

9 REFERENCES

- [1] M. Lawson, R. Ogden, and C. Goodier, *Design in Modular Construction*. CRC Press, 2014.
- [2] H. T. Thai, T. Ngo, and B. Uy, "A review on modular construction for high-rise buildings," *Structures*, vol. 28, pp. 1265–1290, 2020, doi: 10.1016/j.istruc.2020.09.070.
- [3] J. Y. R. Liew, Y. S. Chua, and Z. Dai, "Steel concrete composite systems for modular construction of high-rise buildings," *Structures*, vol. 21, pp. 135–149, 2019, doi: 10.1016/j.istruc.2019.02.010.
- [4] K. T. Q. Nguyen, S. Navaratnam, P. Mendis, K. Zhang, J. Barnett, and H. Wang, "Fire safety of composites in prefabricated buildings: From fibre reinforced polymer to textile reinforced concrete," *Composites Part B: Engineering*, vol. 187, pp. 107815–107815, 2020, doi: 10.1016/j.compositesb.2020.107815.
- [5] S. English and B. Brown, "An Introduction to Steel and Concrete Modular Construction," in *1st Residential Building Design & Construction Conference*, 2013, pp. 326–333.
- [6] W. Ferdous, Y. Bai, T. D. Ngo, A. Manalo, and P. Mendis, "New advancements, challenges and opportunities of multi-storey modular buildings – A state-of-the-art review," in *Engineering Structures* vol. 183, ed: Elsevier Ltd, 2019, pp. 883–893.
- [7] "Modular construction." SteelConstruction.info. https://www.steelconstruction.info/Modular_construction (accessed 2021).
- [8] M. J. Hough and R. M. Lawson, "Design and construction of high-rise modular buildings based on recent projects," *Proceedings of the Institution of Civil Engineers - Civil Engineering*, vol. 172, no. 6, pp. 37–44, 2019, doi: 10.1680/jcien.18.00058.
- [9] A. W. Lacey, W. Chen, H. Hao, and K. Bi, "Structural response of modular buildings – An overview," *Journal of Building Engineering*, vol. 16, pp. 45–56, 2018, doi: 10.1016/j.jobbe.2017.12.008.
- [10] N. Bertram, S. Fuchs, J. Mischke, R. Palter, G. Strube, and J. Woetzel, "Modular construction: From projects to products," 2019.
- [11] E. Generalova, V. Generalov, and A. Kuznetsova, "Modular Buildings in Modern Construction," in *Procedia Engineering*, 2016, vol. 153: Elsevier Ltd, pp. 167–172, doi: 10.1016/j.proeng.2016.08.098.
- [12] S. Mills, D. Grove, and M. Egan, "Breaking the pre-fabricated ceiling: Challenging the limits for modular high-rise," in *CTBUH International Conference*, 2015, pp. 416–425.
- [13] R. Lawson, R. Ogden, and R. Bergin, "Application of Modular Construction in High-Rise Buildings," *Journal of Architectural Engineering*, vol. 18, no. 2, pp. 148–154, 2012, doi: 10.1061/(asce)ae.1943-5568.0000057.

- [14] L. Aye, T. Ngo, R. Crawford, R. Gammampila, and P. Mendis, "Life cycle greenhouse gas emissions and energy analysis of prefabricated reusable building modules," *Energy and Buildings*, vol. 47, pp. 159–168, 2012.
- [15] "Markets and Markets." <https://www.marketsandmarkets.com/Market-Reports/modular-construction-market-11812894.html> (accessed 2026).
- [16] M. M. A Khalfan and T. Maqsood, "Current State of Off-Site Manufacturing in Australian and Chinese Residential Construction," 2014, doi: 10.1155/2014/164863.
- [17] S. Navaratnam, T. Ngo, T. Gunawardena, and D. Henderson, "Performance review of prefabricated building systems and future research in Australia," in *Buildings* vol. 9, ed: MDPI AG, 2019.
- [18] B. G. Hwang, M. Shan, and K. Y. Looi, "Key constraints and mitigation strategies for prefabricated prefinished volumetric construction," *Journal of Cleaner Production*, vol. 183, pp. 183–193, 2018, doi: 10.1016/j.jclepro.2018.02.136.
- [19] A. Abdul Rahim and S. Latif Qureshi, "Journal of the Malaysian Institute of Planners," vol. 16, pp. 323–333, 2018.
- [20] X. Zhang, M. Skitmore, and Y. Peng, "Exploring the challenges to industrialized residential building in China," *Habitat International*, vol. 41, pp. 176–184, 2014, doi: 10.1016/j.habitatint.2013.08.005.
- [21] J. O. Choi, X. B. Chen, and T. W. Kim, "Opportunities and challenges of modular methods in dense urban environment," *International Journal of Construction Management*, vol. 19, no. 2, pp. 93–105, 2019, doi: 10.1080/15623599.2017.1382093.
- [22] Z. Xu, T. Zayed, and Y. Niu, "Comparative analysis of modular construction practices in mainland China, Hong Kong and Singapore," *Journal of Cleaner Production*, vol. 245, pp. 118861–118861, 2020, doi: 10.1016/J.JCLEPRO.2019.118861.
- [23] M. Alembagheri, P. Sharafi, R. Hajirezaei, and B. Samali, "Collapse capacity of modular steel buildings subject to module loss scenarios: The role of inter-module connections," *Engineering Structures*, vol. 210, 2020, doi: 10.1016/j.engstruct.2020.110373.
- [24] E. Bergroth and G. Torstensson, "Temperature distribution in air tight cavities of steel framed modular buildings when exposed to fire," Bachelor Level, Department of Civil, Environmental and Natural Resources Engineering, Luleå University of Technology, 2019. [Online]. Available: <https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1296917&dsid=-4757>
- [25] A. Just, D. Brandon, and B. Ostman, "Fire Stops in buildings," Stockholm, 2018. [Online]. Available: <https://www.brandskyddsforeningen.se/globalassets/brandforsk/fire-stops.pdf>
- [26] M. Gorgolewski, P. J. Grubb, R. M. Lawson, and S. C. I. Britain, *Modular construction using light steel framing : design of residential buildings*. Steel Construction Institute, 2001, pp. 100–100.

- [27] K. Gallagher. "Modular Construction: Hidden Hazards Within." <https://www.fireengineering.com/fire-prevention-protection/modular-construction-hidden-hazards-within/#gref> (accessed 2021).
- [28] K. Gallagher. "The Dangers of Modular Construction." <https://www.fireengineering.com/firefighting/the-dangers-of-modular-construction/#gref> (accessed 2021).
- [29] A. Just and D. Brandon, "Fire Stops in Buildings," 2017. [Online]. Available: <https://www.diva-portal.org/smash/get/diva2:1160569/FULLTEXT01.pdf>
- [30] P. Apps. "Are two fires on the Shetland Islands a canary in the coal mine for modular construction?" <https://www.insidehousing.co.uk/news/news/hotel-destroyed-in-fire-was-constructed-offsite-using-insulated-panels-documents-show-67428> (accessed 2021).
- [31] B. B. C. News. "Shetland fires 'should act as warning to modular building industry'." <https://www.bbc.com/news/uk-scotland-north-east-orkney-shetland-57942459> (accessed 2021).
- [32] C. Cope and H. Marter. "Investigation underway after huge fire destroys." <https://www.shetnews.co.uk/2020/07/27/investigation-underway-after-huge-fire-destroys-moorfield-hotel/> (accessed 2021).
- [33] E. K. Asimakopoulou, D. I. Kolaitis, and M. A. Founti, "Performance of a ventilated-façade system under fire conditions: An experimental investigation," *Fire and Materials*, vol. 44, no. 6, pp. 776–792, 2020, doi: 10.1002/fam.2863.
- [34] W. An, X. Yin, S. Chen, and G. Zhang, "Study on downward flame spread over extruded polystyrene foam in a vertical channel: Influence of opening area," *Fire and Materials*, vol. 43, no. 2, pp. 153–161, 2019, doi: 10.1002/fam.2678.
- [35] A. Čolić and I. B. Pečur, "Influence of Horizontal and Vertical Barriers on Fire Development for Ventilated Façades," *Fire Technology*, vol. 56, no. 4, pp. 1725–1754, 2020, doi: 10.1007/s10694-020-00950-w.
- [36] D. Comiskey and K. Wilson, "A performance barrier? Cavity barrier installation in wall envelope makeups," in *ARCOM 2020 - Association of Researchers in Construction Management, 36th Annual Conference 2020 - Proceedings*, 2020: Association of Researchers in Construction Management, pp. 205–214.
- [37] M. D. Hossain, M. K. Hassan, A. C. Y. Yuen, Y. He, S. Saha, and W. Hittini, "Flame behaviour, fire hazard and fire testing approach for lightweight composite claddings – a review," *Journal of Structural Fire Engineering*, vol. 12, no. 3, pp. 257–292, 2021, doi: 10.1108/JSFE-09-2020-0027.
- [38] "Grenfell Tower Inquiry: Phase 1 Report - Vol. 4," 9781528616218, 2019. [Online]. Available: www.gov.uk/official-documents
- [39] M. Bonner, W. Wegrzynski, B. K. Papis, and G. Rein, "KRESNIK: A top-down, statistical approach to understand the fire performance of building facades using standard test data," *Building and Environment*, vol. 169, 2020, doi: 10.1016/j.buildenv.2019.106540.

- [40] L. Boström, C. Skarin, M. Duny, and R. McNamee, "Fire test of ventilated and unventilated wooden façades," 9789188349200, 2016.
- [41] M. P. Giraldo, A. Lacasta, J. Avellaneda, and C. Burgos, "Computer-simulation study on fire behaviour in the ventilated cavity of ventilated façade systems," *MATEC Web of Conferences*, vol. 9, pp. 03002–03002, 2013, doi: 10.1051/mateconf/20130903002.
- [42] H. Ingason, "Effects Of flue spaces on the initial in-rack plume flow," *Fire Safety Science*, vol. 7, pp. 235–246, 2003, doi: 10.3801/IAFSS.FSS.7-235.
- [43] E. Guillaume, V. Dréan, B. Girardin, F. Benameur, M. Koohkan, and T. Fateh, "Reconstruction of Grenfell Tower fire. Part 3—Numerical simulation of the Grenfell Tower disaster: Contribution to the understanding of the fire propagation and behaviour during the vertical fire spread," *Fire and Materials*, vol. 44, no. 1, pp. 35–57, 2020, doi: 10.1002/fam.2763.
- [44] R. A. Strøm, "Recent progress on test evidence, standardization and design of protection for exterior openings," in *MATEC Web of Conferences*, 2016/5// 2016, vol. 46: EDP Sciences, doi: 10.1051/mateconf/20164601004.
- [45] M. Zhang, W. H. Song, Z. P. Ni, and X. Huang, "Study on the external insulation system with curtain wall for fire prevention based on numerical simulation," in *Applied Mechanics and Materials*, 2014, vol. 444-445, pp. 1592–1599, doi: 10.4028/www.scientific.net/AMM.444-445.1592.
- [46] J. Schulz, D. Kent, T. Crimi, J. L. D. Glockling, and T. R. Hull, "A Critical Appraisal of the UK's Regulatory Regime for Combustible Façades," *Fire Technology*, vol. 57, no. 1, pp. 261–290, 2021, doi: 10.1007/s10694-020-00993-z.
- [47] M. K. Hassan *et al.*, "Numerical Investigations on the Influencing Factors of Rapid Fire Spread of Flammable Cladding in a High-Rise Building," *Fire*, vol. 5, no. 5, 2022, doi: 10.3390/fire5050149.
- [48] K. T. Q. Nguyen, P. Weerasinghe, P. Mendis, and T. Ngo, "Performance of modern building facades in fire: a comprehensive review," *Electronic Journal of Structural Engineering*, vol. 16, no. 1, pp. 69–85, 2016.
- [49] L. Miao and C. L. Chow, "A study on window plume from a room fire to the cavity of a double-skin façade," *Applied Thermal Engineering*, vol. 129, pp. 230–241, 2018, doi: 10.1016/j.applthermaleng.2017.09.125.
- [50] C. L. Chow, "A qualitative investigation on double-skin façade fires," in *MATEC Web of Conferences*, 2013, vol. 9: EDP Sciences, doi: 10.1051/mateconf/20130903007.
- [51] C. L. Chow, "Numerical studies on smoke spread in the cavity of a double-skin facade," *Journal of Civil Engineering and Management*, vol. 17, no. 3, pp. 371–392, 2011, doi: 10.3846/13923730.2011.595075.
- [52] W. K. Chow and W. Y. Hung, "Effect of cavity depth on smoke spreading of double-skin façade," *Building and Environment*, vol. 41, no. 7, pp. 970–979, 2006, doi: 10.1016/j.buildenv.2005.04.009.

- [53] W. K. Chow, W. Y. Hung, Y. Gao, G. Zou, and H. Dong, "Experimental study on smoke movement leading to glass damages in double-skinned façade," *Construction and Building Materials*, vol. 21, no. 3, pp. 556–566, 2007, doi: 10.1016/j.conbuildmat.2005.09.005.
- [54] J. Li, X. Xing, C. Hu, Y. Li, C. Yin, and S. Liu, "Numerical Studies on Effects of Cavity Width on Smoke Spread in Double-skin Facade," *Procedia Engineering*, vol. 45, pp. 695–699, 2012, doi: 10.1016/j.proeng.2012.08.225.
- [55] L. Miao and C. L. Chow, "Investigation of burning photovoltaic panels on a double-skin facade with ejecting flame from an adjacent room fire," *Indoor and Built Environment*, vol. 28, no. 7, pp. 938–949, 2019, doi: 10.1177/1420326X18804591.
- [56] J. Ji, Y. F. Li, W. X. Shi, and J. H. Sun, "Numerical studies on smoke spread in the cavity of a double-skin façade," *Journal of Civil Engineering and Management*, vol. 22, no. 4, pp. 470–479, 2016, doi: 10.3846/13923730.2014.897992.
- [57] L. Peng, Z. Ni, and X. Huang, "Experimental and numerical study of fire spread upon double-skin glass facades," in *MATEC Web of Conferences*, 2013, vol. 9: EDP Sciences, doi: 10.1051/mateconf/20130903009.
- [58] Z. Ni, S. Lu, and L. Peng, "Experimental study on fire performance of double-skin glass facades," *Journal of Fire Sciences*, vol. 30, no. 5, pp. 457–472, 2012, doi: 10.1177/0734904112447179.
- [59] D. A. Abdoh, V. K. R. Kodur, and K. M. Liew, "Smoothed particle hydrodynamics modeling of the thermal behavior of double skin facades in fires considering the effects of venetian blinds," *Applied Mathematical Modelling*, vol. 84, pp. 357–376, 2020, doi: 10.1016/j.apm.2020.02.033.
- [60] N. C. L. Chow, S. S. Li, and D. X. Huang, "Apron design for protecting double-skin facade fires," *Fire and Materials*, vol. 39, no. 3, pp. 189–206, 2015, doi: 10.1002/fam.2238.
- [61] J. R. Littlewood, M. Alam, and S. Goodhew, "A New Methodology for the Selective Measurement of building Performance and Safety," *Energy Procedia*, vol. 111, pp. 338–346, 2017, doi: 10.1016/j.egypro.2017.03.195.
- [62] W. D. Sungkono, J. A. Thabari, K. Brajamagenta, and Y. S. Nugroho, "Modeling of fire spread control in double skin facade by using water spray systems," 2021, pp. 090006–090006, doi: 10.1063/5.0063934. [Online]. Available: <http://aip.scitation.org/doi/abs/10.1063/5.0063934>
- [63] K. Guedri, M. N. Borjini, M. Jeguirim, J. F. Brilhac, and R. Saïd, "Numerical study of radiative heat transfer effects on a complex configuration of rack storage fire," *Energy*, vol. 36, no. 5, pp. 2984–2996, 2011, doi: 10.1016/j.energy.2011.02.042.
- [64] N. Ren, J. de Vries, X. Zhou, M. Chaos, K. V. Meredith, and Y. Wang, "Large-scale fire suppression modeling of corrugated cardboard boxes on wood pallets in rack-storage configurations," *Fire Safety Journal*, vol. 91, pp. 695–704, 2017, doi: 10.1016/j.firesaf.2017.04.008.

- [65] H. Z. You and H. C. Kung, "Strong buoyant plumes of growing rack storage fires," in *Twentieth Symposium (International) on Combustion*, 1984: The Combustion Institute, pp. 1547–1554.
- [66] H. Ingason, "Plume flow in high rack storages," *Fire Safety Journal*, vol. 36, no. 5, pp. 437–457, 2001, doi: 10.1016/S0379-7112(01)00007-8.
- [67] H. Ingason, "Two Dimensional Rack Storage Fires," in *Fire Safety Science - Proceedings of the Fourth International Symposium*, 1994, pp. 1209–1220.
- [68] H. Ingason and J. De Ris, "Flame heat transfer in storage geometries," *Fire Safety Journal*, vol. 31, pp. 39–60, 1998, doi: 10.1016/S0379-7112(97)00062-3.
- [69] B. Karlsson, P. H. Thomas, and G. Holmstedt, "Flame Sizes in a Small Scale Stack: Pilot Experiments," 1995. [Online]. Available: <https://www.lunduniversity.lu.se/lup/publication/6d4662b5-2ec2-4eab-95eb-72a773e6bc9e>
- [70] Y. P. Lee, M. A. Delichatsios, Y. Ohmiya, K. Wakatsuki, A. Yanagisawa, and D. Goto, "Heat fluxes on opposite building wall by flames emerging from an enclosure," *Proceedings of the Combustion Institute*, vol. 32 II, pp. 2551–2558, 2009, doi: 10.1016/j.proci.2008.06.130.
- [71] M. A. Sultan, "Fire Spread via Wall/ Floor Joints in Multi-family Dwellings," *Fire and Materials*, vol. 24, pp. 1–8, 2000.
- [72] B. J. Meacham, "Fire performance and regulatory considerations with modern methods of construction," *Buildings and Cities*, vol. 3, no. 1, pp. 464–487, 2022, doi: 10.5334/bc.201.
- [73] P. C. R. Collier and G. B. Baker, "The Influence of Construction Detailing on the Fire Performance of Polystyrene Insulated Panels," *Fire Technology*, vol. 49, no. 2, pp. 195–211, 2013, doi: 10.1007/s10694-011-0238-5.
- [74] B. Rogowski, "Fire performance of combustible insulation in masonry cavity walls," *Fire Safety Journal*, vol. 8, no. 2, pp. 119–134, 1985, doi: 10.1016/0379-7112(85)90050-5.
- [75] K. Livkiss, S. Svensson, B. Husted, and P. van Hees, "Flame Heights and Heat Transfer in Façade System Ventilation Cavities," *Fire Technology*, vol. 54, no. 3, pp. 689–713, 2018, doi: 10.1007/s10694-018-0706-2.
- [76] M. Foley and D. D. Drysdale, "Heat transfer from flames between vertical parallel walls," *Fire Safety Journal*, vol. 24, no. 1, pp. 53–73, 1995, doi: 10.1016/0379-7112(94)00033-C.
- [77] A. Sharma and K. B. Mishra, "Experimental investigations on the influence of ‘chimney-effect’ on fire response of rainscreen façades in high-rise buildings," *Journal of Building Engineering*, vol. 44, 2021, doi: 10.1016/j.job.2021.103257.
- [78] W. Taylor, "Fire spread in concealed foamed plastic insulation," *Fire Technology*, vol. 19, no. 3, pp. 192–203, 1983, doi: 10.1007/BF02378699.

- [79] L. Hu, S. Liu, and X. Zhang, "Flame heights of line-source buoyant turbulent non-premixed jets with air entrainment constraint by two parallel side walls," *Fuel*, vol. 200, pp. 583–589, 2017, doi: 10.1016/j.fuel.2017.03.082.
- [80] K. L. T. Jamison and D. A. Boardman, "A new fire performance test for cavity wall insulation," *MATEC Web of Conferences*, vol. 46, pp. 02004–02004, 2016, doi: 10.1051/mateconf/20164602004.
- [81] J. E. Mendez, D. Lange, J. P. Hidalgo, and M. S. McLaggan, "Effect of cavity parameters on the fire dynamics of ventilated façades," *Fire Safety Journal*, vol. 133, 2022, doi: 10.1016/j.firesaf.2022.103671.
- [82] J. L. De Ris and L. Orloff, "Flame Heat Transfer between Parallel Panels," in *ty Science - Proceedings of the Eighth International Symposium*, 2005: International Association for Fire Safety Science, pp. 999–1010.
- [83] T. Chen, A. Yuen, G. Yeoh, W. Yang, and Q. Chan, "Fire Risk Assessment of Combustible Exterior Cladding Using a Collective Numerical Database," *Fire*, vol. 2, no. 1, pp. 11–11, 2019, doi: 10.3390/fire2010011.
- [84] G. Jensen, "Fire spread modes and performance of fire stops in vented façade constructions - Overview and standardization of test methods," in *MATEC Web of Conferences*, 2013, vol. 9: EDP Sciences, doi: 10.1051/mateconf/20130902002.
- [85] G. Peck *et al.*, "Smoke toxicity of rainscreen façades," *Journal of Hazardous Materials*, vol. 403, 2021, doi: 10.1016/j.jhazmat.2020.123694.
- [86] C. L. Chow, "Spread of smoke and heat along narrow air cavity in double-skin façade fires," *Thermal Science*, vol. 18, no. SUPPL.2, pp. 405–416, 2014, doi: 10.2298/TSCI110918094C.
- [87] V. Dréan, B. Girardin, E. Guillaume, and T. Fateh, "Numerical simulation of the fire behaviour of facade equipped with aluminium composite material-based claddings-Model validation at large scale," *Fire and Materials*, vol. 43, no. 8, pp. 981–1002, 2019, doi: 10.1002/fam.2759.
- [88] G. Thomas, M. Al-Janabi, and M. Donn, "Designing double skin facade venting regimes for smoke management," in *Fire and Materials*, 2018/8//2018, vol. 42: John Wiley and Sons Ltd, 5 ed., pp. 549–560, doi: 10.1002/fam.2509.
- [89] R. Q. Wang, S. J. He, and H. R. Yue, "Numerical Study of Smoke Spread upon Shaft-box Type Double Skin Facades," in *Procedia Engineering*, 2018, vol. 211: Elsevier Ltd, pp. 755–761, doi: 10.1016/j.proeng.2017.12.072.
- [90] H. Ingason, "Modelling of a two-dimensional rack storage fire," *Fire Safety Journal*, vol. 30, no. 1, pp. 47–69, 1998, doi: 10.1016/S0379-7112(97)00024-6.
- [91] K. Schabowicz, P. Sulik, and Ł. Zawiślak, "Identification of the destruction model of ventilated facade under the influence of fire," *Materials*, vol. 13, no. 10, 2020, doi: 10.3390/ma13102387.

- [92] M. Kristoffersen and T. Log, "Experience gained from 15 years of fire protection plans for Nordic wooden towns in Norway," *Safety Science*, vol. 146, 2022, doi: 10.1016/j.ssci.2021.105535.
- [93] T. Munmulla *et al.*, "Analyses of Structural Robustness of Prefabricated Modular Buildings: A Case Study on Mid-Rise Building Configurations," *Buildings*, vol. 12, no. 8, doi: 10.3390/buildings12081289.
- [94] S. Srisangeerthan, M. J. Hashemi, P. Rajeev, E. Gad, and S. Fernando, "Review of performance requirements for inter-module connections in multi-story modular buildings," in *Journal of Building Engineering* vol. 28, ed: Elsevier Ltd, 2020.
- [95] R. M. Lawson and J. Richards, "Modular design for high-rise buildings," *Proceedings of the institution of civil engineers-structures and buildings*, vol. 163, no. 3, pp. 151–164, 2010.
- [96] G. H. DuBose, D. Snell, R. Scott, and C. Allen, "Preventing Modular Building Mold and Moisture Problems in the Warm and Humid Southeast," in *Building Enclosure*, ed, 2021.
- [97] F. Lugaesi, P. Kotsovinos, P. Lenk, and G. Rein, "Review of the mechanical failure of non-combustible facade systems in fire," *Construction and Building Materials*, vol. 361, p. 129506, 2022, doi: <https://doi.org/10.1016/j.conbuildmat.2022.129506>.
- [98] A. S. Usmani, J. M. Rotter, S. Lamont, A. M. Sanad, and M. Gillie, "Fundamental principles of structural behaviour under thermal effects," *Fire Safety Journal*, vol. 36, pp. 721–744, 2001, doi: 10.1016/S0379-7112(01)00037-6.
- [99] C. Paneni, "Development of Fire Engineering Solutions for Modular Construction," Master of Philosophy, School of Civil Engineering, The University of Queensland, 2018.
- [100] S. Shan and W. Pan, "Collapse mechanisms of multi-story steel-framed modular structures under fire scenarios," *Journal of Constructional Steel Research*, vol. 196, p. 107419, 2022, doi: <https://doi.org/10.1016/j.jcsr.2022.107419>.
- [101] M. Balarupan, "Structural behaviour and design of cold-formed steel hollow section columns under simulated fire conditions," Queensland University of Technology, 2015.
- [102] T. A. C. Pires, J. J. do Rêgo Silva, M. M. L. dos Santos, and L. M. Costa, "Fire resistance of built-up cold-formed steel columns," *Journal of Constructional Steel Research*, vol. 177, p. 106456, 2021, doi: <https://doi.org/10.1016/j.jcsr.2020.106456>.
- [103] J. Yang, Y. Shi, W. Wang, L. Xu, and H. Al-azzani, "Experimental and numerical studies on axially restrained cold-formed steel built-up box columns at elevated temperatures," *Journal of Constructional Steel Research*, vol. 171, p. 106143, 2020, doi: <https://doi.org/10.1016/j.jcsr.2020.106143>.

- [104] H. D. Craveiro, J. P. C. Rodrigues, and L. Laím, "Experimental analysis of built-up closed cold-formed steel columns with restrained thermal elongation under fire conditions," *Thin-Walled Structures*, vol. 107, pp. 564–579, 2016, doi: <https://doi.org/10.1016/j.tws.2016.07.001>.
- [105] C. Zhang, Z. Zhang, and G.-Q. Li, "Simple vs. sophisticated fire models to predict performance of SHS column in localized fire," *Journal of Constructional Steel Research*, vol. 120, pp. 62–69, 2016, doi: <https://doi.org/10.1016/j.jcsr.2015.12.026>.
- [106] A. J. P. Moura Correia, J. P. C. Rodrigues, and P. V. Real, "Thermal bowing on steel columns embedded on walls under fire conditions," *Fire Safety Journal*, vol. 67, pp. 53–69, 2014, doi: <https://doi.org/10.1016/j.firesaf.2014.05.001>.
- [107] W. B. Yuan, P. J. Ge, Y. T. Shen, S. S. Cheng, and N. T. Yu, "Buckling Analysis of Steel H Column with Thermal Gradient Along the Flanges," *International Journal of Steel Structures*, vol. 20, no. 2, pp. 677–691, 2020, doi: 10.1007/s13296-020-00314-8.
- [108] R. Mahenthirarasa, "Cold-formed steel compression members exposed to extreme temperature environments," Doctor of Philosophy, Queensland University of Technology, 2021. [Online]. Available: https://eprints.qut.edu.au/226125/1/Rokilan_Mahenthirarasa_Thesis.pdf
- [109] S. Kesawan and M. Mahendran, "Fire design rules for LSF walls made of hollow flange channel sections," *Thin-Walled Structures*, vol. 107, pp. 300–314, 2016, doi: <https://doi.org/10.1016/j.tws.2016.05.022>.
- [110] C. Maraveas, "Local buckling of steel members under fire conditions: a review," *Fire Technology*, vol. 55, no. 1, pp. 51–80, 2019.
- [111] Y. C. Wang, "Postbuckling Behavior of Axially Restrained and Axially Loaded Steel Columns under Fire Conditions," *Journal of Structural Engineering*, vol. 130, no. 3, pp. 371–380, 2004, doi: doi:10.1061/(ASCE)0733-9445(2004)130:3(371).
- [112] J. M. Franssen, "Failure temperature of a system comprising a restrained column submitted to fire," *Fire Safety Journal*, vol. 34, no. 2, pp. 191–207, 2000, doi: [https://doi.org/10.1016/S0379-7112\(99\)00047-8](https://doi.org/10.1016/S0379-7112(99)00047-8).
- [113] Y. Wang and D. Moore, "Effect of thermal restraint on column behaviour in a frame," in *4th International Symposium on Fire Safety Science, Ottawa, IAFSS, Kashiwagi T, editor*, 1994, pp. 1055–1066.
- [114] P. Wang, G. Q. Li, and Y. Wang, "Behaviour and design of restrained steel column in fire, Part 3: Practical design method," *Journal of Constructional Steel Research*, vol. 66, no. 11, pp. 1422–1430, 2010, doi: <https://doi.org/10.1016/j.jcsr.2010.05.009>.
- [115] B. Jiang, Z. Chen, Z. Yin, and L. Xiao, "Buckling and critical temperatures of restrained H-section steel columns in fire considering dynamic effect," *Fire Safety Journal*, vol. 141, p. 104006, 2023, doi: <https://doi.org/10.1016/j.firesaf.2023.104006>.

- [116] J. Sun, F. Meng, K. Andisheh, and G. C. Clifton, "Numerical Analysis of Restrained Continuous Steel Columns under Standard Fire," *Fire*, vol. 6, no. 9, doi: 10.3390/fire6090330.
- [117] H. D. d. S. Craveiro, "Fire resistance of cold formed steel columns," Doctor of Philosophy, Department of Civil Engineering, University of Coimbra, 2015.
- [118] J. C. Rodrigues, I. C. Neves, and J. Valente, "Experimental research on the critical temperature of compressed steel elements with restrained thermal elongation," *Fire Safety Journal*, vol. 35, no. 2, pp. 77–98, 2000.
- [119] K. H. Tan, W. S. Toh, Z. F. Huang, and G. H. Phng, "Structural responses of restrained steel columns at elevated temperatures. Part 1: Experiments," *Engineering Structures*, vol. 29, no. 8, pp. 1641–1652, 2007, doi: <https://doi.org/10.1016/j.engstruct.2006.12.005>.
- [120] W. Wang, L. Zhang, Y. Ge, and L. Xu, "Behaviour of restrained high strength steel columns at elevated temperature," *Journal of Constructional Steel Research*, vol. 148, pp. 251–264, 2018.
- [121] G. Q. Li, P. Wang, and Y. Wang, "Behaviour and design of restrained steel column in fire, Part 1: Fire test," *Journal of Constructional Steel Research*, vol. 66, no. 8, pp. 1138–1147, 2010, doi: <https://doi.org/10.1016/j.jcsr.2010.03.017>.
- [122] G. Q. Li and C. Chen, "Parametric Studies on Critical Temperature of Restrained Steel Column in a Fire," *Journal of Disaster Prevention and Mitigation Engineering*, vol. 31, no. 6, pp. 603–608, 2011.
- [123] C. Zhang, J. L. Gross, T. P. McAllister, and G. Q. Li, "Behavior of unrestrained and restrained bare steel columns subjected to localized fire," *Journal of Structural Engineering*, vol. 141, no. 10, p. 04014239, 2015.
- [124] J. C. Valente and I. C. Neves, "Fire resistance of steel columns with elastically restrained axial elongation and bending," *Journal of Constructional Steel Research*, vol. 52, no. 3, pp. 319–331, 1999, doi: [https://doi.org/10.1016/S0143-974X\(99\)00033-4](https://doi.org/10.1016/S0143-974X(99)00033-4).
- [125] R. Senthilkumar and D. P. Kumar, "Numerical studies on restrained cold-formed steel column subjected to transient thermal loading," in *Structures*, 2021, vol. 32: Elsevier, pp. 161–169.
- [126] R. Senthilkumar, C. P. A. Sai Kumar, R. Saravanakumar, and D. P. Kumar, "Numerical study on restrained thermal elongation of cold-formed steel Column subjected to non-uniform thermal loading under transient state," *Fire Safety Journal*, vol. 131, p. 103608, 2022, doi: <https://doi.org/10.1016/j.firesaf.2022.103608>.
- [127] "AS/NZS 4600: Cold-formed steel structures," Standards Australia Limited, 2018.
- [128] "AS 1530.4: Methods for fire tests on building materials, components and structures – Part 4: Fire-resistance tests for elements of construction," Standards Australia, 2014.

- [129] X. Wang, W. Chen, J. Li, and T. Yang, "Fire Resistance Performance of Constrained H-Shaped Steel Columns with Uneven Vertical Temperature Distributions," *Buildings*, vol. 14, no. 9, p. 2826, 2024. [Online]. Available: <https://www.mdpi.com/2075-5309/14/9/2826>.
- [130] R. Singh and A. Samanta, "Critical temperature prediction in cold-formed steel columns exposed to local fire," *Journal of Constructional Steel Research*, vol. 229, p. 109509, 2025.
- [131] C. Ren, P. Zhang, S. Yan, and L. Dai, "Analysis and design of cold-formed steel storage rack uprights under localised fires," *Structures*, vol. 27, pp. 2082–2095, 2020, doi: <https://doi.org/10.1016/j.istruc.2020.08.022>.
- [132] S. Gunalan and M. Mahendran, "Development of improved fire design rules for cold-formed steel wall systems," *Journal of Constructional Steel Research*, vol. 88, pp. 339–362, 2013, doi: <https://doi.org/10.1016/j.jcsr.2013.05.021>.
- [133] O. D. Ojeda, J. Maljaars, and R. Abspoel, "Fire exposed steel columns with a thermal gradient over the cross-section," *Thin-Walled Structures*, vol. 98, pp. 103–110, 2016.
- [134] A. Agarwal, L. Choe, and A. H. Varma, "Fire design of steel columns: Effects of thermal gradients," *Journal of Constructional Steel Research*, vol. 93, pp. 107–118, 2014.
- [135] S. R. C. P. A. Sai Kumar, S. R., and D. P. Kumar, "Numerical study on restrained thermal elongation of cold-formed steel Column subjected to non-uniform thermal loading under transient state," *Fire Safety Journal*, vol. 131, p. 103608, 2022, doi: <https://doi.org/10.1016/j.firesaf.2022.103608>.
- [136] S. Cheng, L. Y. Li, and B. Kim, "Buckling analysis of partially protected cold-formed steel channel-section columns at elevated temperatures," *Fire Safety Journal*, vol. 72, pp. 7–15, 2015.
- [137] "ANSI/FM 4880-2024 American National Standard for Evaluating the Fire Performance of Insulated Building Panel Assemblies and Interior Finish Materials," FM Global, 2024. [Online]. Available: <https://www.fmaprovals.com/-/media/Feature/Approval-Standards/4880ansi-pdf.pdf>
- [138] "American National Standard for Cleanroom Materials Flammability Test Protocol ANSI/FM Approvals 4910," FM Global, 2004.
- [139] "ANSI/FM Approvals 4411-2020 – American National Standard for Cavity Wall Systems," FM Global, 2020.
- [140] M. Tyrol, "FM4411 - Approval Standard For Cavity Walls And Rainscreens," 2018. [Online]. Available: <https://www.abaaconference.com/wp-content/uploads/2018/05/Mark-Tyrol-FM4411-%E2%80%90Approval-Standard-For-Cavity-Walls-And-Rainscreens.pdf>
- [141] N. Weerakkody, N. White, and K. Moinuddin, "Evaluation of exterior wall cavity fires using an intermediate scale test method," *Fire and Materials*, vol. 48, no. 6, doi: <https://doi.org/10.1002/fam.3213>.

- [142] "Approved Document B - Vol2 -Buildings other than dwellings," Ministry of Housing, Communities & Local Government, London, 2020.
- [143] "Approved Document B - Vol1 -Dwellings," Ministry of Housing, Communities & Local Government, London, 2020.
- [144] "National Construction Code : Volume 1," Australian Building Codes Board, 2022. [Online]. Available: <https://ncc.abcb.gov.au/editions/ncc-2022/adopted/volume-one/c-fire-resistance>
- [145] "NASH technical note - fire resistance of building elements," National Association of Steel Framed Housing Inc., 2025. [Online]. Available: <https://nash.asn.au/wp-content/uploads/2025/01/NTN-007-NASH-Technical-Note-Fire-resistance-of-building-elements.pdf>
- [146] D. Perera *et al.*, "Fire performance analyses of modular wall panel designs with loadbearing SHS columns," *Case Studies in Construction Materials*, vol. 17, p. e01179, 2022, doi: <https://doi.org/10.1016/j.cscm.2022.e01179>.
- [147] D. Perera *et al.*, "Novel conventional and modular LSF wall panels with improved fire performance," *Journal of Building Engineering*, vol. 46, p. 103612, 2022.
- [148] Y. Yu, P. Tian, M. Man, Z. Chen, L. Jiang, and B. Wei, "Experimental and numerical studies on the fire-resistance behaviors of critical walls and columns in modular steel buildings," *Journal of Building Engineering*, vol. 44, p. 102964, 2021.
- [149] R. M. Lawson and A. G. J. Way, "Fire Safety of Light Steel Construction Technical Information Sheet ED016 Light steel in residential building Light steel modular building," 2012.
- [150] J. Yang, X. Zhou, W. Wang, L. Xu, and Y. Shi, "Fire resistance of box-shape cold-formed steel built-up columns failing in global buckling: Test, simulation and design," *Thin-Walled Structures*, vol. 183, p. 110433, 2023, doi: <https://doi.org/10.1016/j.tws.2022.110433>.
- [151] W. Chen, J. Ye, Y. Bai, and X.-L. Zhao, "Full-scale fire experiments on load-bearing cold-formed steel walls lined with different panels," *Journal of Constructional Steel Research*, vol. 79, pp. 242–254, 2012.
- [152] Y. Tao, M. Mahendran, and A. Ariyanayagam, "Fire tests of cold-formed steel walls made of hollow section studs," *Journal of Constructional Steel Research*, vol. 178, p. 106495, 2021.
- [153] X. Yan and T. Gernay, "Structural fire design of load-bearing cold-formed steel assemblies from a prototype metal building," in *Structures*, 2022, vol. 41: Elsevier, pp. 1266–1277.
- [154] "Intumescent Coating Expansion Space Requirements," FIRETEX, 2024. [Online]. Available: <https://www.duluxprotectivecoatings.com.au/media/3061/ftb001-intumescent-coating-expansion-space-requirements.pdf>
- [155] "Steel Construction – Fire Protection," Tata Steel & British Constructional Steelwork Association, 2013. [Online]. Available:

https://www.steelconstruction.info/images/8/87/Steel_construction_-_Fire_Protection.pdf

- [156] *Fire Dynamics Simulator - User's Guide* (2021). National Institute of Standards and Technology.
- [157] *PyroSim User Manual*. (2019). Thunderhead Engineering. [Online]. Available: www.thunderheadeng.com
- [158] K. Livkiss, B. P. Husted, T. Beji, and P. van Hees, "Numerical study of a fire-driven flow in a narrow cavity," *Fire Safety Journal*, vol. 108, p. 102834, 2019, doi: <https://doi.org/10.1016/j.firesaf.2019.102834>.
- [159] "Complex Stoichiometry in Pyrosim." <https://support.thunderheadeng.com/tutorials/pyrosim/complex-stoichiometry/> (accessed 2022).
- [160] P. Richard, S. Davis, and B. Lee, "Experimental Data Set for the Accuracy Assessment of Room Fire Models (NBSIR 88-3752)," ed: NIST Interagency/Internal Report (NISTIR), National Institute of Standards and Technology, Gaithersburg, MD, 1988.
- [161] K. B. McGrattan, "Fire dynamics simulator (version 4) :Technical Reference Guide," Gaithersburg, MD, 2006. [Online]. Available: <https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication1018.pdf>
- [162] P. Keerthan and M. Mahendran, "Numerical studies of gypsum plasterboard panels under standard fire conditions," *Fire Safety Journal*, vol. 53, pp. 105–119, 2012, doi: 10.1016/j.firesaf.2012.06.007.
- [163] Y. Hasemi and M. Nishihata, "Fuel Shape Effect on the Deterministic Properties of Turbulent Diffusion Flames," in *Fire safety science - proceedings of the second international symposium*, 1989, pp. 275–284.
- [164] "Passive Fire Stopping for Cavity Barriers ", Trafalgar Fire. [Online]. Available: <https://tfire.com.au/cavity-barriers-2/#:~:text=Such%20cavity%20barriers%20commonly%20comprise,conditions%20for%20a%20considerable%20period.>
- [165] M. J. Hurley, Ed. *SFPE Handbook of Fire Protection Engineering*, 5 ed. Society of Fire Protection Engineers, 2016.
- [166] R. Sun, L. Hamilton, and C. Allery, "Fire driven flow within cavities behind perforated cladding—a CFD modelling investigation," in *Proceedings Fire and Evacuation Modeling Technical Conference*, 2020.
- [167] "Abaqus/CAE," ed. Providence, Rhode Island, USA: Dassault Systemes Simulia Corp., 2014.
- [168] M. Imran, M. Mahendran, and P. Keerthan, "Mechanical properties of cold-formed steel tubular sections at elevated temperatures," *Journal of Constructional Steel Research*, vol. 143, pp. 131–147, 2018, doi: <https://doi.org/10.1016/j.jcsr.2017.12.003>.
- [169] M. Rokilan and M. Mahendran, "Design of cold-formed steel columns subject to local buckling at elevated temperatures," *Journal of Constructional Steel*

Research, vol. 179, p. 106539, 2021, doi: <https://doi.org/10.1016/j.jcsr.2021.106539>.

- [170] X. Zha and Y. Zuo, "Finite Element Study of Container Structure under Normal and High Temperature," *Mathematical Problems in Engineering*, vol. 2016, 2016, doi: 10.1155/2016/2652149.
- [171] M. Zammarano *et al.*, "Full-Scale Experiments to Demonstrate Flammability Risk of Residential Upholstered Furniture and Mitigation Using Barrier Fabric," National Institute of Standards and Technology, NIST Technical Note 2129, 2020.
- [172] P. Andy Prabowo, "Multi-storey Modular Cold-Formed Steel Building in Hong Kong: Challenges & Opportunities," *IOP Conference Series: Materials Science and Engineering*, vol. 650, no. 1, p. 012033, 2019, doi: 10.1088/1757-899X/650/1/012033.
- [173] L. Simões da Silva *et al.*, "Performance of modular hybrid cold-formed/tubular structural system," *Structures*, vol. 30, pp. 1006–1019, 2021, doi: <https://doi.org/10.1016/j.istruc.2021.01.066>.
- [174] M. Farajian, P. Sharafi, H. Eslamnia, K. Kildashti, and Y. Bai, "Classification of inter-modular connections for stiffness and strength in sway corner-supported steel modular frames," *Journal of Constructional Steel Research*, vol. 197, p. 107458, 2022, doi: <https://doi.org/10.1016/j.jcsr.2022.107458>.
- [175] S. Gunalan, Y. B. Heva, and M. Mahendran, "Local buckling studies of cold-formed steel compression members at elevated temperatures," *Journal of Constructional Steel Research*, vol. 108, pp. 31–45, 2015.
- [176] "What is the heating value of media such as fuel oil, LPG and natural gas?," GDK Blog, 2016. [Online]. Available: [https://www.gok-blog.de/en/2016/04/27/what-is-the-heating-value-of-media-such-as-fuel-oil-lpg-and-natural-gas/#:~:text=the%20future/caption-.LPG%20\(propane\),are%2025.80%20and%2028.10%2C%20respectively](https://www.gok-blog.de/en/2016/04/27/what-is-the-heating-value-of-media-such-as-fuel-oil-lpg-and-natural-gas/#:~:text=the%20future/caption-.LPG%20(propane),are%2025.80%20and%2028.10%2C%20respectively).
- [177] Z. Liu, J. C. G. Silva, Q. Huang, Y. Hasemi, Y. Huang, and Z. Guo, "Coupled CFD–FEM Simulation Methodology for Fire-Exposed Bridges," *Journal of Bridge Engineering*, vol. 26, no. 10, p. 04021074, 2021, doi: 10.1061/(ASCE)BE.1943-5592.0001770.
- [178] A. A. Khan, M. A. Khan, C. Zhang, L. Jiang, and A. Usmani, "OpenFIRE: An Open Computational Framework for Structural Response to Real Fires," *Fire Technology*, vol. 58, no. 2, pp. 1011–1038, 2022, doi: 10.1007/s10694-021-01184-0.
- [179] X. Yan and T. Gernay, "Numerical modeling of localized fire exposures on structures using FDS-FEM and simple models," *Engineering Structures*, vol. 246, p. 112997, 2021, doi: <https://doi.org/10.1016/j.engstruct.2021.112997>.
- [180] C. Zhang, J. G. Silva, C. Weinschenk, D. Kamikawa, and Y. Hasemi, "Simulation methodology for coupled fire-structure analysis: modeling localized fire tests on a steel column," *Fire Technology*, vol. 52, no. 1, pp. 239–262, 2016.

- [181] X. Gong and A. K. Agrawal, "Safety of cable-supported bridges during fire hazards," *Journal of Bridge Engineering*, vol. 21, no. 4, p. 04015082, 2016.
- [182] X. Gong and A. K. Agrawal, "Numerical simulation of fire damage to a long-span truss bridge," *Journal of bridge Engineering*, vol. 20, no. 10, p. 04014109, 2015.
- [183] T. K. Antti Paajanen, "FDS2FEM User Guide, version 2.0," VTT Technical Research Centre of Finland, 2018. [Online]. Available: <https://github.com/atpaajan/fds2fem/blob/master/doc/manual.pdf>
- [184] K. McGrattan, S. Hostikka, J. Floyd, R. McDermott, M. Vanella, and E. Mueller, "Fire Dynamics Simulator User's Guide version 6.9.1," National Institute of Standards and Technology, 2024, issue Revision: FDS-6.9.1-0-g889da6a.
- [185] K. McGrattan *et al.*, "Fire Dynamics Simulator User's Guide," National Institute of Standards and Technology, 2025.
- [186] C. Annan, M. Youssef, and M. El Naggar, "Seismic vulnerability assessment of modular steel buildings," *Journal of Earthquake Engineering*, vol. 13, no. 8, pp. 1065–1088, 2009.
- [187] C. D. Annan, M. A. Youssef, and M. H. El Naggar, "Seismic overstrength in braced frames of modular steel buildings," *Journal of Earthquake Engineering*, vol. 13, no. 1, pp. 1–21, 2009, doi: 10.1080/13632460802212576.
- [188] Y. Chua, J. R. Liew, and S. Pang, "Modelling of connections and lateral behavior of high-rise modular steel buildings," *Journal of Constructional Steel Research*, vol. 166, p. 105901, 2020.
- [189] Q. Tong, C. Couto, and T. Gernay, "Predicting the capacity of slender steel columns at elevated temperature with finite element method and machine learning," *Applications of structural fire engineering. Ljubljana, Slovenia*, 2021.
- [190] G. Liu, J. Liu, N. Wang, X. Xue, and Y. Tan, "Machine Learning-Aided Prediction of Post-Fire Shear Resistance Reduction of Q690 HSS Plate Girders," *Buildings*, vol. 12, no. 9, p. 1481, 2022. [Online]. Available: <https://www.mdpi.com/2075-5309/12/9/1481>.
- [191] T. Hozjan, G. Turk, and S. Srpcič, "Fire analysis of steel frames with the use of artificial neural networks," *Journal of constructional steel research*, vol. 63, no. 10, pp. 1396–1403, 2007.
- [192] J. Xu, J. Zhao, W. Wang, and M. Liu, "Prediction of temperature of tubular truss under fire using artificial neural networks," *Fire safety journal*, vol. 56, pp. 74–80, 2013.
- [193] S. Kesawan, P. Rachmadini, S. Sabesan, and B. Janarthanan, "Application of neural networks for light gauge steel fire walls," *Engineering Structures*, vol. 278, p. 115445, 2023.
- [194] F. Pedregosa *et al.*, "Scikit-learn: Machine learning in Python," *the Journal of machine Learning research*, vol. 12, pp. 2825–2830, 2011.

- [195] D. Meddage *et al.*, "Explainable Machine Learning (XML) to predict external wind pressure of a low-rise building in urban-like settings," *Journal of Wind Engineering and Industrial Aerodynamics*, vol. 226, p. 105027, 2022.
- [196] R. Roscher, B. Bohn, M. F. Duarte, and J. Garcke, "Explainable machine learning for scientific insights and discoveries," *Ieee Access*, vol. 8, pp. 42200–42216, 2020.
- [197] F. Xu, H. Uszkoreit, Y. Du, W. Fan, D. Zhao, and J. Zhu, "Explainable AI: A brief survey on history, research areas, approaches and challenges," in *Natural language processing and Chinese computing: 8th cCF international conference, NLPCC 2019, dunhuang, China, October 9–14, 2019, proceedings, part II* 8, 2019: Springer, pp. 563–574.
- [198] S. M. Lundberg and S. I. Lee, "A unified approach to interpreting model predictions," *Advances in neural information processing systems*, vol. 30, 2017.
- [199] C. Molnar, *Interpretable machine learning - A Guide for Making Black Box Models Explainable*. Leanpub, 2019.
- [200] S. M. Lundberg, "SHAP GitHub Repository," 2023. [Online]. Available: <https://github.com/slundberg/shap>.
- [201] D. I. Kolaitis, E. K. Asimakopoulou, and M. A. Founti, "Fire behaviour of gypsum plasterboard wall assemblies: CFD simulation of a full-scale residential building," *Case Studies in Fire Safety*, vol. 7, pp. 23–35, 2017, doi: <https://doi.org/10.1016/j.csfs.2016.11.001>.
- [202] L. Gardner and D. A. Nethercot, "Experiments on stainless steel hollow sections—Part 1: Material and cross-sectional behaviour," *Journal of Constructional Steel Research*, vol. 60, no. 9, pp. 1291–1318, 2004, doi: <https://doi.org/10.1016/j.jcsr.2003.11.006>.
- [203] M. Rokilan and M. Mahendran, "Elevated temperature mechanical properties of cold-rolled steel sheets and cold-formed steel sections," *Journal of Constructional Steel Research*, vol. 167, p. 105851, 2020, doi: <https://doi.org/10.1016/j.jcsr.2019.105851>.
- [204] P. Gatheeshgar *et al.*, "Development of affordable steel-framed modular buildings for emergency situations (Covid-19)," in *Structures*, 2021, vol. 31: Elsevier, pp. 862–875.
- [205] "lightweight fibre cement flooring specification and user guide," Meyer timber, 2024. [Online]. Available: <https://meyertimber.com.au/wp-content/uploads/meyFC-user-guideJUN24-final-WEB.pdf>
- [206] "Gyprock Fyrcek product data sheet," Gyprock [Online]. Available: [https://celumcsrcomablobs.blob.core.windows.net/celum/1800_yConnect_Document Plasterboard%20Fyrcek%20%20-%20Product%20Data%20Sheet.pdf](https://celumcsrcomablobs.blob.core.windows.net/celum/1800_yConnect_Document%20Plasterboard%20Fyrcek%20%20-%20Product%20Data%20Sheet.pdf)
- [207] "Rockwool® Safe 'n' Silent® Pro." Fletcher Insulation. <https://insulation.com.au/product/rockwool-safe-n-silent-pro/> (accessed 2025).

- [208] "Aluminium composite panels 1220 x 2440 x 4 mm, Alcotek B2." oxley trade.
<https://oxleytrade.com.au/product/aluminium-composite-panels-acp/>
(accessed 2025).
- [209] "AS/NZS 1170.1:2002," in "Structural design actions: Part 1: Permanent, imposed and other actions," Standards Australia and Standards New Zealand.
- [210] "AS/NZS 1170.0:2002," in "Structural design actions: Part 0: General principles," Standards Australia and Standards New Zealand.