

## UNBC lab leading the way in industrial Passive House design

The University of Northern British Columbia (UNBC) set a North American record in 2018 with the opening of their ultra energy-efficient and air-tight Wood Innovation Research Lab (WIRL). The Lab, built to the Passive House standard, is expected to emit only one per cent of the greenhouse gas emissions of a conventional building. In addition, UNBC is seeking to supply WIRL with renewable natural gas to

further reduce its carbon footprint.



Located in downtown Prince George, and home to UNBC's Master of Engineering in Integrated Wood Design program, WIRL is a single-storey mass timber structure composed of glue-laminated timber columns and beams on a concrete raft slab foundation. By using wood as a primary construction material, WIRL contains less embodied energy compared to a traditional steel building.

The WIRL is the first industrial building in North America to earn the rigorous

Passive House standard – surpassing the airtightness requirement by nearly a factor of 10. Using up to 90 per cent less energy for heating and cooling, and up to 70 per cent less energy overall, it is a pivotal engineering and architectural success for northern British Columbia.