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Research profile

Mads Brath Jensen is a Lab. engineer at the Department of Architecture, Design and Media Technology at Aalborg University in Denmark. In his PhD study (2017-2021), he investigated design methods and procedures for establishing a direct relation between creative design processes in the field architecture and interactive robotic fabrication, with emphasis on how cognitive design processes are influenced by interactive real-time human-material-robot processes. Mads received his MSc.Eng. in Digital Design from Aalborg University in 2008 and has been teaching in the field of computational architecture, parametric design and rapid prototyping technologies on both BSc and MSc level (2008-2017). This research-based teaching has resulted in a series of research pavilions showcasing the interconnection between computational form-finding, material behaviour, thermal- and acoustic simulation, and fabrication techniques.

Work Experience

2021-	Lab Engineer, Department of Architecture, Design and Media Technology, AAU
2020-	Member of the research group Create Integrated Architecture (CiA)
2017-2021	PhD fellow, Department of Architecture, Design and Media Technology, AAU
2017-	Manager of the Architectural Robotics Lab., Department of Architecture, Design and Media Technology, AAU
2014-2020	Member of the research group for Tectonics in Architecture (TiA), Department of Architecture, Design and Media Technology, AAU
2013-2017	Lab Engineer, Department of Architecture, Design and Media Technology, AAU
2012-2020	Member and co-founder of the Utzon(x) Research Group, Department of Architecture, Design and Media Technology, AAU
2009-2011	Research Assistant, Department of Architecture, Design and Media Technology, AAU
2008-2009	Teaching Assistant, Department of Architecture, Design and Media Technology, AAU
2005-2008	MSc degree in Digital Design, Department of Architecture, Design and Media Technology, AAU
2002-2005	B.Sc. degree in Industrial Design, Department of Architecture, Design and Media Technology, AAU

Publications

1. Jensen, MB 2021, *Co-creative Robotic Design Processes in Architecture*. PhD Series, Technical Faculty of IT and Design, Aalborg University, Aalborg Universitetsforlag.
2. Das, A, Foged, IW & Jensen, MB 2020, Designing with a Robot: Interactive Methods for brick wall design using computer vision. in LC Werner & D Koering (eds), *Anthropologic - Architecture and Fabrication in the cognitive age: The 38th Conference on Education and Research in Computer Aided Architectural Design in Europe*. Frist edn, vol. 2, eCAADe, Berlin, Germany, Proceedings of the International Online Conference on Education and Research in Computer Aided Architectural Design in Europe, pp. 605-612, Anthropologic - Architecture and Fabrication in the cognitive age, Berlin, Berlin, Germany, 16/09/2020. <<http://ecaade.org/?s=Anthropologic+-+Architecture+and+Fabrication+in+the+cognitive+age>>
3. Jensen, MB, Foged, IW & Andersen, HJ 2020, 'A Framework for Interactive Human-Robot Design Exploration', *International Journal of Architectural Computing*, vol. 18, no. 3, pp. 235-253. <https://doi.org/10.1177/1478077120911588>

4. Jensen, MB & Das, A 2020, Technologies and Techniques for Collaborative Robotics in Architecture: establishing a framework for human-robotic design exploration. in *RE: Anthropocene. Design in the Age of Humans: Proceedings of the 25th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRRIA) 2020*. vol. 2, Chulalongkorn University, Thailand, Bangkok, pp. 292-303, 25th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRRIA) 2020, Bangkok, Thailand, 05/08/2020. <http://papers.cumincad.org/cgi-bin/works/paper/caadrria2020_180>
5. Foged, IW, Pasold, A & Jensen, MB 2020, Acoustic Wall: Computational and Robotic Design Integration of Four Primary Generators. in B Sheil, MR Thomsen, M Tamke & S Hanna (eds), *Design Transactions: Rethinking Information Modelling for a New Material Age*. UCL Press, pp. 106-113. <<https://www.uclpress.co.uk/products/141560>>
6. Jensen, MB 2019, 'Robotic Fabrication of Acoustic Geometries: an explorative and creative design process within an educational context', *archi-DOCT - The e-journal for the dissemination of doctoral research in architecture*, vol. 6, no. 2, pp. 34-45. <http://www.enhsa.net/archidoct/Issues/vol6_iss2/ArchiDoct_vol6_iss2%2002%20Robotic%20Fabrication%20Brath.pdf>
7. Foged, IW & Jensen, MB, *Acoustic Tectonics - Collaborative Architectural Robotics Demonstrator*, 2019, 2D/3D (psysical products).
8. Das, A, Foged, IW, Jensen, MB & Hansson, MN 2019, Collaborative Robotic Masonry and Early Stage Fatigue Prediction. in *Architecture in the Age of the 4th Industrial Revolution: Proceedings of the 37th eCAADe and 23rd SIGraDi Conference*. vol. 3, University of Porto, pp. 171-178, The eCAADe and SIGraDi Conference 11-13 sep 2019, Faculty of Architecture, University of Porto, Portugal, Porto, Portugal, 11/09/2019. <http://papers.cumincad.org/cgi-bin/works/paper/ecaadesigradi2019_376>
9. Jensen, MB & Foged, IW, *Thermal Tower 2018*, 2018, 2D/3D (psysical products).
10. Jensen, MB, Foged, IW, Pasold, A & Hansson, M 2018, 'Creative Robotics in Architecture – Robotic Brick Stacking', Seventh Annual Aalborg U Robotics, Aalborg, Denmark, 03/12/2018 - 03/12/2018 pp. 25.
11. Foged, IW & Jensen, MB, *Tectonic Studio Library*, 2018, 2D/3D (psysical products).
12. Foged, IW & Jensen, MB 2018, Thermal Compositions Through Robot Based Thermal Mass Distribution. in *Proceedings of the 36th International Conference on Education and Research in Computer Aided Architectural Design in Europe, 2018*. vol. 1, eCAADe, pp. 783-790, Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2018), Lodz, Poland, 19/09/2018.
13. Jensen, MB & Foged, IW, *Thermal Tower 2018*, 2018, Sound/Visual production (digital). <<https://vimeo.com/287128211>>
14. Andersson, L, Foged, IW, Jensen, MB & Thiis, L, *We love bricks*, 2014, 2D/3D (psysical products). <http://www.utzoncenter.dk/dk/besoeg/afholdte_udstillinger/we_love_bricks_vi_elsker_tegl.htm>
15. Jensen, MB & Foged, IW 2014, Cellular Automata as a learning process in Architecture and Urban design. in E Mine Thompson (ed.), *Fusion - Proceedings of the 32nd eCAADe Conference*. vol. 1, eCAADe, Newcastle upon Tyne, England, UK, pp. 297-302, eCAADe 14, Newcastle, United Kingdom, 10/09/2014. <http://cumincad.scix.net/cgi-bin/works/Show?_id=ecaade2014_191&sort=DEFAULT&search=mads%20brath&hits=5>
16. Foged, IW, Pasold, A & Jensen, MB 2014, Evolution of an Instrumental Architecture. in *Fusion: Proceedings of the 32nd eCAADe Conference*. vol. 2, ecaade2014_070, eCAADe, pp. 365-372, eCAADe 2014 : Fusion - Data Integration at its best, Newcastle upon Tyne, England, United Kingdom, 10/09/2014. <<https://www.northumbria.ac.uk/browse/ne/unievents/conferences/ecaade/>>
17. Andersson, L, Foged, IW, Kirkegaard, PH, Jensen, MB & Parigi, D, *Utzon(x) 2013 - Tetra Leaf: Unfolding Utzon*, 2013, 2D/3D (psysical products). <http://www.utzoncenter.dk/dk/besoeg/udstillinger/joern_utzon_arkitektur_til_mennesker_del_2.htm>
18. Foged, IW & Jensen, MB 2013, Aero Pavilion. in C van Uffelen (ed.), *Creating Shade: Design, Construction, Technology*. Braun Publishing AG. <<http://www.amazon.com/Creating-Shade-Construction-Technology-Architecture/dp/3037681357>>
19. Foged, IW, Pasold, A, Jensen, MB & Poulsen, ES 2013, Acoustic Pavilion 2011. in *Shade Architecture*. Van Uffelen . <<https://braun-publishing.ch/en/architecture/creating-shade.html>>
20. Poulsen, ES, Andersen, HJ, Jensen, OB & Jensen, MB 2012, A Case Study of Mediated Urban Architecture: Red Pavillion 2010. in V Andrade, S Smith & D Bendix Lanng (eds), *Musings: An Urban Design Anthology*. 1 edn, Aalborg Universitetsforlag, Aalborg, pp. 36-45.
21. Foged, IW, Pasold, A, Jensen, MB & Poulsen, ES 2012, Acoustic Environments: Applying Evolutionary Algorithms for Sound based Morphogenesis. in *ECAADe 2012 - Digital Physicality | Physical Digitality*. 1 edn, eCAADe, pp. 347-353, eCAADe 2012 conference, Prague, Czech Republic, 12/09/2012. <http://cumincad.scix.net/cgi-bin/works/Show?_id=ecaade2012_105>

22. Jensen, MB, Kirkegaard, PH & Holst, MK 2010, A Morphogenetic Design Approach with Embedded Structural Analysis. in *Proceedings of International Symposium of the International Association for Shell and Spatial Structures (IASS) : Spatial Structures - temporary and permanent: Shanghai, China, November 8-12 2010*. China Architecture & Building Press, Shanghai, pp. 1110-1120, International Symposium of the International Association for Shell and Spatial Structures : IASS 2010, Shanghai, China, 08/11/2010.
23. Jensen, MB, Kirkegaard, PH & Holst, MK 2010, A Morphogenetic Design Approach with Embedded Structural Analysis. in *Proceedings of International Symposium of the International Association for Shell and Spatial Structures (IASS) : Spatial Structures - temporary and permanent: Shanghai, China, November 8-12 2010*. China Architecture & Building Press, Shanghai, International Symposium of the International Association for Shell and Spatial Structures : IASS 2010, Shanghai, China, 08/11/2010.
24. Foged, IW, Kirkegaard, PH, Christensen, JT, Jensen, MB & Poulsen, ES 2010, Shape Control of Responsive Building Envelopes. in *Proceedings of International Symposium of the International Association for Shell and Spatial Structures (IASS) : Spatial Structures - temporary and permanent: Shanghai, China, November 8-12 2010*. China Architecture & Building Press, Shanghai, pp. 2602-2609, International Symposium of the International Association for Shell and Spatial Structures : IASS 2010, Shanghai, China, 08/11/2010.
25. Foged, IW, Kirkegaard, PH, Christensen, JT & Jensen, MB 2010, Shape Control of Responsive Building Envelopes. in *Proceedings of International Symposium of the International Association for Shell and Spatial Structures (IASS) : Spatial Structures - temporary and permanent: Shanghai, China, November 8-12 2010*. China Architecture & Building Press, Shanghai, International Symposium of the International Association for Shell and Spatial Structures : IASS 2010, Shanghai, China, 08/11/2010.
26. Jensen, MB, Mortensen, HR, Mullins, M & Kirkegaard, PH 2009, Material Systems: a design approach. in G Çağda & B Çolakoğlu (eds), *eCAADe2009 : Computation : the new realm of architectural design: 27th eCAADe Conference, september 16-19, 2009, Istanbul, Turkey*. eCAADe, Education and Research in Computer Aided Architectural in Europe, eCAADe, Istanbul, Turkey, 16/09/2009. <<http://www.ecaade09.itu.edu.tr/>>
27. Jensen, MB, Mortensen, HR, Mullins, M & Kirkegaard, PH 2009, Material Systems: A Design Approach. in *Computation : The New Realm of Architectural Design: 27th eCAADe Conference Proceedings*. eCAADe, Education and Research in Computer Aided Architectural in Europe, eCAADe 2009, Istanbul, Turkey, 16/09/2009.

Projects

Creative Robotics in Architecture

Worre Foged, I., Jensen, M. B. & Das, A.
 Boligfonden Kuben
 01/10/2018 → 01/04/2022

Utzon(x) Research-by-design

Andersson, L., Worre Foged, I., Kirkegaard, P. H., Jensen, M. B., Parigi, D., Bosia, D. & Juel Thiis, L.
 Det Obelske Familiefond
 01/01/2013 → 31/12/2020

Acoustic Tectonics Studio 2019

Worre Foged, I. & Jensen, M. B.
 04/02/2019 → 26/02/2019

Whispering Wall

Worre Foged, I., Jensen, M. B. & Pasold, A.
 01/05/2018 → 30/11/2018

Thermal Tower 2017-18

Jensen, M. B. & Worre Foged, I.
 01/07/2017 → 31/07/2018

Utzon(x) Research Pavilion 2017-18

Worre Foged, I. & Jensen, M. B.
 19/08/2017 → 01/06/2018

Acoustic Tectonics Studio 2018

Worre Foged, I. & Jensen, M. B.
 05/02/2018 → 28/02/2018

Acoustic Tectonics Studio 2016

Worre Foged, I. & Jensen, M. B.
05/08/2016 → 23/08/2016

Acoustic Tectonics Studio 2015

Worre Foged, I. & Jensen, M. B.
03/08/2015 → 24/08/2015

Parametric Urbanism Studio 2014

Jensen, M. B.
02/06/2014 → 30/06/2014

Aero Architectural Studio 2013

Worre Foged, I. & Jensen, M. B.
01/03/2013 → 20/03/2013

Acoustic Pavilion 2012

Worre Foged, I., Pasold, A. & Jensen, M. B.
01/03/2012 → 01/11/2012

Parametric Urbanism Studio 2012

Worre Foged, I. & Jensen, M. B.
16/02/2012 → 09/03/2012

AP: Acoustic Pavilion

Worre Foged, I., Pasold, A., Jensen, M. B. & Skouboe, E. B.
01/02/2011 → 01/09/2011

Aero Architectural Studio 2011

Worre Foged, I. & Jensen, M. B.
01/02/2011 → 09/03/2011