac.id/index.php/jsn/index

Jagad, S. A., & Putra, I. N. D. P. (2024). Analysis of Waste Levels of Column Reinforcement Work Planning with Cutting Optimization Software. *COGITO Smart Journal*, *10*(2).

Joblot, L., Danjou, C., Pellerin, R., & Lamouri, S. (2021). Industry 4.0 and BIM: Do They Share the Same Objectives? *Lecture Notes in Mechanical Engineering*, 412–418. https://doi.org/10.1007/978-3-030-70566-4_65

Jr, E. C., Garey, M. R., & Johnson, D. (1996). Approximation algorithms for bin packing: A survey. *Approximation Algorithms for ...*, (m), 1–53. http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:APPROXIMATION+ALGORITHMS+FOR+BIN+PACKING+:+A+SURVEY#0%5Cnhttp://dl.acm.org/citation.cfm?id=241940

Kurniawan, D., & Ujianto, M. (2023). Optimasi perhitungan kebutuhan tulangan dan tulangan sisa (waste) shear wall menggunakan software cutting optimization pro pada proyek pembangunan gedung mrt jakarta. *Prosiding Seminar Nasional Teknik Sipil*, 610–617.

Liu, S., Meng, X., & Tam, C. (2015). Building information modeling based building design optimization for sustainability. *Energy and Buildings*, *105*, 139–153. https://doi.org/10.1016/j.enbuild.2015.06.037

Lu, W., Fung, A., Peng, Y., Liang, C., & Rowlinson, S. (2014). Cost-benefit analysis of Building Information Modeling implementation in building projects through demystification of time-effort distribution curves. *Building and Environment*, *82*, 317–327. https://doi.org/10.1016/j.buildenv.2014.08.030

Marzouk, M., & Azab, S. (2014). Environmental and economic impact assessment of construction and demolition waste disposal using system dynamics. *Resources, Conservation and Recycling*, *82*, 41–49. https://doi.org/10.1016/j.resconrec.2013.10.015

Meshref, A. N., Elkasaby, El. A. F. A., & Abdel Kader Mohamed Farid, A. (2023). Reducing construction waste in the construction life cycle of industrial projects during design phase by using system dynamics. *Journal of Building Engineering*, *69*, 106302.

UNIVERSITAS
GADJAH MADA
Optimasi Waste Baja Tulangan Berbasis BIM Cubicost, First Fit Decreasing, dan Cutting Optimization Pro (Studi Kasus: Proyek The Aloon-Aloon)
Dimas Apta Adiyatma, Ir. Tantri Nastiti Handayani, S.T., M.Eng., Ph.D., IPM.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

https://doi.org/10.1016/j.jobe.2023.106302

Muka, I. W., Widyatmika, M. A., & Antara, I. M. N. (2020). ANALISIS PERBANDINGAN WASTE BESI TULANGAN METODE KONVENSIONAL DENGAN SOFTWARE CUTTING OPTIMAZATION PRO. *Teknika*, *15*(2), 41–49. https://doi.org/10.26623/teknika.v15i2.2852

Nasautama S, & Sitompul M. (2022). Analisis Kebutuhan Tulangan dan Tulangan Sisa (Waste) Pekerjaan Struktur Kolom, Balok dan Pelat Lantai Proyek Pembangunan Pasar Baru Kabupaten Mandailing Natal. *Jurnal Teknik Sipil*, *14*(2), 75–82.

Negara, J. B. (2019). Analisis Sisa Material Besi Tulangan pada Proyek Konstruksi Bangunan Gedung. *Rekayasa Teknik Sipil*, *7*(4), 1–11.

Partama, I. G. N. E., Sudika, I. G. M., & Saputra, E. L. B. (2023). Analisis ANALISIS SISA BESI TULANGAN MENGGUNAKAN SOFTWARE CUTTING OPTIMIZATION PRO PADA KONSTRUKSI GEDUNG. *Jurnal Teknik Gradien*, *15*(02), 30–38. https://doi.org/10.47329/teknik_gradien.v15i02.1075

Permadi, A. (2025). *ANALISIS PERBANDINGAN PERHITUNGAN WASTE MATERIAL BETON BERTULANG MENGGUNAKAN METODE BIM 5D APLIKASI CUBICOST DAN METODE KONVENSIONAL PADA PROYEK RUMAH SAKIT EKA HOSPITAL JUANDA*.

Putri, S. O., & Firmansyah. (2020). The Efficiency of Steel Material as Buildings Construction. *IOP Conference Series: Materials Science and Engineering*, *879*(1). https://doi.org/10.1088/1757-899X/879/1/012148

Ratnaningsih, A., Rahma, A. F., & Soetjipto, J. W. (2026). *Optimasi Penggunaan Besi Tulangan terhadap Waste Material Menggunakan Software Cutting Optimization Pro pada Proyek Bangunan Gedung terbuang tanpa dimanfaatkan , sehingga menimbulkan selisih antara anggaran Optimization Pro (SCOP) yang digunakan untuk m*. *16*(01), 36–50.

Reinertsen, H., & Vossen, T. W. M. (2010). The one-dimensional cutting stock problem with due dates. *European Journal of Operational Research*, *201*(3), 701–711. https://doi.org/10.1016/j.ejor.2009.03.042

Optimasi Waste Baja Tulangan Berbasis BIM Cubicost, First Fit Decreasing, dan Cutting Optimization Pro (Studi Kasus: Proyek The Aloon-Aloon)
Dimas Apta Adiyatma, Ir. Tantri Nastiti Handayani, S.T., M.Eng., Ph.D., IPM.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Rizqi Rahayu, & Priyo Suseno, D. (2023). Analisis Perbandingan Quantity Take Off Menggunakan BIM Glodon Cubicost dengan Microsoft Excel. *Jurnal Teknik Sipil*, *16*(2), 1–15. https://doi.org/10.56444/jts.v16i2.1220

Shiha, A., & Dorra, E. M. (2023). Resilience Index Framework for the Construction Industry in Developing Countries. *Journal of Construction Engineering and Management*, *149*(4). https://doi.org/10.1061/JCEMD4.COENG-12942

Shrivastava, A., Chaurasia, D., & Saxena, S. (2017). Parameters for assessing a building project within the purview of constructability. In *Advances in Intelligent Systems and Computing* (Vol. 498). https://doi.org/10.1007/978-3-319-42070-7_109

Silaban, M. E., & Pamungkas, A. H. (2023). ANALISIS WASTE MATERIAL MENGGUNAKAN FAULT TREE ANALYSIS PADA PEKERJAAN CONCRETE BARRIER. *Technologic*, *14*(2). https://doi.org/10.52453/t.v14i2.363

SNI 2052:2017. (2017). Sni 2052:2017. In *Badan Standarisasi Nasional*. www.bsn.go.id

Suryanto Intan, Ratna S Alifen, & Lie S Arijanto. (2005). Analisa Dan Evaluasi Sisa Material Konstruksi Sumber Penyebab Kuantitas Dan Biaya. *Civil Engineering Dimension*, *7*(1), 36–45. http://puslit2.petra.ac.id/ejournal/index.php/civ/article/view/16124

Tafesse, S., Girma, Y. E., & Dessalegn, E. (2022). Analysis of the socio-economic and environmental impacts of construction waste and management practices. *Heliyon*, *8*(3), e09169. https://doi.org/10.1016/j.heliyon.2022.e09169

Udawatta, N., Zuo, J., Chiveralls, K., & Zillante, G. (2015). Improving waste management in construction projects: An Australian study. *Resources, Conservation and Recycling*, *101*, 73–83. https://doi.org/10.1016/j.resconrec.2015.05.003

Wibawa, C., & Tri Anggraeni, D. (2026). Implementasi Algoritma First Fit Decreasing (FFD) Pada Perhitungan Cutting Plan Material Berbasis Panjang (Studi Kasus PT Bukaka Teknik Utama). *EXPERT: Jurnal Manajemen Sistem Informasi Dan Teknologi*, *15*(2), 243. https://doi.org/10.36448/expert.v15i2.4623

Xia, B., & Tan, Z. (2010). Tighter bounds of the First Fit algorithm for the bin-packing problem. *Discrete Applied Mathematics*, *158*(15), 1668–1675. https://doi.org/10.1016/j.dam.2010.05.026

UNIVERSITAS
GADJAH MADA
Optimasi Waste Baja Tulangan Berbasis BIM Cubicost, First Fit Decreasing, dan Cutting Optimization Pro (Studi Kasus: Proyek The Aloon-Aloon)
Dimas Apta Adiyatma, Ir. Tantri Nastiti Handayani, S.T., M.Eng., Ph.D., IPM.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Zea Escamilla, E., Habert, G., & Wohlmuth, E. (2016). When CO2 counts: Sustainability assessment of industrialized bamboo as an alternative for social housing programs in the Philippines. *Building and Environment*, *103*, 44–53. https://doi.org/10.1016/j.buildenv.2016.04.003

Zou, Y., Kiviniemi, A., & Jones, S. W. (2017). A review of risk management through BIM and BIM-related technologies. *Safety Science*, *97*, 88–98. https://doi.org/10.1016/j.ssci.2015.12.027