

Ontario Natural Building Coalition Conference 2023 Presenters



Ben Polley – Evolve Builders Group

Ben's professional pursuits have always had an environmental purpose. As General Manager of computerized energy management system provider DML Control Inc, he won Natural Resources Canada's prestigious National Energy Efficiency award (1999) for best energy savings results in the entire commercial/industrial sector.

A personal interest in natural building subsequently led Ben to found strawbale wall contractor Harvest Homes in 2000.

Intending to apply his business experience while learning the technical details in this new industry, Ben surrounded himself with gifted craftspeople and trades. His intention was to learn how to build his own strawbale home and in so doing, hopefully eke out a living working with and for like-minded people. To his pleasant surprise, Ben discovered that the market was more than ready for such a business and both sales and staff capabilities grew rapidly.

In 2003 Ben designed then rallied volunteers and suppliers to build "Home Alive! – The house that thinks, drinks and breathes." This demonstration home was erected at the National Home Show (Toronto) as the feature home before being relocated by Harvest Homes' crew and yet more volunteers, then donated to the non-profit Everdale Environmental Learning Centre. Ben in turn became Home Alive's first tenant, until renovating and reconstructing a heritage house in Guelph into which he moved a few years later.

In view of this growth, Ben spun off Evolve Builders Group Inc as a sister design & construction company in 2006, providing a breadth of turnkey climate-conscious new construction, renovation, and efficiency retrofit services across southern Ontario (and coming soon too to Greater Sudbury area!). While Harvest Homes returned to its roots of providing strawbale (and soon hempcrete) walls, additional spin-off division Fermata - Works of Earth now crafts cob, adobe and rammed earth, tadelakt and other earthen based walls.

Together Ben aims to wield these divisions to be industry-influencing incubators of ideas, of people and of solutions that produce ever-changing, always-improving, resilient, adaptive, climate-friendly design, construction and management options to homeowners, general contractors and developers across Ontario.



Deirdre McGahern - Straworks

Deirdre McGahern is a designer, natural builder, and small business owner. In 2004, she started Straworks, a design-estimate-build company based in Peterborough, ON. Since then, Straworks has designed, estimated, and built 15 straw bale buildings from start-to-finish, and plastered another 20. As a long-time climate activist and maker of things, straw bale building is where all her sides meet.

Today Straworks is working on climate change, one building at a time. By choosing more plant-based materials that store carbon dioxide, and fewer materials with high carbon emissions, we are committed to being part of the solution to the climate crisis. Our goal is to build net zero embodied carbon, or better.



Terrell Wong, B.Arch OAA – Stone’s Throw Design

Terrell Wong is an architect with over 30 years experience. Her passion for the environment and design has greatly influenced her career. In 2006, Terrell lead the winning team to the National Archetype Sustainable House Award. Their “Building Blocks” modular home concept was constructed at the Toronto and Region Conservation Authority’s Kortright Centre as a showcase for sustainable design.

In 2009, Terrell was a founding member and President of Passive Buildings Canada, a national membership-based, non-profit organization that promotes the Passive House concept.

Terrell’s firm, Stone’s Throw Design Inc., specializes in low energy residential design. With its focus on building science, the firm creates designs utilizing cutting edge materials and techniques. In 2011, they completed the first insulated rammed earth house in Ontario. This 350m² building has a total heating load of 25kWh/m² and total primary energy use of 100kWh/m² based on the Passive House criteria. This constitutes 1/10th of the energy usage of a comparably sized home. In 2014 the firm fought for the right to build a two storey strawbale addition in the Beaches area of Toronto. Stones Throw Design Inc. is a full service firm that partners with its design team and clients to provide cost effective design and energy solutions. www.stonethrowdesigninc.com

At Stone’s Throw Design we utilize integrated design to provide our clients with the gamut of architectural services. Our respect for natural systems guides our company philosophy; *Conservation over Technology - Longevity over Fashion*

She won the national award for the Archetype Sustainable Home in 2006, and won the award for Renovated Home of the Year in the Home Sweet Home for her own 100yr old residence in 2011. Her pioneering work with rammed earth was showcased in the March issue of “Fine Homebuilding”. She is

the past president of Passive Buildings Canada and is an active member of Ontario Natural Building Coalition and Passive House Canada.



Michal Bartko - Research Officer at National Research Canada

Dr. Michal Bartko is a Research Officer with Building Envelope and Materials group at the Construction Research Center of the National Research Council Canada.

Since he joined the NRC in 2014, he leads and conducts research related to high performance building envelope assemblies, their hygrothermal behavior and airtightness. He has experience with energy simulation studies, focused on issues of overheating in residential buildings and application of passive cooling measures

to reduce the overheating.

Recently, Dr. Bartko is gaining knowledge in whole building LCA methodology and strongly advocates for accelerated practise of zero carbon construction and concentrates on research of low carbon building envelope materials.

Prior to working at the NRC, he worked in academia as well as the third sector in several institutions in the US, Japan, South Korea and his native Slovakia. Michal.Bartko@nrc-cnrc.gc.ca



Tim Krahn – Building Alternatives

Tim is a registered professional engineer and partner in Building Alternatives Inc. He holds a Master's degree in geotechnical engineering and a Bachelor's degree in civil engineering from the University of Manitoba. He has experience in residential and commercial construction and holds a certificate in carpentry and wood working from Red River College. Tim is also a LEED™ accredited professional, an active member of the Timber Frame Guild's Timber Frame Engineering Council and a founding member of the Natural Building Engineering Coalition. Tim spent five years on the board of directors for the Ontario Natural

Builder's Coalition, three of those as chair. He currently sits on the Standing Committee for Housing and Small Buildings (part 9 of the National Building Code) under the Canadian Board for Harmonized Construction Codes (formerly the Canadian Commission for Building and Fire Codes). He is the author of "Rammed Earth Construction", part of the Sustainable Building Essentials series from New Society Publishers (edited by long time OSBBC/ONBC members Jen Feigin and Chris Magwood).

Building Alternatives Inc. (BAI) is a consulting engineering firm licensed in British Columbia, Alberta, Saskatchewan, Manitoba and Ontario. BAI specializes in engineering design using low-embodied energy, low carbon emission materials such as wood, earth, stone, straw, clay, hemp, and lime. This engineering design includes the techniques with which these materials are combined and assembled, and incorporates responsible and appropriate current technologies such as air barrier membranes and

geosynthetics that allow new applications of the older, time tested materials. BAI actively participates in educational programs both at university and college level institutions as well as through professional and trade associations. BAI also provides third-party quality assurance auditing services to the light metal plate wood truss industry.



Kim Degenkolb - Collaborative Architecture

Kim is a German-born designer and problem-solver with a passion for environmentally responsible design. Having grown up in Germany, Kim has been exposed to both North American and European Architecture education and practice. As a recent graduate of Toronto Metropolitan University's Architectural Science Co-op program, she has gained a great amount of knowledge in building science and low-carbon design. Kim is supporting The Architect Builders Collaborative with her embodied and operational carbon research through tool testing and participated in feasibility studies. She is eager to continue exploring new building technologies to contribute to a greener future.



Daniel Hall - Collaborative Architecture

Daniel Hall, O.A.A. is the founding principal of The Architect Builders Collaborative Inc, a 12 person Architecture and Design studio focussed on delivering affordable low carbon design. As the Director of Design, Daniel has responsibility for the overall quality of all of our work and is charged with ensuring that our Clients are delighted with the outcome. We strive to deliver on a triple-P bottom line [People, Planet, & Profits] for all of our projects.

Daniel's portfolio includes a range of projects from the ground breaking off-grid factory-built miniHome to overseeing the \$14 million renovations to the Heritage designated Peel Art Gallery Museum & Archives complex. His area of expertise and research includes affordable low carbon solutions to retrofit Toronto's older building stock, and the potential for new types of low carbon small scale infill housing across the province.

The Architect Builders Collaborative's client base include Homeowners and investors interested in improving Toronto's older housing stock, non-profit organizations renovating their facilities for accessibility and better function, and small scale commercial developers.

Most recently, Daniel has been directing the firm's work with a private sector developer of affordable rental housing on the design and construction of two sites of five buildings each in Huntsville.



Carolyn Moss – Homes to Zero

Carolyn Moss is a graduate of the Architecture program at Carleton University, one of the first LEED accredited Canadians, is Passive House and Net Zero certified and has delivered deep energy retrofits on existing homes in Ontario for over 25 years. She is a licensed architect and principal of MOSS SUND Architects, a successful firm that serves clients across Canada. Her expertise lies in working with homeowners, municipalities, contractors and suppliers to renovate existing houses into high performance, low impact homes that feel great to be in.

For over 2 decades Carolyn has been taking the message of climate action to homeowners and design professionals at events from grass roots green living expos to the Toronto Interior Design Show. She is a founder and Chair of the Net Zero Architects network and, in an effort to increase the rate of home retrofits, in 2020 she co-founded Homes to Zero – a start-up on a mission to see the over 10 million single family homes in Canada retrofit to Net Zero as quickly and equitably as possible.



Colin MacDougall, Professor Department of Civil Engineering Queen's University

Colin MacDougall is a structural engineer and a professor in the Department of Civil Engineering at Queen's University. He was first inspired to think about the sustainability of building materials by Chris Magwood and Peter Mack's book "Straw Bale Building", which was a gift from his mom.

He now has about 20 years of research in the area of natural building materials, including straw bale buildings, hempcrete, compressed earth blocks and timber.