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DRY IDEAS: DESIGNING BUILDINGS WITH MOISTURE IN MIND

John Straube

When the three little pigs built their houses, their top priority was protection from a huffing, puffing wolf. But according to WISE member and civil engineer John Straube, the biggest concern when it comes to building performance is actually water.

In every climate zone on Earth, houses must be designed to handle moisture, whether it's rain on the outside, condensation on the inside or leaks in the plumbing system.

In August, Straube shared the latest research on moisture physics at the 2018 Westford Symposium on Building Science — an annual event that attracts some of the best and brightest researchers and practitioners in the field.

His half-day session covered the fundamentals of the moisture balance: wetting, drying and storage. He discussed how water interacts with building materials like wood and concrete, and he offered strategies for avoiding problems like shrinkage, swelling, mold, rot and corrosion.

As the author of books like *Building Science for Building Enclosures* and *High Performance Enclosures*, Straube has literally written the book on building design best practices. Leveraging field studies, test houses, laboratory methods, and computer simulations, he and his team of researchers at Waterloo focus on avoiding problems, improving performance, developing innovative building materials, improving HVAC systems.

But as his presentation at the Symposium demonstrates, Straube isn't just advancing important research about how weather and interior conditions impact building performance. He's also educating practicing architects, engineers and contractors, helping them maximize the performance of new buildings, find better ways to repair and maintain existing buildings and develop greener building materials and technologies for low-energy, low-carbon and net-zero energy buildings in Canada.

Researcher(s): **Dr. John Straube** (Associate Professor, Civil and Environmental Engineering, UW)

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