



Inspired Building Codes for BC and Beyond

Dr. Fitsum Tariku, Canada Research Chair, Whole-Building Performance

British Columbia was the breeding ground for the leaky condo crisis from the late 1980s to the early 2000s. More than 900 buildings and 31,000 individual housing units sustained approximately \$4 billion in damages over that time due to poorly designed building envelopes that were unsuited for BC's wet, windy weather.

Dr. Fitsum Tariku, Canada Research Chair in Whole-Building Performance, is the director of BCIT's Building Science Centre of Excellence, and one of three Canada Research Chairs at the institute. His research focuses on whole building performance, testing materials before they are used in real-life building scenarios to help us avoid crises like those faced in the past.

"We have seen in the past, with the leaky condo crisis, new materials were introduced without the proper design and research, and they were a huge liability to us and a great cost to British Columbians," says Dr. Tariku. "That might be repeated if we are not conducting our research, applying the research, and then adapting our knowledge and building standards."

By working directly with the construction industry in BC, Dr. Tariku has helped to define new building code standards and optimize the types of materials used for building envelopes. With a focus on whole building performance, his research has evolved to study the interior air quality and energy efficiency of a building. Dr. Tariku conducts his research at three customized building envelope test facilities on BCIT's Burnaby campus that were funded by the Canada Foundation for Innovation (CFI). They include a 48' x 28' structure that provides a controlled environment to test how materials hold up to weather and wear.

"The idea is, if you have new innovation in materials, insulation, sheeting, or whatever, you can have a side-by-side comparison of the new material, new idea, new design versus the code design. We have instrumentation to measure temperature and moisture content, humidity, pressure, and air flow. We also have a weather station on the top of the building to measure rainfall."

Dr. Tariku continues to find new ways to improve upon current building standards and everyday energy consumption – helping to make high performance buildings more affordable and reliable around the world.

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