



2017 TFG
Conference

Natural Building Materials

Tim Krahn & Kris Dick
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Codrington, ON

Biosystems professor Kris Dick will present an overview of research at the University of Manitoba, followed by examples of practical applications by Tim Krahn. Materials covered include straw bale, light straw clay, hempcrete, rammed earth, compressed earth block, and, of course, timber.

Kris and Tim are partners in Building Alternatives Inc., a consulting engineering company practising in Canada.

Session outline:

- ◆ Definition of Natural Building Materials
- ◆ Research examples - Alternative Village, Queen's University
 - ◇ Rammed Earth/Straw Bale greenhouse (AV)
 - ◇ Clay plasters (AV & Queen's)
 - ◇ Hempcrete (AV)
 - ◇ Straw bale lab (AV)
 - ◇ Straw bale panels (Queen's)
 - ◇ Thermal testing (AV & Queen's)
- ◆ Built examples
 - ◇ Rammed earth residences: Hanson, Marks-Barker
 - ◇ Straw bale panels: James Street, Ancaster
 - ◇ Hempcrete: Wendover, Cold Springs (hybrid)
 - ◇ Light straw clay: Roseau River
- ◆ Permit challenges, design opportunities, resources
 - ◇ Urban vs Rural jurisdictions
 - ◇ Objective-based code system, adjudication
 - ◇ ICC, Straw Bale appendix
 - ◇ ASTM E-2092 (?) Earthen construction
 - ◇ New Mexico earthen construction code
 - ◇ New Zealand earthen construction code
 - ◇ Design using parallel standards - i.e. Masonry for rammed earth or compressed earth block

About the Speakers

Tim Krahn

Tim is a licensed engineer with degrees in the civil and geotechnical disciplines. His professional interests include natural building materials; integrated design and education; energy and infrastructure sustainability; and a healthy built environment. He is a LEED-accredited professional and heads up the Ontario office of Building Alternatives, Inc.

Kris Dick

Kris Dick is a licensed engineer with degrees in civil and structural engineering. In addition to his role as a principal with Building Alternatives, he is an Associate Professor in Biosystems Engineering and Director of The Alternative Village at the University of Manitoba. His research areas include alternative building design, materials and building envelope performance.