**Table 1** Types of different construction robotic assembly equipment

|  |  |  |
| --- | --- | --- |
| **Type** | **Sub-type** | **References** |
| Stationary | Articulated robot | [1-62] |
| Cartesian | [63-78] |
| Parallel | [79-88] |
| Mobile | Terrestrial robot | [89-116] |
| Climbing | [117-128] |
| Aerial | [63,93,129-133] |
| Collaborative | Articulated cobot | [134-148] |
| Terrestrial cobot | [149-160] |

**Table 2** Assembly enviroments of different construction robotic assembly equipment

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Offsite** | **On-site** | **Simulations** |
| Articulated robot | [1-8,18-21,23,24,28,31-33,35-41,43-46,48-57,59-62] | [58] | [9-17,22,25-27,29,30,34,42,47] |
| Cartesian | [67,69-73,75,78] | [74,76,77] | [63-66,68] |
| Parallel | [79-81,83-85] | [86-88] | [82] |
| Terrestrial robot | [89-92,100,101,103,105-107] | [98,99,108-116] | [93-97,102,104] |
| Climbing | [117-119,121-128] |  | [120] |
| Aerial | [130-133] | [129] | [63,93] |
| Articulated cobot | [134-148] |  |  |
| Terrestrial cobot | [149-151,155-160] | [152] | [153,154] |

**Table 3** Materials of assembly objects

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type** | **Timber** | **Masonry works** | **Interior and exterior finishing** | **Concrete & steel component production** | **Others** |
| Articulated robot | [1,3,6,7,14,17,22,24,26,29,32,37,49,51-57,59-62] | [2,8,16,18,20,21,23,27,31,33,34,36,40,42,50,58] | [5,9-12,30,48] | [4,15,19,25,28,35,39] | [13,38,41,43-47] |
| Cartesian | [66,67,69-71,73,75,78] | [63-65] | [74] | [68,72,76,77] |  |
| Parallel |  | [79,82-85] | [86-88] | [80] | [81] |
| Terrestrial robot | [95,99,105,107,113,115] | [89,91,92,94,97,98,100-102,104,106,111,114,116] | [93,96,108-110] | [112] | [90,103] |
| Climbing | [118,119,121-124] | [128] |  |  | [117,120,125-127] |
| Aerial |  | [63,129,130,133] | [93] |  | [131,132] |
| Articulated cobot | [136,140-142,146-148] | [134,135,137,139,143-145] |  |  | [138] |
| Terrestrial cobot | [149,151,155-159] | [150,152-154,160] |  |  |  |

**Table 4** Scales of assembly objects

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Demo** | **Prototype** | **Project** |
| Articulated robot | [1-47] | [48-52] | [53-62] |
| Cartesian | [63-68] | [69-72] | [73-78] |
| Parallel | [79-83] | [84,85] | [86-88] |
| Terrestrial robot | [89-104] | [105-107] | [108-116] |
| Climbing | [117-128] |  |  |
| Aerial | [63,93,129-132] | [133] |  |
| Articulated cobot | [134-146] | [147,148] |  |
| Terrestrial cobot | [149-156] | [157-159] | [160] |

**References**

[1] O. Kontovourkis, Multi-objective design optimization and robotic fabrication towards sustainable construction, SharingofComputableKnowledge!, (2017), pp. 125. <https://doi.org/10.52842/conf.ecaade.2017.1.337>

[2] V. Usmanov, M. Bruzl, Modelling of industrial robotic brick system, ISARC. Proceedings of the International Symposium on Automation and Robotics in Construction, 2017, pp. <https://doi.org/10.22260/ISARC2017/0140>

[3] O. Kontovourkis, E. Demartinou, Modular formwork system layout development and assembly in actual scale based on robotic technology, Challenges for Technology Innovation: An Agenda for the Future, CRC Press, 2017, pp. 89-94.

[4] J. Cortsen, J.A. Rytz, L.-P. Ellekilde, D. Sølvason, H.G. Petersen, Automated Fabrication of double curved reinforcement structures for unique concrete buildings, Robotics and autonomous systems, 62(10) (2014), pp. 1387-1397. <http://dx.doi.org/10.1016/j.robot.2014.06.004>

[5] X. Wang, H. Yu, W. McGee, C.C. Menassa, V.R. Kamat, Enabling Building Information Model-driven human-robot collaborative construction workflows with closed-loop digital twins, Computers in Industry, 161 (2024), pp. 104112. <https://doi.org/10.1016/j.compind.2024.104112>

[6] L. Wang, T. Naito, Y. Leng, H. Fukuda, T. Zhang, Research on Construction Performance Evaluation of Robot in Wooden Structure Building Method, Buildings, 12(9) (2022), pp. 1437. <https://doi.org/10.3390/buildings12091437>

[7] A. Adel, D. Ruan, W. McGee, S. Mozaffari, Feedback-driven adaptive multi-robot timber construction, Automation in Construction, 164 (2024), pp. 105444. <https://doi.org/10.1016/j.autcon.2024.105444>

[8] V. Usmanov, J. Illetško, R. Šulc, Digital plan of brickwork layout for robotic bricklaying technology, Sustainability, 13(7) (2021), pp. 3905. <https://doi.org/10.3390/su13073905>

[9] C.-J. Liang, V.R. Kamat, C.C. Menassa, W. McGee, Trajectory-based skill learning for overhead construction robots using generalized cylinders with orientation, Journal of Computing in Civil Engineering, 36(2) (2022), pp. 04021036. <https://doi.org/10.1061/(ASCE)CP.1943-5487.0001004>

[10] W. Cai, L. Huang, Z. Zou, An Integrated Approach Combining Virtual Environments and Reinforcement Learning to Train Construction Robots for Conducting Tasks Under Uncertainties, Canadian Society of Civil Engineering Annual Conference, 2022, pp. 259-271. <https://doi.org/10.1007/978-3-031-34593-7_17>

[11] C.-J. Liang, V.R. Kamat, C.C. Menassa, Teaching robots to perform quasi-repetitive construction tasks through human demonstration, Automation in Construction, 120 (2020), pp. 103370. <https://doi.org/10.1016/j.autcon.2020.103370>

[12] S. Lee, M. Gil, K. Lee, S. Lee, C. Han, Design of a ceiling glass installation robot, Proceedings of the 24th International Symposium on Automation and Robotics in Construction, 2007, pp. 247-252. <https://doi.org/10.22260/ISARC2007/0044>

[13] B.M. Tehrani, S. BuHamdan, A. Alwisy, Robotics in industrialized construction: an activity-based ranking system for assembly manufacturing tasks, Engineering, Construction and Architectural Management, 31(6) (2024), pp. 2264-2285. <https://doi.org/10.1108/ECAM-02-2022-0143>

[14] Y. Li, B. Yu, A. Fingrut, J. Li, Design for Manufacturing and Assembly (DfMA) of Standardized Modular Wood Components, Technology| Architecture+ Design, 7(2) (2023), pp. 282-292. <https://doi.org/10.1080/24751448.2023.2246804>

[15] J. Shu, W. Li, Y. Gao, Collision-free trajectory planning for robotic assembly of lightweight structures, Automation in Construction, 142 (2022), pp. 104520. <https://doi.org/10.1016/j.autcon.2022.104520>

[16] D. Lee, S. Lee, N. Masoud, M. Krishnan, V.C. Li, Digital twin-driven deep reinforcement learning for adaptive task allocation in robotic construction, Advanced Engineering Informatics, 53 (2022), pp. 101710. <https://doi.org/10.1016/j.aei.2022.101710>

[17] R. Naboni, A. Kunic, A computational framework for the design and robotic manufacturing of complex wood structures, Real-time-Proceedings of the 37th eCAADe and 23rd SIGraDi Conference, Porto, Portugal, 2019, pp. 189-196. <http://dx.doi.org/10.5151/proceedings-ecaadesigradi2019_488>

[18] Y. Liu, N. Napp, Stability-Based Sequence Planning for Robotic Dry-Stacking of Natural Stones, IEEE Robotics and Automation Letters, (2023), pp. <https://doi.org/10.1109/LRA.2023.3301275>

[19] A.Y. Yasutomi, H. Mori, T. Ogata, A peg-in-hole task strategy for holes in concrete, 2021 IEEE International Conference on Robotics and Automation (ICRA), 2021, pp. 2205-2211. <https://doi.org/10.1109/ICRA48506.2021.9561370>

[20] J.-S. Hsu, Y.-T. Shen, F.-C. Cheng, The development of the intuitive teaching-based design method for robot-assisted fabrication applied to bricklaying design and construction, International Conference on Human-Computer Interaction, 2022, pp. 51-57. <https://doi.org/10.1007/978-3-031-06394-7_8>

[21] M. Raković, M. Jovanović, B. Borovac, B. Tepavčević, M. Nikolić, M. Papović, Design and fabrication with industrial robot as brick-laying tool and with custom script utilization, 2014 23rd International Conference on Robotics in Alpe-Adria-Danube Region (RAAD), 2014, pp. 1-5. <http://dx.doi.org/10.1109/RAAD.2014.7002251>

[22] F. Yang, J. Zhang, Timber Construction Automation Using Industrial Robotic Arm Integrated with an Interactive Rail System, Computing in Civil Engineering 2023, pp. 1014-1021. <https://doi.org/10.1061/9780784485248.121>

[23] T. Ghiyasi, S.H. Zargar, A. Baghi, Layer-by-layer Pick and Place Collaboration between Human and Robot using Optimization, Digital Design Reconsidered - Proceedings of the 41st Conference on Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2023), 2023, pp. 769–778. <https://doi.org/10.52842/conf.ecaade.2023.2.769>

[24] A. Adel, Reducing Uncertainty in Multi-Robot Construction through Perception Modelling and Adaptive Fabrication, Proceedings of the 40th International Symposium on Automation and Robotics in Construction, International Association for Automation and Robotics in Construction (IAARC), 2023, pp. 25-31.

[25] Y. Gao, J. Meng, J. Shu, Y. Liu, BIM-based task and motion planning prototype for robotic assembly of COVID-19 hospitalisation light weight structures, Automation in Construction, 140 (2022), pp. 104370. <https://doi.org/10.1016/j.autcon.2022.104370>

[26] O.W. Chong, J. Zhang, R.M. Voyles, B.-C. Min, BIM-based simulation of construction robotics in the assembly process of wood frames, Automation in Construction, 137 (2022), pp. 104194. <https://doi.org/10.1016/j.autcon.2022.104194>

[27] D. El-Mahdy, A. Alaa, An experimental study of a curved brick wall using Robot assembly as a teaching tool in architectural curriculum, 2022 International Conference on Electrical, Computer and Energy Technologies (ICECET), 2022, pp. 1-6. <https://doi.org/10.1109/ICECET55527.2022.9872791>

[28] A.Y. Yasutomi, H. Mori, T. Ogata, Curriculum-based offline network training for improvement of peg-in-hole task performance for holes in concrete, 2022 IEEE/SICE International Symposium on System Integration (SII), 2022, pp. 712-717. <https://doi.org/10.1109/SII52469.2022.9708766>

[29] N. Rogeau, P. Latteur, Y. Weinand, An integrated design tool for timber plate structures to generate joints geometry, fabrication toolpath, and robot trajectories, Automation in Construction, 130 (2021), pp. 103875. <http://dx.doi.org/10.1016/j.autcon.2021.103875>

[30] A.K. Ali, O.J. Lee, H. Song, Robot-based facade spatial assembly optimization, Journal of Building Engineering, 33 (2021), pp. 101556. <https://doi.org/10.1016/j.jobe.2020.101556>

[31] R. García, A. Perez, J. Pulido, P. Ulloa, E. Forcael, Assembly of Stay-In-Place Concrete Blocks Using a Robot, IOP Conference Series: Earth and Environmental Science, 2020, pp. 012077. <http://dx.doi.org/10.1088/1755-1315/503/1/012077>

[32] N. Rogeau, V. Tiberghien, P. Latteur, Y. Weinand, Robotic insertion of timber joints using visual detection of fiducial markers, Proceedings of the 37th International Symposium on Automation and Robotics in Construction (ISARC), 2020, pp. 491-498. <https://doi.org/10.22260/ISARC2020/0068>

[33] L. Ding, W. Jiang, Y. Zhou, C. Zhou, S. Liu, BIM-based task-level planning for robotic brick assembly through image-based 3D modeling, Advanced Engineering Informatics, 43 (2020), pp. 100993. <https://doi.org/10.1016/j.aei.2019.100993>

[34] S. Abdelmohsen, K. Tarabieh, R. El-Dabaa, A. Hassan, I. Salem, Y. El-Ghazi, Coupling parametric design and robotic assembly simulation to generate thermally responsive brick walls, Build. Simul. Conf. Proc, 2019, pp. 3006-3013. <https://doi.org/10.26868/25222708.2019.210904>

[35] C.-J. Liang, S.-C. Kang, M.-H. Lee, RAS: a robotic assembly system for steel structure erection and assembly, International Journal of Intelligent Robotics and Applications, 1 (2017), pp. 459-476. <https://doi.org/10.1007/s41315-017-0030-x>

[36] C. Feng, Y. Xiao, A. Willette, W. McGee, V.R. Kamat, Vision guided autonomous robotic assembly and as-built scanning on unstructured construction sites, Automation in Construction, 59 (2015), pp. 128-138. <https://doi.org/10.1016/j.autcon.2015.06.002>

[37] F. Amtsberg, X. Yang, L. Skoury, A.S. Calepso, T. Wortmann, M. Sedlmair, A. Menges, Multi-Actor Fabrication for Digital Timber Construction, Proceedings of the 41st Conference on Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2023), pp. 417–426. <https://doi.org/10.52842/conf.ecaade.2023.1.417>

[38] B. Wibranek, L. Wietschorke, T. Glaetzer, O. Tessmann, Sequential Modular Assembly - Robotic Assembly of Cantilevering Structures through Differentiated Load Modules, RE: Anthropocene, Design in the Age of Humans - Proceedings of the 25th CAADRIA Conference, 2020, pp. 373-382. <https://doi.org/10.52842/conf.caadria.2020.2.373>

[39] R. Dai, E. Kerber, S. Brell-Cokcan, Robot Assisted Assembly of Steel Structures - Optimization and Automation of Plasma Cutting and Assembly, Intelligent & Informed - Proceedings of the 24th CAADRIA Conference, 2019, pp. 163-172. <https://doi.org/10.52842/conf.caadria.2019.1.163>

[40] A. Das, I.W. Foged, M.B. Jensen, Designing with a Robot: Interactive methods for brick wall design using computer vision, Anthropologic - Architecture and Fabrication in the cognitive age : The 38th Conference on Education and Research in Computer Aided Architectural Design in Europe, 2020, pp. 605-612. <https://doi.org/10.52842/conf.ecaade.2020.2.605>

[41] Y.-T. Shen, J.-S. Hsu, The Development of Mix-Reality Interface and Synchronous Robot Fabrication for the Collaborative Construction, International Conference on Human-Computer Interaction, 2023, pp. 372-381. <https://doi.org/10.1007/978-3-031-35634-6_26>

[42] Y. Song, R. Koeck, S. Luo, AR Digi-Component: AR-assisted, real-time, immersive design and robotic fabrication workflow for parametric architectural structures, Projections-Proceedings of the 26th International Conference of the Association for Computer-Aided Architectural Design Research in Asia, CAADRIA 2021, 2021, pp. 253-262. <http://dx.doi.org/10.52842/conf.caadria.2021.2.253>

[43] G. Vallat, J. Wang, A. Maddux, M. Kamgarpour, S. Parascho, Reinforcement learning for scaffold-free construction of spanning structures, Proceedings of the 8th ACM Symposium on Computational Fabrication, 2023, pp. 1-12. <https://doi.org/10.1145/3623263.3623359>

[44] K. Wu, A. Kilian, Developing architectural geometry through robotic assembly and material sensing, Robotic Fabrication in Architecture, Art and Design 2016, 2016, pp. 240-249.

[45] K. Wu, A. Kilian, Robotic equilibrium: Scaffold free arch assemblies, Proceedings of the 38th annual conference of the association for computer aided design in architecture, 2018, pp. 342-349. <https://doi.org/10.52842/conf.acadia.2018.342>

[46] K. Wu, A. Kilian, Designing Compression-Only Arch Structures Using Robotic Equilibrium Assembly, Impact: Design With All Senses: Proceedings of the Design Modelling Symposium, Berlin 2019, 2020, pp. 608-622. <https://doi.org/10.1007/978-3-030-29829-6_47>

[47] H. You, Y. Ye, T. Zhou, Q. Zhu, J. Du, Robot-Enabled Construction Assembly with Automated Sequence Planning Based on ChatGPT: RoboGPT, Buildings, 13(7) (2023), pp. 1772. <https://doi.org/10.3390/buildings13071772>

[48] I.X. Han, E.P. Bruun, S. Marsh, M. Tavano, S. Adriaenssens, S. Parascho, From Concept to Construction-A Transferable Design and Robotic Fabrication Method for a Building-Scale Vault, Proceedings of the 40th Annual Conference of the Association for Computer Aided Design in Architecture: Distributed Proximities, Acadia 2020, 2020, pp. <https://doi.org/10.52842/conf.acadia.2020.1.614>

[49] J. Zhao, A. Agkathidis, D. Lombardi, H. Chen, A computational framework for parametric design and robotic fabrication of the Dougong joint, Digital Design Reconsidered - Proceedings of the 41st Conference on Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2023), 2023, pp. <https://doi.org/10.52842/conf.ecaade.2023.1.313>

[50] E.P. Bruun, R. Pastrana, V. Paris, A. Beghini, A. Pizzigoni, S. Parascho, S. Adriaenssens, Three cooperative robotic fabrication methods for the scaffold-free construction of a masonry arch, Automation in Construction, 129 (2021), pp. 103803. <https://doi.org/10.1016/j.autcon.2021.103803>

[51] D. Reinhardt, Design Robotics Towards human-robot timber module assembly, Proceedings of the 37th eCAADe and 23rd SIGraDi Conference, 2019, pp. 211-216. <https://doi.org/10.52842/conf.ecaade.2019.2.211>

[52] R. Craney, A. Adel, Engrained Performance: Performance-Driven Computational Design of a Robotically Assembled Shingle Facade System, Proceedings of the 40th annual conference of - the association for computer al d ed design in architecture, 2020, pp. 604-613. <https://dx.doi.org/10.7302/7049>

[53] P. Lara Ditzel, L. Balas, O. Kalina, L. Vasey, S. Bechert, O.D. Krieg , A. Menges, J. Knippers, Integrative Fabrication of Sandwich Shells, Proceedings of the 38th Annual Conference of the Association for Computer Aided Design in Architecture, 2018.

[54] A. Groenewolt, O. Krieg, A. Menges, Collaborative Human-Robot Timber Construction, 2023, pp. <https://doi.org/10.52842/conf.ecaade.2023.1.407>

[55] Z. Xian, N. Hoban, B. Peters, Spatial Timber Assembly: Robotically Fabricated Reciprocal Frame Wall, Real-time-Proceedings of the 38th eCAADe Conference, Berlin, Germany, 2020, pp. 403-412. <https://doi.org/10.52842/conf.ecaade.2020.2.403>

[56] A. Adel, Co-Robotic Assembly of Nonstandard Timber Structures, Proceedings of the 42nd Annual Conference of the Association of Computer Aided Design in Architecture (ACADIA), 2023, pp. 604-613. <https://dx.doi.org/10.7302/8675>

[57] E. Augustynowicz, M. Smigielska, D. Nikles, T. Wehrle, H. Wagner, Parametric design and multirobotic fabrication of wood facades. ACADIA 2021: Realignments. Toward Critical Computation, Proceedings of the 41st Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA), 2021, pp. 258-269. <https://doi.org/10.52842/conf.acadia.2021.258>

[58] W. Xu, D. Luo, Y. Gao, Automatic brick masonry system and its application in on-site construction, 4th International Conference on Computer-Aided Architectural Design Research: Intelligent and Informed,(CAADRIA), 2019, pp. 83-92. <http://dx.doi.org/10.52842/conf.caadria.2019.1.083>

[59] H.J. Wagner, M. Alvarez, O. Kyjanek, Z. Bhiri, M. Buck, A. Menges, Flexible and transportable robotic timber construction platform–TIM, Automation in Construction, 120 (2020), pp. 103400. <https://doi.org/10.1016/j.autcon.2020.103400>

[60] A.A. Apolinarska, M. Kuhn, F. Gramazio, M. Kohler, Performance-Driven Design of a Reciprocal Frame Canopy–Timber structure of the FutureTree, Towards a new, configurable architecture–Proceedings of the 39th International Hybrid Conference on Education and Research in Computer Aided Architectural Design in Europe, 2021, pp. 497-504. <http://dx.doi.org/10.52842/conf.ecaade.2021.1.497>

[61] P. Eversmann, F. Gramazio, M. Kohler, Robotic prefabrication of timber structures: towards automated large-scale spatial assembly, Construction Robotics, 1(1) (2017), pp. 49-60. <https://doi.org/10.1007/s41693-017-0006-2>

[62] S. Wang, D. Lin, L. Sun, Human-cyber-physical system for post-digital design and construction of lightweight timber structures, Automation in Construction, 154 (2023), pp. 105033. <https://doi.org/10.1016/j.autcon.2023.105033>

[63] L. Herrmann, R. Boumann, M. Lehmann, S. Müller, T. Bruckmann, Simulation-Based Comparison of Novel Automated Construction Systems, Robotics, 11(6) (2022), pp. 119. <https://doi.org/10.3390/robotics11060119>

[64] M. Vujović, A. Rodić, I. Stevanović, Design of modular re-configurable robotic system for construction and digital fabrication, Advances in Robot Design and Intelligent Control: Proceedings of the 25th Conference on Robotics in Alpe-Adria-Danube Region (RAAD16), 2017, pp. 550-559. <https://doi.org/10.1007/978-3-319-49058-8_60>

[65] T. Bruckmann, H. Mattern, A. Spengler, C. Reichert, A. Malkwitz, M. König, Automated construction of masonry buildings using cable-driven parallel robots, ISARC. Proceedings of the International Symposium on Automation and Robotics in Construction, 2016, pp. 1. <https://doi.org/10.22260/ISARC2016/0041>

[66] M. Kohler, Tolerance-Aware Design of Robotically Assembled Spatial Structures, Proceedings of the 42nd Annual Conference of the Association of Computer Aided Design in Architecture (ACADIA), 2022, pp. 4-23. <https://papers.cumincad.org/cgi-bin/works/paper/acadia22_4>

[67] A.A. Apolinarska, M. Pacher, H. Li, N. Cote, R. Pastrana, F. Gramazio, M. Kohler, Robotic assembly of timber joints using reinforcement learning, Automation in Construction, 125 (2021), pp. 103569. <https://doi.org/10.1016/j.autcon.2021.103569>

[68] A. Garg, V.R. Kamat, Virtual prototyping for robotic fabrication of rebar cages in manufactured concrete construction, Journal of Architectural Engineering, 20(1) (2014), pp. 06013002. <http://dx.doi.org/10.1061/(ASCE)AE.1943-5568.0000134>

[69] H. Chai, X. Zhou, X. Gao, Q. Yang, Y. Zhou, P.F. Yuan, Integrated workflow for cooperative robotic fabrication of natural tree fork structures, Automation in Construction, 165 (2024), pp. 105524. <https://doi.org/10.1016/j.autcon.2024.105524>

[70] Y. Huang, P.Y.V. Leung, C. Garrett, F. Gramazio, M. Kohler, C. Mueller, The new analog: A protocol for linking design and construction intent with algorithmic planning for robotic assembly of complex structures, Proceedings of the 6th Annual ACM Symposium on Computational Fabrication, 2021, pp. 1-17. <https://doi.org/10.1145/3485114.3485122>

[71] P.Y. Leung, A.A. Apolinarska, D. Tanadini, F. Gramazio, M. Kohler, Automatic assembly of jointed timber structure using distributed robotic clamps, PROJECTIONS–Proceedings of the 26th International Conference of the Association for Computer-Aided Architectural Design, 2021, pp. 583-592. <http://dx.doi.org/10.52842/conf.caadria.2021.1.583>

[72] A. Gandia, S. Parascho, R. Rust, G. Casas, F. Gramazio, M. Kohler, Towards automatic path planning for robotically assembled spatial structures, Robotic Fabrication in Architecture, Art and Design 2018: Foreword by Sigrid Brell-Çokcan and Johannes Braumann, Association for Robots in Architecture, 2019, pp. 59-73. <https://doi.org/10.1007/978-3-319-92294-2_5>

[73] D. Tanadini, G. Boller, P.Y.V. Leung, P. D'Acunto, Plastic Design of Bespoke Interlocking Timber-to-Timber Connections for Robotic Assembly, World Conference on Timber Engineering (WCTE 2023), 2023, pp. <http://dx.doi.org/10.52202/069179-0573>

[74] S. Tong, W. Xu, X. Zhang, W. Liang, Y. Wang, Z. Zhang, Experimental and theoretical analysis on truss construction robot: automatic grasping and hoisting of concrete composite floor slab, Journal of Field Robotics, 40(2) (2023), pp. 272-288. <https://doi.org/10.1002/rob.22128>

[75] A. Adel, A. Thoma, M. Helmreich, F. Gramazio, M. Kohler, Design of robotically fabricated timber frame structures, Proceedings of the 38th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA), 2018, pp. 394-403. <http://dx.doi.org/10.52842/conf.acadia.2018.394>

[76] B. Chu, K. Jung, M.-T. Lim, D. Hong, Robot-based construction automation: An application to steel beam assembly (Part I), Automation in Construction, 32 (2013), pp. 46-61. <https://doi.org/10.1016/j.autcon.2012.12.016>

[77] K. Jung, B. Chu, D. Hong, Robot-based construction automation: An application to steel beam assembly (Part II), Automation in Construction, 32 (2013), pp. 62-79. <https://doi.org/10.1016/j.autcon.2012.12.011>

[78] J. Willmann, M. Knauss, T. Bonwetsch, A.A. Apolinarska, F. Gramazio, M. Kohler, Robotic timber construction—Expanding additive fabrication to new dimensions, Automation in Construction, 61 (2016), pp. 16-23. <https://doi.org/10.1016/j.autcon.2015.09.011>

[79] M. Klöckner, M. Haage, H. Eriksson, H. Malm, K. Nilsson, A. Robertsson, R. Andersson, Insights into automation of construction process using parallel-kinematic manipulators, Construction Robotics, 7(1) (2023), pp. 3-18. <https://doi.org/10.1007/s41693-023-00095-6>

[80] A.M. Lytle, K.S. Saidi, NIST research in autonomous construction, Autonomous Robots, 22 (2007), pp. 211-221. <https://doi.org/10.1007/s10514-006-9003-x>

[81] K. Dierichs, O. Kyjánek, M. Loučka, A. Menges, Construction robotics for designed granular materials: In situ construction with designed granular materials at full architectural scale using a cable-driven parallel robot, Construction Robotics, 3 (2019), pp. 41-52. <https://doi.org/10.1007/s41693-019-00024-6>

[82] E. McDonald, S. Beites, M. Arsenault, CDPR Studio: A Parametric Design Tool for Simulating Cable-Suspended Parallel Robots, International Conference on Computer-Aided Architectural Design Futures, 2021, pp. 344-359. <https://doi.org/10.1007/978-981-19-1280-1_22>

[83] E. Moreira, A.M. Pinto, P. Costa, A.P. Moreira, G. Veiga, J. Lima, J.P. Sousa, P. Costa, Cable robot for non-standard architecture and construction: A dynamic positioning system, 2015 IEEE International Conference on Industrial Technology (ICIT), 2015, pp. 3184-3189. <https://doi.org/10.1109/ICIT.2015.7125568>

[84] Y. Wu, H.H. Cheng, A. Fingrut, K. Crolla, Y. Yam, D. Lau, CU-brick cable-driven robot for automated construction of complex brick structures: From simulation to hardware realisation, 2018 IEEE international conference on simulation, modeling, and programming for autonomous robots (SIMPAR), 2018, pp. 166-173. <https://doi.org/10.1109/SIMPAR.2018.8376287>

[85] A.M. Pinto, E. Moreira, J. Lima, J.P. Sousa, P. Costa, A cable-driven robot for architectural constructions: a visual-guided approach for motion control and path-planning, Autonomous Robots, 41 (2017), pp. 1487-1499. <https://doi.org/10.1007/s10514-016-9609-6>

[86] R. Hu, K. Iturralde, T. Linner, C. Zhao, W. Pan, A. Pracucci, T. Bock, A simple framework for the cost–benefit analysis of single-task construction robots based on a case study of a cable-driven facade installation robot, Buildings, 11(1) (2020), pp. 8. <https://doi.org/10.3390/buildings11010008>

[87] K. Iturralde, M. Feucht, D. Illner, R. Hu, W. Pan, T. Linner, T. Bock, I. Eskudero, M. Rodriguez, J. Gorrotxategi, Cable-driven parallel robot for curtain wall module installation, Automation in Construction, 138 (2022), pp. 104235. <https://doi.org/10.1016/j.autcon.2022.104235>

[88] M. Taghavi, H. Heredia, K. Iturralde, H. Halvorsen, T. Bock, Development of a Modular End Effector for the installation of Curtain Walls with cable-robots, Journal of Facade Design and Engineering, Vol 6 No 2: ICAE2018 Special Issue, 6(2) (2018), pp. 001-008. <https://doi.org/10.7480/jfde.2018.2.2067>

[89] R. Dindorf, J. Takosoglu, P. Woś, Ł. Chłopek, Hydraulic Modules of Mobile Robotic Bricklaying System, International Scientific-Technical Conference on Hydraulic and Pneumatic Drives and Control, 2023, pp. 174-183. <https://doi.org/10.1007/978-3-031-43002-2_16>

[90] Q. Xu, Y. Zhang, S. Zhang, R. Zhao, Z. Wu, D. Zhang, C. Zhou, X. Li, J. Chen, Z. Zhao, RECCraft system: Towards reliable and efficient collective robotic construction, 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022, pp. 8979-8986. <https://doi.org/10.1109/IROS47612.2022.9982068>

[91] T. Sandy, M. Giftthaler, K. Dörfler, M. Kohler, J. Buchli, Autonomous repositioning and localization of an in situ fabricator, 2016 IEEE International Conference on Robotics and Automation (ICRA), 2016, pp. 2852-2858. <https://doi.org/10.1109/ICRA.2016.7487449>

[92] S. Lee, S. Yu, S. Lim, B. Ryu, C. Han, Optimal Manipulation Trajectory and Laying Pattern Generation Algorithm for Handling Robot, pp. <https://doi.org/10.22260/ISARC2009/0057>

[93] M. Krizmancic, B. Arbanas, T. Petrovic, F. Petric, S. Bogdan, Cooperative aerial-ground multi-robot system for automated construction tasks, IEEE Robotics and Automation Letters, 5(2) (2020), pp. 798-805. <https://doi.org/10.1109/LRA.2020.2965855>

[94] L.W. Torpoco-Lopez, T.J. Cochachi-Rubio, R.M. Olivera-Pérez, S.I. Del Carpio-Ramirez, J.R. Ortiz-Zacarias, G. Perez-Campomanes, Mechatronic design for load-bearing masonry construction based on BIM methodology, 2023 IEEE 13th Annual Computing and Communication Workshop and Conference (CCWC), 2023, pp. 1098-1104. <https://doi.org/10.1109/CCWC57344.2023.10099229>

[95] L. Wang, T. Zhang, H. Fukuda, Y. Leng, Research on the Application of Mobile Robot in Timber Structure Architecture, Sustainability, 14(8) (2022), pp. 4681. <https://doi.org/10.3390/su14084681>

[96] X. Wang, C.-J. Liang, C.C. Menassa, V.R. Kamat, Interactive and immersive process-level digital twin for collaborative human–robot construction work, Journal of Computing in Civil Engineering, 35(6) (2021), pp. 04021023. <https://doi.org/10.1061/(ASCE)CP.1943-5487.0000988>

[97] S.R.B. dos Santos, D.O. Dantas, S.N. Givigi, L. Buonocore, A.A. Neto, C.L. Nascimento, A stochastic learning approach for construction of brick structures with a ground robot, IFAC-PapersOnLine, 50(1) (2017), pp. 5654-5659. <https://doi.org/10.1016/j.ifacol.2017.08.1114>

[98] R. Mascaro, M. Wermelinger, M. Hutter, M. Chli, Towards automating construction tasks: Large‐scale object mapping, segmentation, and manipulation, Journal of Field Robotics, 38(5) (2021), pp. 684-699. <https://doi.org/10.1002/rob.22007>

[99] A.P.R. Lauer, T. Schürmann, A. Gienger, O. Sawodny, Force-Controlled On-Site Assembly Using Pose-Dependent Stiffness of Large-Scale Manipulators, 2023 IEEE 19th International Conference on Automation Science and Engineering (CASE), 2023, pp. 1-6. <https://doi.org/10.1109/CASE56687.2023.10260343>

[100] J. Ji, S. Wei, J.-S. Zhao, A Construction Robot Based on Mobile Manipulator and Sensor Fusion, International Conference on Mechanism and Machine Science, 2022, pp. 1813-1829. <http://dx.doi.org/10.1007/978-981-19-9398-5_111>

[101] S.-N. Yu, B.-G. Ryu, S.-J. Lim, C.-J. Kim, M.-K. Kang, C.-S. Han, Feasibility verification of brick-laying robot using manipulation trajectory and the laying pattern optimization, Automation in Construction, 18(5) (2009), pp. 644-655. <https://doi.org/10.1016/j.autcon.2008.12.008>

[102] Y. Gao, J. Shu, W. Xiao, Z. Jin, Polyhedron-bounded collision checks for robotic assembly of structural components, Automation in Construction, 152 (2023), pp. 104904. <https://doi.org/10.1016/j.autcon.2023.104904>

[103] S. Kalantari, A. Becker, R. Ike, Designing for digital assembly with a construction team of mobile robots, Proceedings of the 38th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA), 2018, pp. 376-385. <https://doi.org/10.52842/conf.acadia.2018.376>

[104] Z. Dakhli, Z. Lafhaj, Robotic mechanical design for brick-laying automation, Cogent Engineering, 4(1) (2017), pp. 1361600. <https://doi.org/10.1080/23311916.2017.1361600>

[105] Y. Leng, X. Shi, F. Hiroatsu, A. Kalachev, D. Wan, Automated construction for human–robot interaction in wooden buildings: Integrated robotic construction and digital design of iSMART wooden arches, Journal of Field Robotics, 40(4) (2023), pp. 810-827. <https://doi.org/10.1002/rob.22154>

[106] K. Dörfler, T. Sandy, M. Giftthaler, F. Gramazio, M. Kohler, J. Buchli, Mobile robotic brickwork: automation of a discrete robotic fabrication process using an autonomous mobile robot, Robotic Fabrication in Architecture, Art and Design 2016, (2016), pp. 204-217. <https://doi.org/10.1007/978-3-319-26378-6_15>

[107] V. Helm, S. Ercan, F. Gramazio, M. Kohler, Mobile robotic fabrication on construction sites: DimRob, 2012 IEEE/RSJ International Conference on Intelligent Robots and Systems, 2012, pp. 4335-4341. <https://doi.org/10.1109/IROS.2012.6385617>

[108] S. Li, X. Zhou, G. Cheng, W. Teng, Y. Zeng, G. Wei, Y. Chen, A scheme of installing ALC wall panels based on autonomous mobile robot, Journal of Building Engineering, (2024), pp. 109991. <https://doi.org/10.1016/j.jobe.2024.109991>

[109] N. Hack, K. Dörfler, A.N. Walzer, T. Wangler, J. Mata-Falcón, N. Kumar, J. Buchli, W. Kaufmann, R.J. Flatt, F. Gramazio, Structural stay-in-place formwork for robotic in situ fabrication of non-standard concrete structures: A real scale architectural demonstrator, Automation in Construction, 115 (2020), pp. 103197. <https://doi.org/10.1016/j.autcon.2020.103197>

[110] T. Hachijo, S. Igarashi, Autonomous Robot for Ceiling Board Construction Work “Robo-Buddy Ceiling”, 2023 IEEE 19th International Conference on Automation Science and Engineering (CASE), 2023, pp. 1-7. <https://doi.org/10.1109/CASE56687.2023.10260608>

[111] R.L. Johns, M. Wermelinger, R. Mascaro, D. Jud, I. Hurkxkens, L. Vasey, M. Chli, F. Gramazio, M. Kohler, M. Hutter, A framework for robotic excavation and dry stone construction using on-site materials, Science Robotics, 8(84) (2023), pp. eabp9758. <https://doi.org/10.1126/scirobotics.abp9758>

[112] M. Lussi, T. Sandy, K. Dörfler, N. Hack, F. Gramazio, M. Kohler, J. Buchli, Accurate and adaptive in situ fabrication of an undulated wall using an on-board visual sensing system, 2018 IEEE International Conference on Robotics and Automation (ICRA), 2018, pp. 3532-3539. <https://doi.org/10.1109/ICRA.2018.8460480>

[113] A.P.R. Lauer, E. Benner, T. Stark, S. Klassen, S. Abolhasani, L. Schroth, A. Gienger, H.J. Wagner, V. Schwieger, A. Menges, Automated on-site assembly of timber buildings on the example of a biomimetic shell, Automation in Construction, 156 (2023), pp. 105118. <https://doi.org/10.1016/j.autcon.2023.105118>

[114] M. Wermelinger, R. Johns, F. Gramazio, M. Kohler, M. Hutter, Grasping and object reorientation for autonomous construction of stone structures, IEEE Robotics and Automation Letters, 6(3) (2021), pp. 5105-5112. <https://doi.org/10.1109/LRA.2021.3070300>

[115] H. Chai, H.J. Wagner, Z. Guo, Y. Qi, A. Menges, P.F. Yuan, Computational design and on-site mobile robotic construction of an adaptive reinforcement beam network for cross-laminated timber slab panels, Automation in Construction, 142 (2022), pp. 104536. <https://doi.org/10.1016/j.autcon.2022.104536>

[116] R.L. Johns, M. Wermelinger, R. Mascaro, D. Jud, F. Gramazio, M. Kohler, M. Chli, M. Hutter, Autonomous dry stone: On-site planning and assembly of stone walls with a robotic excavator, Construction Robotics, 4(3) (2020), pp. 127-140. <https://link.springer.com/article/10.1007/s41693-020-00037-6>

[117] Y. Hua, Y. Deng, K. Petersen, Robots building bridges, not walls, 2018 IEEE 3rd International Workshops on Foundations and Applications of Self\* Systems (FAS\* W), 2018, pp. 154-159. <https://doi.org/10.1109/FAS-W.2018.00041>

[118] S. Leder, A. Menges, Merging architectural design and robotic planning using interactive agent-based modelling for collective robotic construction, Journal of Computational Design and Engineering, 11(2) (2024), pp. 253-268. <https://doi.org/10.1093/jcde/qwae028>

[119] S. Leder, R. Weber, D. Wood, O. Bucklin, A. Menges, Distributed robotic timber construction, Proceedings of the 39th ACADIA, (2019), pp. <http://dx.doi.org/10.52842/conf.acadia.2019.510>

[120] N.X. Man, Automating the design and assembly process of timber block construction system, AIP Conference Proceedings, 2021, pp. <https://doi.org/10.1063/5.0071200>

[121] S. Leder, H. Kim, M. Sitti, A. Menges, Enhanced co-design and evaluation of a collective robotic construction system for the assembly of large-scale in-plane timber structures, Automation in Construction, 162 (2024), pp. 105390. <https://doi.org/10.1016/j.autcon.2024.105390>

[122] S. Leder, R. Weber, D. Wood, O. Bucklin, A. Menges, Design and prototyping of a single axis, building material integrated, distributed robotic assembly system, 2019 IEEE 4th International Workshops on Foundations and Applications of Self\* Systems (FAS\* W), 2019, pp. 211-212. <http://dx.doi.org/10.1109/FAS-W.2019.00056>

[123] S. Leder, H. Kim, O.S. Oguz, N. Kubail Kalousdian, V.N. Hartmann, A. Menges, M. Toussaint, M. Sitti, Leveraging Building Material as Part of the In‐Plane Robotic Kinematic System for Collective Construction, Advanced Science, 9(24) (2022), pp. 2201524. <https://doi.org/10.1002/advs.202201524>

[124] B. Delikanlı, L.F. Gül, A System for Truss Manipulation with Relative Robots: Designing and Prototyping HookBot, International Conference on Computer-Aided Architectural Design Futures, 2023, pp. 393-409. <https://doi.org/10.1007/978-3-031-37189-9_26>

[125] C.E. Gregg, D. Catanoso, O.I.B. Formoso, I. Kostitsyna, M.E. Ochalek, T.J. Olatunde, I.W. Park, F.M. Sebastianelli, E.M. Taylor, G.T. Trinh, Ultralight, strong, and self-reprogrammable mechanical metamaterials, Science Robotics, 9(86) (2024), pp. eadi2746. <https://doi.org/10.1126/scirobotics.adi2746>

[126] B. Jenett, K. Cheung, Bill-e: Robotic platform for locomotion and manipulation of lightweight space structures, 25th AIAA/AHS Adaptive Structures Conference, 2017, pp. 1876. <https://doi.org/10.2514/6.2017-1876>

[127] N.K. Kalousdian, G. Łochnicki, V.N. Hartmann, S. Leder, O.S. Oguz, A. Menges, M. Toussaint, Learning robotic manipulation of natural materials with variable properties for construction tasks, IEEE Robotics and Automation Letters, 7(2) (2022), pp. 5749-5756. <http://dx.doi.org/10.1109/LRA.2022.3159288>

[128] J. Werfel, K. Petersen, R. Nagpal, Designing collective behavior in a termite-inspired robot construction team, Science, 343(6172) (2014), pp. 754-758. <https://doi.org/10.1126/science.1245842>

[129] T. Baca, R. Penicka, P. Stepan, M. Petrlik, V. Spurny, D. Hert, M. Saska, Autonomous cooperative wall building by a team of unmanned aerial vehicles in the MBZIRC 2020 competition, Robotics and autonomous systems, 167 (2023), pp. 104482. <https://doi.org/10.1016/j.robot.2023.104482>

[130] S. Goessens, C. Mueller, P. Latteur, Feasibility study for drone-based masonry construction of real-scale structures, Automation in Construction, 94 (2018), pp. 458-480. <https://doi.org/10.1016/j.autcon.2018.06.015>

[131] Q. Lindsey, D. Mellinger, V. Kumar, Construction with quadrotor teams, Autonomous Robots, 33(3) (2012), pp. 323-336. <https://doi.org/10.1007/s10514-012-9305-0>

[132] D. Wood, M. Yablonina, M. Aflalo, J. Chen, B. Tahanzadeh, A. Menges, Cyber physical macro material as a UAV [re] configurable architectural system, Robotic Fabrication in Architecture, Art and Design 2018: Foreword by Sigrid Brell-Çokcan and Johannes Braumann, Association for Robots in Architecture, 2019, pp. 320-335. <https://doi.org/10.1007/978-3-319-92294-2_25>

[133] F. Augugliaro, S. Lupashin, M. Hamer, C. Male, M. Hehn, M.W. Mueller, J.S. Willmann, F. Gramazio, M. Kohler, R. D'Andrea, The flight assembled architecture installation: Cooperative construction with flying machines, IEEE Control Systems Magazine, 34(4) (2014), pp. 46-64. <https://doi.org/10.1109/MCS.2014.2320359>

[134] Q. Shi, Z. Wang, X. Ke, Z. Wang, Q. Gao, Y. Fan, B. Lei, P. Wu, Multiobjective trajectory optimization of the wall‐building robot based on RBF–NSGA‐II in an uncertain viscoelastic contact environment, Journal of Field Robotics, 40(8) (2023), pp. 1964-1995. <https://doi.org/10.1002/rob.22235>

[135] K.S.D. Ravi, J.M. Ibáñez, D.M. Hall, Real-time digital twin of on-site robotic construction processes in mixed reality, ISARC. Proceedings of the International Symposium on Automation and Robotics in Construction, 2021, pp. 451-458. <https://doi.org/10.22260/ISARC2021/0062>

[136] C.-H. Yang, S.-C. Kang, Collision avoidance method for robotic modular home prefabrication, Automation in Construction, 130 (2021), pp. 103853. <https://doi.org/10.1016/j.autcon.2021.103853>

[137] S. Yang, H. Soomeen, AUGMENTED ROBOTIC BRICKLAYING: an Experiment in Remote Programming Robotic Assembly Using Augmented Reality for Brick-Based Structures, HUMAN-CENTRIC - Proceedings of the 28th CAADRIA Conference, 2023.

[138] B. Wibranek, B. Belousov, A. Sadybakasov, J. Peters, O. Tessmann, Interactive structure–robotic repositioning of vertical elements in man-machine collaborative assembly through vision-based tactile sensing, Architecture in the age of the 4th industrial revolution. Proceedings of the 37th eCAADe and 23rd SIGraDi conference, 2019, pp. 11-13.

[139] Q. Shi, Z. Wang, X. Ke, Z. Zheng, Z. Zhou, Z. Wang, Y. Fan, B. Lei, P. Wu, Trajectory optimization of wall-building robots using response surface and non-dominated sorting genetic algorithm III, Automation in Construction, 155 (2023), pp. 105035. <https://doi.org/10.1016/j.autcon.2023.105035>

[140] F. Neri, R. Cognoli, G. Palmieri, R. Ruggiero, Robotic assembly of a wooden architectural design, International Conference on Robotics in Alpe-Adria Danube Region, 2023, pp. 426-433. <https://doi.org/10.1007/978-3-031-32606-6_50>

[141] A. Kramberger, A. Kunic, I. Iturrate, C. Sloth, R. Naboni, C. Schlette, Robotic assembly of timber structures in a human-robot collaboration setup, Frontiers in Robotics and AI, 8 (2022), pp. 768038. <https://doi.org/10.3389/frobt.2021.768038>

[142] A. Kunic, A. Kramberger, R. Naboni, Cyber-physical robotic process for re-configurable wood architecture: Closing the circular loop in wood architecture, Towards a new, configurable architecture - Proceedings of the 39th eCAADe Conference, 2021, pp. 181-188. <https://doi.org/10.52842/conf.ecaade.2021.2.181>

[143] F. Furrer, M. Wermelinger, H. Yoshida, F. Gramazio, M. Kohler, R. Siegwart, M. Hutter, Autonomous robotic stone stacking with online next best object target pose planning, 2017 IEEE international conference on robotics and automation (ICRA), 2017, pp. 2350-2356. <http://dx.doi.org/10.1109/ICRA.2017.7989272>

[144] P.A. Varela, J.P. Sousa, J.S. Dias, Drawing-to-Factory Process, Towards a new, configurable architecture - Proceedings of the 39th eCAADe Conference, 2021, pp. 189-194. <https://doi.org/10.52842/conf.ecaade.2021.1.189>

[145] Y. Liu, J. Choi, N. Napp, Planning for robotic dry stacking with irregular stones, Field and Service Robotics: Results of the 12th International Conference, 2021, pp. 321-335. <https://doi.org/10.1007/978-981-15-9460-1_23>

[146] G. Rossi, P. Nicholas, Haptic learning: towards neural-network-based adaptive Cobot path-planning for unstructured spaces, eCAADe: Architecture in the age of the 4th industrial revolution, 2019, pp. 201-210. <http://dx.doi.org/10.5151/proceedings-ecaadesigradi2019_280>

[147] A. Kunic, R. Naboni, A. Kramberger, C. Schlette, Design and assembly automation of the Robotic Reversible Timber Beam, Automation in Construction, 123 (2021), pp. 103531. <https://doi.org/10.1016/j.autcon.2020.103531>

[148] R. Naboni, A. Kunic, A. Kramberger, C. Schlette, Design, simulation and robotic assembly of reversible timber structures, Construction Robotics, 5 (2021), pp. 13-22. <https://doi.org/10.1007/s41693-020-00052-7>

[149] X. Liang, U. Rasheed, J. Cai, B. Wibranek, I. Awolusi, Impacts of Collaborative Robots on Construction Work Performance and Worker Perception: Experimental Analysis of Human–Robot Collaborative Wood Assembly, Journal of Construction Engineering and Management, 150(8) (2024), pp. 04024087. <https://doi.org/10.1061/JCEMD4.COENG-14390>

[150] Z. Chen, Y. Feng, T. Li, Y. Jiang, Object-based terminal positioning solution within task-boosted global constraint for improving mobile robotic stacking accuracy, Advanced Engineering Informatics, 60 (2024), pp. 102521. <https://doi.org/10.1016/j.aei.2024.102521>

[151] S. Stumm, J. Braumann, M. von Hilchen, S. Brell-Cokcan, On-site robotic construction assistance for assembly using a-priori knowledge and human-robot collaboration, Advances in Robot Design and Intelligent Control: Proceedings of the 25th Conference on Robotics in Alpe-Adria-Danube Region (RAAD16), 2017, pp. 583-592. <https://doi.org/10.1007/978-3-319-49058-8_64>

[152] M. Basiri, J. Gonçalves, J. Rosa, A. Vale, P. Lima, An autonomous mobile manipulator to build outdoor structures consisting of heterogeneous brick patterns, SN Applied Sciences, 3 (2021), pp. 1-14. <https://doi.org/10.1007/s42452-021-04506-7>

[153] H. Heyu, C. Jianfu, Impedance control method with reinforcement learning for dual-arm robot installing slabstone, Journal of Mechanical Science and Technology, 36(5) (2022), pp. 2547-2558. <https://doi.org/10.1007/s12206-022-0436-8>

[154] H. Hu, J. Cao, Adaptive variable impedance control of dual-arm robots for slabstone installation, ISA transactions, 128 (2022), pp. 397-408. <https://doi.org/10.1016/j.isatra.2021.10.020>

[155] O. Kyjanek, B. Al Bahar, L. Vasey, B. Wannemacher, A. Menges, Implementation of an augmented reality AR workflow for human robot collaboration in timber prefabrication, Proceedings of the 36th international symposium on automation and robotics in construction, ISARC, 2019, pp. 1223-1230. <https://doi.org/10.22260/ISARC2019/0164>

[156] D. Mitterberger, T. Sandy, M. Kohler, K. Dörfler, Prototype as Artefact, Acadia 2020, 2010 (2020), pp. 350-359. <https://doi.org/10.52842/conf.acadia.2020.1.350>

[157] E. SKEVAKI, M. KLADEFTIRA, A.N. PITTIGLIO, S. PARASCHO, Adaptive Digital Fabrication Workflows for Human-Robot Collaboration, ACCELERATED DESIGN - Proceedings of the 29th CAADRIA ConferenceAt: Singapore.

[158] P. Devadass, S. Stumm, S. Brell-Cokcan, Adaptive haptically informed assembly with mobile robots in unstructured environments, Proceedings of the 36th international symposium on automation and robotics in construction (ISARC), 2019, pp. 469-476. <https://doi.org/10.22260/ISARC2019/0063>

[159] D. Mitterberger, L. Atanasova, K. Dörfler, F. Gramazio, M. Kohler, Tie a knot: human–robot cooperative workflow for assembling wooden structures using rope joints, Construction Robotics, 6(3-4) (2022), pp. 277-292. <https://doi.org/10.1007/s41693-022-00083-2>

[160] J. Fleckenstein, P.L. Molter, A. Chokhachian, K. Dörfler, Climate-resilient robotic facades: Architectural strategies to improve thermal comfort in outdoor urban environments using robotic assembly, Frontiers in Built Environment, 8 (2022), pp. 856871. <http://dx.doi.org/10.3389/fbuil.2022.856871>