

## Sustainable structures versus fire hazards - the current score

Dr. Ramla Qureshi<sup>1</sup>

Despite being the most common residential construction material in North America, tall buildings using wood framed construction face limitations due to lack of confidence in fire-based performance objectives. While wood construction is economic and offers a much lighter carbon footprint, there is need to gain a deeper understanding of quantitative risk regarding uncertainties in fire exposure for tall wood-frame buildings, the aleatory upper and lower bounds to which timber in itself would contribute to the fuel load, and the extent to which passive and active fire protection measures (or lack thereof) can influence fire behavior. Today's engineering community appreciates the demand for an improved level of understanding of overall structural performance throughout the life cycle. Simultaneously, it is also understood that resilience and sustainability are mutually reinforcing, i.e., guaranteeing that the built environment is resilient to catastrophe makes it more sustainable. The research question now is whether the converse is true, i.e., can sustainable construction also be made more resilient against extreme events?

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<sup>1</sup>School of Engineering, University of Northern British Columbia, Prince George, BC V2N4Z9, Canada (Ramla.Qureshi@unbc.ca).