**Appendix 1 – Search Criteria and Results**

**General Searches (Google Scholar since 2009)**

* “design for manufacture" and "design for assembly" and "construction industry" [n *=*87]
* “design for manufacture" and "design for assembly" and "AEC" [n *=*31]
* “design for manufacture and assembly" and "construction industry" [n *=*238]
* “design for manufacture and assembly" and "AEC" [n *=*76]
* “DfMA" and "construction industry" [n *=*291]
* “DfMA" and "AEC" [n *=*119]
* “design for assembly" and "construction industry" [n *=*237]
* “design for assembly" and "AEC" [n =70]
* “design for manufacture" and "construction industry" [n =445]
* “design for manufacture" and "AEC" [n =130]
* “fabrication-aware design” and “architectural design” [n =81]
* “architectural geometry” and “architectural design” and “manufacture” and “ assembly” [n =174]

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| **No.** | **Author** | **Title** | **Journal** | **Stage** | **Target** | **Aim** |
| 1 | Yuan et al., (2018) | Design for Manufacture and Assembly-oriented parametric design of prefabricated buildings | Automation in Construction | Whole life cycle | Manufacturability and Assemblability | This paper introduces Design for Manufacture and Assembly (DFMA) into prefabricated building design, and combines it with [parametric design](https://www.sciencedirect.com/topics/engineering/parametric-design) of [Building Information Modeling](https://www.sciencedirect.com/topics/engineering/building-information-modeling) (BIM) to develop the concept and process of DFMA-oriented parametric design. |
| 2 | Krimi et al., (2017) \* | Prospective study on the integration of additive manufacturing to building industry—Case of a French construction company | Additive Manufacturing | Detailed design stage | Manufacturability | The objective of this paper is to present a reflection on the use of Additive manufacturing in construction. |
| 3 | Rausch et al., (2016) | Optimum assembly planning for modular construction components | Journal of computing in civil engineering | Detailed design stage | Assemblability | This paper presents a framework for optimally planning the order and arrangement of components such that the impacts of geometric variability, and the rework it can cause are minimized.  |
| 4 | Azzi et al., (2011) | Variability-oriented assembly system design: a case study in the construction industry | Assembly Automation | Detailed design stage | Assemblability | The purpose of this paper is to apply group assembly (GA) considerations to the construction industry and to provide evidence of construction sector industrialization with quantitative results. |
| 5 | Maneschi and Melhado (2010) | Scope of design for production of partition walls and facade coverings | Architectural Engineering and Design Management | Detailed design stage | Manufacturability and Assemblability | The article presents the results of research that aims to establish a Brazilian pattern for developing design for the production of partition walls and facade coverings, with reference to professionals' needs. |
| 6 | Gao et al., (2018) | Design for manufacturing and assembly (DfMA): a preliminary study of factors influencing its adoption in Singapore | Architectural Engineering and Design Management | Whole life cycle | Manufacturability and Assemblability | This study explores the factors affecting the adoption of DfMA to better understand the strategies needed to effectively encourage private sector buy-in. |
| 7 | Gao et al., (2019) | Design for manufacture and assembly in construction: a review | Building Research & Information | Whole life cycle | Manufacturability and Assemblability | This study reviews the processes and principles of DfMA and explores the possible perspectives of DfMA with a view to providing implications to the construction industry. |
| 8 | Kremer (2018) | Design for Mass Customised Manufacturing and Assembly (DfMCMA): A Framework for Capturing Off-site and On-site Efficiencies in Mass Timber Construction | Mass Timber Construction Journal | Detailed design stage | Manufacturability and Assemblability | The present paper outlines the erroneous use of Design for Manufacture and Assemble (DfMA) as a term and concept applied to Mass Timber Construction (MTC), in particular toward technologies such as Cross Laminated Timber (CLT).  |
| 9 | Chen and Lu (2018) | Design for Manufacture and Assembly Oriented Design Approach to a Curtain Wall System: A Case Study of a Commercial Building in Wuhan, China | Sustainability | Detailed design stage | Manufacturability and Assemblability | This paper reports a case study of a successful application of a DfMA-oriented design approach to a CWS in a commercial building in Wuhan, China.  |
| 10 | Gbadamosi et al., (2019) | Offsite construction: Developing a BIM-Based optimizer for assembly | Journal of cleaner production | Detailed design stage | Assemblability | This study integrates the principles of Design for Manufacture and Assembly (DFMA) and Lean Construction to develop a [design assessment and optimization](https://www.sciencedirect.com/topics/engineering/design-optimization) system to assist designers in the selection of alternative [building design](https://www.sciencedirect.com/topics/engineering/building-design) elements and materials in a building information model.  |
| 11 | Başarır and Altun (2018) | A Redesign Procedure to Manufacture Adaptive Façades with Standard Products | Journal of Facade Design and Engineering | Detailed design stage | Manufacturability | This research aims to develop a procedure to design adaptive façades whose parts are based on engineered standard products with the least number of parts and layers.  |
| 12 | Martínez et al., (2013) | Flexible field factory for construction industry | Assembly Automation | Detailed design stage | Manufacturability and Assemblability | The paper aims to present the concept, the layout design and the evaluation performed of a flexible field factory for construction industry.  |
| 13 | Machado et al., (2016) | Implementing BIM to streamline a design, manufacture, and fitting workflow: a case study on a fit-out SME in the UK | International Journal of 3-D Information Modeling (IJ3DIM) | Detailed design stage | Manufacturability | This paper presents a case study of BIM implementation for Design for Manufacture and Assembly (DfMA).  |
| 14 | Montali et al., (2019) | Knowledge-rich optimisation of prefabricated façades to support conceptual design | Automation in Construction | Conceptual design stage | Manufacturability and Assemblability | One of the principal challenges in [façade](https://www.sciencedirect.com/topics/engineering/facades) design is to support the architectural intent by devising technically viable (i.e. standard-compliant and manufacturable) solutions from as early as possible in the design stage.  In this paper a process that addresses this challenge is presented. |
| 15 | Montali et al., (2018) | Knowledge-Based Engineering in the design for manufacture of prefabricated façades: current gaps and future trends | Architectural Engineering and Design Management | Whole life cycle | Manufacturability and Assemblability | This paper explores the currently available digital tools, as well as KBE and its applicability in façade design. |
| 16 | Gerth et al., (2013) | Design for construction: utilizing production experiences in development | Construction Management and Economics | Detailed design stage | Manufacturability and Assemblability | The objective is to conceptualize principles of how to capture, feedback and use production knowledge in the design phase into one useful model.  |
| 17 | Hsu et al., (2018) | Optimal logistics planning for modular construction using two-stage stochastic programming | Automation in Construction | Detailed design stage | Manufacturability and Assemblability | The aim of this study is to establish a mathematical model for the [optimisation](https://www.sciencedirect.com/topics/engineering/optimisation) of [logistics processes](https://www.sciencedirect.com/topics/engineering/process-logistics) in [modular construction](https://www.sciencedirect.com/topics/engineering/modular-construction) covering three tiers of operation: manufacturing, storage and assembly.  |
| 18 | Orlowski et al., (2018) | Design and Development of Weatherproof Seals for Prefabricated Construction: A Methodological Approach | Buildings | Detailed design stage | Manufacturability and Assemblability | This paper presents a holistic and fundamental methodological approach to Design and Development of waterproof seals and has been applied specific for prefabricated panelised and modular systems. |
| 19 | Johnston et al., (2016) | An assessment of pictographic instructions derived from a virtual prototype to support construction assembly procedures | Automation in Construction | Detailed design stage | Assemblability | This paper describes an assessment of using instructive pictographs to characterize prefigured assembly information for construction assembly procedure.  |
| 20 | Ghazilla et al., (2015) | Design for environment and design for disassembly practices in Malaysia: a practitioner's perspectives | Journal of Cleaner Production | Detailed design stage | Assemblability | This paper attempts to investigate the current state DfE and DfD implementation and the local driving force in the local Malaysian industry by addressing four research questions. |
| 21 | Jørgensen and Emmitt (2009) | Investigating the integration of design and construction from a “lean” perspective | Construction innovation | Detailed design stage | Manufacturability and Assemblability | The purpose of this paper is to identify some of the practical challenges underlying the implementation of approaches promoted as “lean” and compare this with published research/theory. |
| 22 | Luo et al., (2017) | Insights into architects' future roles in off-site construction | Construction Economics and Building | Whole life cycle | Manufacturability and Assemblability | This paper explores the traditional thinking patterns of architects in China and predicts possible future roles for them. It then conceptualizes an "architectural work" mode and a "building product" mode of design and construction and identifies the shortcomings of architects in an OSCM environment. |
| 23 | Pottmann (2013) | Architectural Geometry and Fabrication-Aware Design | Nexus Network Journal | Conceptual design stage | Manufacturability | The present paper provides a short survey of research in Architectural Geometry and shows how this field moves towards a new direction in Geometric Modeling which aims at combining shape design with important aspects of function and fabrication. |
| 24 | Pottmann (2009) | Geometry and New and Future Spatial Patterns | Architectural Design | Conceptual design stage | Manufacturability | This study explores the possibilities thrown up by new research employing fabrication‐aware design software. |
| 25 | Pottmann (2010) | Architectural geometry as a design knowledge | Architectural Design | Conceptual design stage | Manufacturability | This paper describes how geometry not only has the potential to inform a more exciting generative approach for architects, but can also make design much more construction aware for the whole design team, enabling a wholly digital workflow from design to fabrication. |
| 26 | [Tepavčević](https://scholar.google.com/citations?user=QCTpIRsAAAAJ&hl=en&oi=sra) et al., (2017) | Design to fabrication method of thin shell structures based on a friction-fit connection system | Automation in Construction | Detailed design stage | Manufacturability | In this paper, we propose a design to [fabrication method](https://www.sciencedirect.com/topics/engineering/fabrication-method) based on a 2D tool path CNC production system with the friction-fit connection assembly logic that can be easily manufactured and assembled.  |
| 27 | Pottmann et al., (2017) | Architectural geometry | Computers & graphics | Conceptual design stage | Manufacturability | We here survey the main directions which have been pursued, we show real projects where geometric considerations have played a role, and we outline open problems which we think are significant for the future development of both theory and practice of architectural geometry. |
| 28 | Bonwetsch (2012) | Robotic Assembly Processes as a Driver in Architectural Design | Nexus Network Journal | Conceptual design stage | Assemblability | As such, applying industrial robots emphasizes construction as an integral part of architectural design. Moreover, designing and manipulating robotic assembly processes can become a driver in architectural design. The potential of such an approach is discussed on the basis of several design experiments that illustrate that by applying such methods, form is not derived from computation or geometry, but from a physical process. |
| 29 | Larena and Azagra (2010) | Searching for the right form- The role of structural engineers in the design of two complex-geometry buildings in Madrid | Structural Engineer | Conceptual design stage | Manufacturability | This paper describes the processes followed for the design of four complex-geometry elements of two new law buildings in Madrid. |
| 30 | Dritsas (2012) | Design-Built Rationalization Strategies and Applications | International Journal of Architectural Computing | Conceptual design stage | Manufacturability | Rationalisation of architectural design is paramount to manufacturing and its construction. This paper presents a methodology of rationalisation of building envelope geometry |