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Curriculum Vitae

Name:	**Jeppe Cornelius Jönsson**
Address:	Søllerødvej 86B 2840 Holte
Date of Birth:	26.02.61
Nationality:	Danish
Education:	Ph.D. from Technical University of Denmark, 1990 M.Sc. degree in engineering from Technical University of Denmark, 1986
Profession:	Professor in Design of Civil Engineering Structures
Employed at:	DTU Civil Engineering Technical University of Denmark Brovej Building 118 2800 Kgs. Lyngby Denmark

Languages

Danish and English as technical working languages

	Speech	**Reading**	**Writing**
English	**Perfect**	**Perfect**	**Perfect**
German	Reasonable	good	poor

Professional Highlights

Dr. Jönsson is specialized within the field of static's, dynamics and stability of structures. He has extensive knowledge of the theory of thin-walled structures and its application from both research and practical applications. Dr. Jönsson has practical experience with design of large steel structures and earthquake analysis of high rise concrete structures. Further he has experience with dynamic analysis and load determination in relation to rhythmic human loading. Dr. Jönsson has performed research in distortion of thin-walled beams and initiated research on plastic stability analysis of steel structures. Currently his focus is on light weight structures and distortional mechanics as well as the structural use of glass and thin-walled glass elements.

Professional Positions

November 2009 - , DTU Civil Engineering, DTU

Head of Section of Structural Engineering

November 2005 - , DTU Civil Engineering, DTU

Professor in Design of Civil Engineering Structures

September 2004 –October 2005, DTU Civil Engineering, DTU

Associate Professor in Structural Engineering

November 1995 -August 2004, ES Consult A/S

Senior Structural Engineer working with projects such as the following:

- **DR's new concert hall – external facade steel** – assisting NIRAS with the development of the design concept and initial design of a large steel facade structure with an external blue projection screen and an internal glass facade. The structure has a diagonally pre stressed cable net for bearing of the internal glass facade and also horizontal pre stressed cables for stabilization purposes.
- **Banja Luka New Police Academy, Bosnia-Herzegovina** – In connection with the construction of a multistory dormitory, a gymnasium and lecture halls an independent verification of structural calculations and ad hoc solution of static problems was performed. An earthquake verification of the reinforced concrete structure according to Eurocode was performed. The project was financed by EC-Del of the European Union. As international consultant for Louis Berger SA.
- **Prizren Town Hall, Kosovo** – In connection with the design of the multi story reinforce concrete building I have as an international consultant for Louis Berger SA performed independent and on going verification of all the structural calculations including earthquake analysis.
- **EAR Tower, Pristina, Kosovo** – In connection with the renovation of the damaged 10 story reinforced concrete office building I assessed structural earthquake design of the existing tower, when analyzed using Eurocodes 1, 2 and 8. I worked for Louis Berger SA as a sub consultant.
- **Lifting gear** – For BMM-Industri I assist in the design of lifting gear for the lift of burdens such as windmill towers, windmill nacells, wings, ships diesel engines etc.
- **SkanDek** – design of prefabricated isolated thin-gauge steel roofing elements with a width of 3.6m and a span up to about 18m. See www.skandek.dk
- **Fields Shopping Center, Amager** – I have assisted Niras with structural design and detailing of a new very large shopping center.
- **VW exhibition and sales hall, Amager** – I performed structural steel detailing and analysis of the beautiful steel structure including large span steel lattice girders.
- **Idrætsparken, national football stadium** – I assisted Rambøll and Skanska with detailing of structural steel connections for the new moveable roof built in connection with *Eurovision song contest 2001*.

- **Renovation project for the "Nordisk Fjer" building** – I was responsible for the design and detailing of the new top level steel structures and for the diaphragm stiffening of the main levels of the multi story building. (At Niras)
- **VW Test Facility, Greenland** – Structural steel design of a new and very large sledge substructure for the domestic and garage facilities of a Volks Wagen Test Facility 150 km within the ice cap on Greenland. (At Niras)
- **Thin wall software** – I have supervised and collaborated with Edick Randell from Boeing in the development of commercial software for analysis of thin-walled beams.
- **Avedøreværket Block 2** – responsible for the overall computer model and loading of the large beam structure. Responsible for the design and detailing of the LuFo/DeNox (air preheater etc) steel structures, the steel stair cases and for typical standardized connections used in the main levels of the power plant. Responsible for the evaluation of wind loading from wind tunnel test reports. Joint venture project between Niras and ES-Consult A/S.
- **Steel deck in Silo, Asnæs** – I assisted Rambøll with design and detailing of the machinery steel deck within a concrete ash silo for the Asnæs power plant.
- **Stressed skin design** of the roofs of multiple large structures such as shopping malls, large factories and airport terminals.
- **Development of computer program** for calculation and output of new load capacity tables for trapezoidal sheeting, liner trays, Z-purlins and general thin-gauge profiles. Programming in Microsoft Visual C++ for Haironville Danmark A/S.
- **Test of bitumen roofs** – Preparation and planning of fire tests of bitumen roofs for the Danish ministry
- **Research in distortion of thin-walled beams** – supported by the Danish Technical Research Council (STVF with a grant of 481.000 DKr), cf. publication [1-3].
- **Mobilix antennas** – Design of steel lattice pylons.
- **Research in "man induced vibrations"** supported by the Danish Technical Research Council within the frame project "Dynamics of Structures" at AUC.
- **Human vibration** – Assistance in derivation and analysis of loading and design criteria for human induced vibrations. (For AEC and NIRAS).
- **Earthquake analysis** of the overall eccentric design of Hangar Air Algerie to assess that the rules of Eurocode 8 were applicable. (For Rambøll)
- **Ship collision analysis** – Spot checks of the contractors' caisson design by performing head on bow collision analysis on the proposed caissons of the Øresund Link Bridge. (For the ØTC Consortium)

April 1991 - October 1995, Aalborg University

Assistant Professor in Computational Mechanics and Computer Aided Analysis Department of Building Technology and Structural Engineering

April 1993 - October 1995, ES Consult A/S

Research Engineer

Employed on an hourly basis with research on wheel and rail interaction forces in cooperation with the Danish State Railways (DSB).

October 1988 - March 1991, Haironville Danmark A/S

Structural engineer
Engaged in design of thin-gauge structures and development of sales material for products such as purlins, trapezoidal sheeting, sandwich panels, composite steel floors and thin-walled lattice girders

Ph.D. education

October 1990

Awarded the Ph.D. degree on the basis of the research work reported in my thesis *Recursive Finite Elements for Buckling of Thin- Walled Beam*

December 1987 - March 1988, Rambøll & Hannemann

Cooperative research at Rambøll supported by Anker Engelunds Fond

February 1986 - October 1988, Technical University of Denmark

Enlisted as Ph.D. student at the Department of Structural Engineering, with Professor Dr. Techn. Steen Krenk and Associate Professor Lars Damkilde as my supervisors

Master education

January 1986

M.Sc. degree in engineering from the Technical University of Denmark. The English title of the thesis is "Thin-walled beam structures".

June 1985 - August 1985, COWI

Summer employment as a trainee in structural engineering. Engaged **in** design of a large shedded steel structure.

July 1984 - August 1984, KIDAN / Israel

IAESTE exchange student in Israel working as a structural engineering trainee. Engaged in design of domestic multi-story reinforced concrete structures.

July 1983 - December 1983, UTDC R&D / Canada

IAESTE exchange student in Canada working at Urban Transportation Development Corporation, Research & Development.
Engaged in stress analysis of a railway truck (bogie) and natural frequency analysis of sub-way car bodies.

September 1980- January 1986, Technical University of Denmark

Enlisted as engineering student.

Teaching experience

Courses, AUC
Beam structures 1, Beam structures 2, Structural steel design 2, Displacement method and finite elements, The finite element method 2, Finite element analysis in dynamics 2, Theory of thin-walled beams, Mechanics of beam and plate flexure (Statics 2), Strength and stiffness analysis, Design of building structures,

Courses, DTU Civil Engineering
Concrete, steel and wood structures (3 week course)
Concrete structures
Advanced steel structures
Seismic and wind engineering
Structural design
Integrated structural design
Glass and glass structures

Experience as supervisor

1991-1995 Supervisor for numerous 7-9 term semester projects, AUC.
1992 Supervisor of master project: *Analysis and design of a steel box girder*, AUC
1995 Supervisor of master project: *A material model for concrete in tri-axial stress states*, AUC
2004- Supervisor of numerous master and bachelor exam projects, DTU
2006-2010 Supervisor of PhD project on *Facetted glass shell,* PhD Anne Bagger, DTU
2006-2011 Co-supervisor of PhD project on *Pedestrian loading*, PhD-student Einar Ingolfsson, DTU
2008- Supervisor of PhD project on *Generalized Distortional Beam Theory*, PhD-student Michael Joachim Andreassen, DTU
2009- Co-supervisor of PhD project on *Structural design of light weight composite floor and roof panels*, PhD-student Ieva Paegle, DTU

Engagements

Member of the Danish standard committee S-412 for codes of practise for steel, thin-gauge steel, aluminium and composite structures

Member of the board of the Danish Society for Structural Science and Engineering (DSBy – Dansk Selskab for Bygningsstatik)

Member of the IDA's committee for the certification of structural engineers (Statiker-anerkendelsesudvalget)

Publications

1. J. Jönsson & M.J.Andreassen. Distortional eigenmodes of homogeneous solutions for semi-discretized thin-walled beams. *Thin-Walled Structures*, 49(6), 691-707, 2011.
2. E.T.Ingólgsson, C.Georgakis, F.Riciardelli & J.Jönsson. Experimental identification of pedestrian-induced lateral forces on footbridges. *Journal of Sound and Vibration*, 330(6), 1265-1284, 2011.

3. A.Jahanpour, J.Jönsson & H.Moharrami. An experimental investigation of the seismic behavior of semi-supported steel shear walls. Proceedings of the Fourth International Conference on Structural Engineering Mechanics and Computation, SEMC, SRC Press, Cape Town, South Africa, 2010

4. J. Jönsson & M.C.Andreassen. Distortional Modes of Thin-Walled Beams. Proceedings of the 7th EUROMECH Solid Mechanics Conference, ESMC2009, Lisbon, 2009

5. J.Jönsson. Diaphragm Action in Thin-Gauge Steel SkanDek Roof Elements: Modeling and Experimental Investigation. Proceedings of the 7th EUROMECH Solid Mechanics Conference, ESMC2009, Lisbon, 2009

6. G.Fischer, L.H.Lárusson & Jeppe Jönsson. Prefabricated floor and roof panels with engineered cementitious composites (ECC). In Conference proceedings of ASCE Structures Congress. Austin, Texas, USA, 2009

7. L.H.Lárusson, G.Fischer & J.Jönsson. Mechanical Interaction of ECC with Fiber Reinforced Polymer (FRP) rebar in tensile loading. Confrence Proceedings of Advanced Concrete Materials Conference. Stellenbosch, Republic of South Africa, 2009

8. L.H.Lárusson, G.Fischer & J.Jönsson. Application of Engineered Cementitious Composites (ECC) in modular floor panels. 7th RILEM International Symposium on Fibre Reinforced Concrete, BEFIB, Chennai (Madras), India, 2008

9. J. Jönsson. Rigid-Plastic Post-Buckling Analysis of Columns and Quadratic Plates. In Mahendran, M. (Ed.), Thin-walled Structures: Recent Innovations and Developments p.1145-1152, 2008.

10. J. Jönsson, Rigid-plastic stability analysis of slender quadratic plates, *Proceedings of the Third International Conference on Structural Engineering Mechanics and Computation, SEMC*, Millpress, September 2007.

11. A. Bagger, J. Jönsson & T. Wester. Investigation of stresses in facetted glass shell structures. In: Shell and Spatial Structures: Structural Architecture: Towards the future looking to the past, IASS Symposium 2007

12. A. Bagger, J. Jönsson, H. Almegaard & T. Wester, Facetted Shell structure of glass, in proceedings of the *Glass Performance days*, Tampere, Finland, 111-114, june 2007.

13. E.T. Ingólfsson, C. Georgakis, J. Jönsson & F. Ricciardelli, Vertical footbridge vibrations: Towards an improved and codifiable response evaluation, *Proceedings of the Third International Conference on Structural Engineering Mechanics and Computation, SEMC*, Millpress, September 2007

14. J. Jönsson, Distortional Theory of Thin-walled Beams. *Thin-walled Structures,* Vol. 33, No. 4, 245-268, 1999.

15. J. Jönsson, Distortional Warping Functions and Shear Distributions in Thin-walled Beams. *Thin-walled Structures*, Vol. 33, No. 4, 245-268, 1999.

16. J. Jönsson, Determination of Shear Stresses, Warping Functions and Section Properties of Thin-walled Beams using Finite Elements. *Computers & Structures*, Vol. 68, 393-410, 1998.

17. J. Jönsson & L. Pilegaard Hansen, *The Structural Influence on Repetitive Vertical Human Loading*, R9804 & R9805, Department of Building Technology and Structural Engineering, Aalborg University, February 1998.

18. J. Jönsson, *Repetitive Vertical Human Loading, Part I - Theoretical Investigation*, R9753, Department of Building Technology and Structural Engineering, Aalborg University, September 1997.

19. J. Jönsson & L. Pilegaard Hansen, *Repetitive Vertical Human Loading, Part II - Experimental Investigation*, R9754, Department of Building Technology and Structural Engineering, Aalborg University, September 1997.

20. J. Jönsson, Computational Investigation of Repetitive Vertical Human Loading, in the proceedings of *Ninth Nordic seminar on computational mechanics*, Technical University of Denmark, 1996.

21. J. Jönsson, E. Svensson & J. T. Christensen, Strain Gauge Measurement of Wheel-Rail Interaction Forces, *Journal of Strain Analysis,* Vol. 32, No. 3, 183-191, 1997.

22. S. Krenk, J. Jönsson & L. P. Hansen, Fatigue Analysis and Testing of Adhesive Joints. *Engineering Fracture Mechanics,* Vol. 53, No. 6, 859-872, 1996.

23. Hededal, J. Jönsson, E. A. Jensen, & H. V. Vedstesen, Elasto-Plastic Model for Concrete, *Eighth Nordic Seminar on Computational Mechanics*, Department of Structural Mechanics, Chalmers University of Technology, Sweden, November 1995.

24. J. Jönsson, *Continuum Mechanics of Beam and Plate Flexure,* Department of Building Technology and Structural Engineering, Aalborg University, (222 pages), July 1995.

25. L. P. Hansen & J. Jönsson, *Statiske og Dynamiske Forsøg med Tribuneelement fra Aalborg Stadion.* (ISSN 0902-7513 R9501), Department of Building Technology and Structural Engineering, Aalborg University, January 1995.

26. S. Krenk, L. P. Hansen & J. Jönsson, Crack Growth and Fatigue Life of Adhesive Aluminum Joints. Proceedings from the *Sixth International Conference on Aluminum Weldments,* INALCO, April 1995.

27. J. Jönsson, S. Krenk & L. Damkilde, Recursive Substructuring of Finite Elements. *Computers & Structures,* 54, 395-404, 1995.

28. J. Jönsson, S. Krenk and L. Damkilde, The Semi-Loof Element for Plate Instability. *Communications in Numerical Methods in Engineering,* 10, 11-19, 1994.

29. P. Leylde, J. Jönsson & S. Krenk, FEM Stress Determination by Virtual Work. *Seventh Nordic Seminar on Computational Mechanics,* ed. by Kollbein Bell. ISBN 82-7482-017-7, Department of Structural Engineering, Then Norwegian Institute of Technology, Trondheim, Norway, 1994, pp. 22-25

30. J. Jönsson & L. Pilegaard Hansen, Man-Induced Vibrations. *Dynamics of structures a workshop on dynamic loads and response of structures and soil dynamics.* Aalborg University, Denmark, September 1994.

31. L. P. Hansen, S. Krenk, J. Jönsson, L. Thesbjerg & J. Lyngbye, *Fatigue Tests on Aluminum Adhesive Joints,* EUREKA 269, Department of Building Technology and Structural Engineering, Aalborg University, 1993.

32. J. Jönsson, S. Krenk and L. Damkilde, A Hybrid Displacement Plate Element for Bending and Stability Analysis. *Computers & Structures.* Vol. 48, no. 6, pp. 1125-1139, 1993.

33. J. Jönsson, S. Krenk and L. Damkilde, A Hybrid Displacement Plate Element. *Fifth Nordic Seminar on Computational Mechanics,*ed. by Kirsten Aakjær. ISSN 0902-7513 R9231, Department of Building Technology and Structural Engineering, University of Aalborg, Denmark, 1992, pp. 162-166.

34. J. Jönsson, Distortional Lateral Buckling of Z and C Purlins, *Nordic Steel Colloquium on Research and Development within the Field of Steel Construction.* The Danish Steel Institute, Odense, Denmark, 1991, pp. 217-228.

35. J. Jönsson, S. Krenk and L. Damkilde, The Semi-Loof Element for Plate Instability. *Fourth Nordic Seminar on Computational Mechanics,* Lund University, Sweden, 1991.

36. J. Jönsson, *Recursive Finite Elements for Buckling of Thin- Walled Beams,* Ph.D. thesis (204 pages). Report series R263, Department of Structural Engineering, Technical University of Denmark, 1990.

37. J. Jönsson, *Rammer opbygget af tyndpladeprofiler del* 1 *og* 2, master's thesis from the Department of Structural Engineering, Technical University of Denmark, 1986.