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Steven T. Craft, PhD, PEng

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CURRICULUM VITAE

Dr. Steven Craft has conducted industry research involving fire testing and analysis; engineered fire safe designs for innovative buildings; provided in-depth fire analysis for large-loss fires; and conducted peer reviews of fire safety engineering designs. Dr. Craft has recently worked on a number of unique projects involving tall wood buildings which rely on alternative solutions to satisfy the building code requirements. Recent projects include the Wood Innovation Design Centre in Prince George, BC completed in 2014 and a peer review of the Alternative Solution to build the 19-storey Terrace House in Vancouver BC to be completed in 2019.

Dr. Craft is an expert in the area of wood structures, fire resistance and wood science. Dr. Craft is an Adjunct Professor at Carleton University and has taught a number of courses including Wood Engineering, Fire Dynamics and Wood Structures and Fire Safety in addition to supervising graduate students in the Fire Safety Engineering program. His expertise is also recognized internationally having been appointed to the Editorial Advisory Board of the Fire and Materials Journal. In addition, he chairs a number of committees such as the ULC Fire Test Committee and a task group under the Canadian Wood Design Standard, CSA O86 on Fire Resistance.

Dr. Craft has conducted research related to wood structures and fire over a 15-year period while working with Carleton University and FPInnovations. He has worked with the wood industry on critical issues related to fire resistance including adhesive performance when exposed to fire, the introduction of fire resistance design into the Canadian Wood Design Standard and the development of design criteria for the fire resistance of Cross-laminated Timber. He has a unique background having completed his PhD in Fire Safety Engineering at Carleton University after studying structural design and wood science as part of the Forest Engineering program at the University of New Brunswick.

SPECIALIZED EXPERTISE

- Fire Science and Engineering
- Fire Research
- Wood Structures and Fire Safety
- Building Codes Development
- Standards Development
- Fire Testing

COMMITTEES

2017 – Present — Chair of ULC S100a Committee on Fire Tests

The ULC Standards Committee on Fire Tests is responsible for developing and maintaining standards pertaining to development of test methods for evaluating building materials, assemblies and furnishings used in buildings when exposed to fire conditions; standards based on performance when subjected to test conditions; and standards for the engineering design of assemblies and structural elements for exposure to fire conditions.

2018 – Present — Chair of National Research Council Committee on Wildland Urban Interface Fires

NRC is developing the first national guide on wildland urban interface fires including provisions to make buildings less prone to ignition, to help community planning efforts and to guide in the determination of risk base on local factors.

2015 – Present	CSA 086 Engineering Design in Wood Technical Committee The CSA Technical Committee has responsibility for CSA O86, Engineering Design in Wood and CSA S347 Method of test for evaluation of truss plates used in lumber joints.
2015 – Present	Editorial Advisory Board of the Fire and Materials Journal. Fire and Materials is an international journal for scientific and technical communications related to materials and associated products exposed to fire.
2009 – Present	Chair of CSA O86 Task Group on Fire Resistance. The Task Group has introduced design for fire resistance into the 2014 edition of CSA O86. More recently, the Task Group has introduced design criteria for CLT into the 2016 update.
2006 – Present	ASTM E05 Committee on Fire – currently member on the Executive Committee The ASTM E05 Committee on Fire Standards is responsible for the development and revision of fire standards intended for analysis and assessment of the fire performance of materials, products and assemblies.
2006 – 2017	Chair of Task Group on Exterior Fire Tests, and member of the ULC S100a Committee on Fire Tests The ULC S100a committee develops and maintains standards used in the evaluation of building materials, assemblies and furnishings used in buildings when exposed to fire.
2007 – 2014	Scientific Committee for International Conference on Structures in Fire The SiF conference is the leading international conference on the topic of fire performance of structures. The conference started in 2000 and takes place every two years. The conference includes all types of structural materials and has a focus on the most current research conducted around the world.
2009 – 2015	ISO TC92 SC4 – Fire Safety Engineering The work conducted under SC4 includes standards related to Fire Safety Engineering such as a General Principles document, which provides guidance on performance-based design as well as a number of documents providing guidance and examples of how fire safety engineering principles can be applied.
2008 – 2011	Secretary of CIB W14 The commission promotes and supports science-based fire safety engineering and its use for performance-based fire safety designs. The work conducted is predominately pre-normative with the idea that research and ideas are developed which can be adopted and used by committees such as ISO TC92 SC4.
2009 – 2011	Scientific Steering Committee, NSERC Strategic Network on Innovative Wood Products and Building Systems (NEWBuildS) The NEWBuildS network is an NSERC Forest Sector R&D initiative which focuses the use of traditional wood frame construction in mid-rise buildings as well as the use of new massive timber systems.

PROFESSIONAL REGISTRATIONS AND AFFILIATIONS

- Society of Fire Protection Engineers (SFPE)
- Registered Professional Engineer – Ontario, New Brunswick, Alberta and British Columbia

PROFESSIONAL EXPERIENCE

2011 – Present	**CHM Fire Consultants Ltd.,** Fire Science Research and Engineering Principal and Co-founder
2010 – Present	**Carleton University** Adjunct Professor and Lecturer
2006 – 2011	**FPInnovations,** National Forest Products Research Institute Senior Research Scientist

EDUCATION

2009	**Doctorate in Philosophy (PhD) (Fire Safety Engineering)** Carleton University, Ottawa, Ontario
2001	**Bachelor of Science in Forest Engineering (BScFE)** University of New Brunswick, Fredericton, New Brunswick

PUBLICATIONS

2019	**Relative humidity versus moisture content relationship for several commercial wood species and its potential effect on flame spread** Hasburgh, L, Craft, S.T., Van Zeeland, I., Zelinka, S.L. Fire and Materials, vol. 43, No. 4, p.365-372
2018	**Test Methods to Evaluate the Adhesive Performance in CLT when Exposed to Fire** Craft, S., Barber, D., Klippel, M., Schmid, J. and Frangi, A. Proceedings of the 2018 World Conference on Timber Engineering
2018	**Ability of Finger-jointed Lumber to Maintain Load at Elevated Temperatures** Rammer, D.R., Zelinka, S.L., Hasburgh, L.E., Craft, S.T. Wood and Fiber Science, vol. 50, No. 1, p.44-54.
2017	**Ontario's Tall Wood Building Reference – A Technical Resource for Developing Alternative Solutions under Ontario's Building Code** Craft, S.T. and Moses, D. Produced for the Ontario Ministry of Natural Resources and Forestry
2017	***Rationalization of Cross-Laminated Timber Design Standards*** Craft, S.T. and Van Zeeland, I. Proceedings of the Fifteenth International Conference Fire and Materials.
2013	***Creating a Fire-safe Construction Site*** S. Craft, I. Van Zeeland and S. Street Construction Canada, July 2013 Issue
2013	***CLT Contribution to Compartment Fires*** Hadjisophocleous, G., McGregor, C. and Craft, S.T. Proceedings of the Thirteenth International Symposium Interflam
2013	***Fire Resistance Tests on Cross-Laminated Timber Floor Panels*** Aguanno, M., Hadjisophocleous, G.V. and Craft, S.T. Proceedings of the Thirteenth International Conference Fire and Materials.

2011 ***Investigation of the Behaviour of CLT Panels Exposed to Fire***
Craft, S.T., Desjardins, R. and Mehaffey, J.R.
Proceedings of the Twelfth International Conference Fire and Materials.

2011 **CLT Handbook, Chapter 8 – Fire Performance of Cross-Laminated Timber Assemblies**
Craft, S.T.
Published by FPInnovations

2008 ***Predicting the Thermal Response of Gypsum Board Subjected to a Constant Heat Flux***
Craft, S.T.; Isgor, B.; Hadjisophocleous, G.V. and Mehaffey, J.R.
Fire and Materials, 32, p 333-355.

2008 ***Modelling Heat and Mass Transfer in Wood-frame Floor Assemblies Exposed to Fire***
Craft, S.T., Isgor, B., Mehaffey, J.R. and Hadjisophocleous, G.V.
Proceedings of the Ninth International Symposium – Fire Safety Science

2008 ***Development of Small-scale Evaluation Methods for Wood Adhesives at Elevated Temperatures***
Craft, S., Desjardins, R. and Richardson, L.
Proceedings of the 10th World Conference on Timber Engineering

2007 ***Predicting the Temperature Rise in Light-frame Wood Floor Assemblies Exposed to Fire***
Craft, S.T., Mehaffey, J.R., Hadjisophocleous, G. and Isgor, B.
Proceedings of the Eleventh International Interflam Conference

2007 ***Predicting the Fire Resistance of Light-Frame Wood Assemblies***
Craft, S.T., Mehaffey, J., Isgor, B., and Hadjisophocleous, G.
Proceedings of the Eleventh International Conference on Fire and Materials

2006 ***Predicting the Fire Resistance of Light-Frame Wood Floor Assemblies***
Craft, S., Hadjisophocleous, G., Isgor, B. and Mehaffey, J.
Proceedings of the Fourth International Workshop, Structures in Fire

2005 ***Fire Response of Gypsum Board and Wood Framing***
Craft, S., Mehaffey, J., Hadjisophocleous, G., and Isgor, B.
Proceedings of the Eighth International Symposium, International Association for Fire Safety Science

2004 ***Analysis of Fire Experiments Conducted in Wood-frame Housing***
Craft, S., Mehaffey, J., Richardson, L.
Proceedings of Wood and Fire Safety Conference, Slovakia.

2003 ***Fire Experiments in Furnished Houses***
Mehaffey, J.R., Craft, S.T., Richardson, L.R. and Batista, M.
Proceedings of 4th International Seminar on Fire and Explosion Hazards

2002 **Fastener *head pull-through resistance of plywood and oriented strand board***
Chui, Y.H. and Craft, Steven.
Canadian Journal of Civil Engineering. 29. pp 384-388.

2001 ***Design capacities of joints with laterally loaded nails***
Smith, I., Craft, S.T., Quenneville, P.
Canadian Journal of Civil Engineering. 28(2). pp 282-290.