CITY OF PRINCE GEORGE

LOW-CARBON LEADERSHIP IN PRINCE GEORGE

Prince George is located at the centre of a region that has experience with multiple natural resource sectors, together with First Nations, at the confluence of transportation routes, and at the forefront of research and education. This explains why the BC Natural Resources Forum has been held in Prince George for the last 20 years.

Taking action on climate change is adding a new dimension to the community and its resource sectors. Governments and industries alike have new resolve to reduce greenhouse gas emissions and early leadership is evident in Prince George. In fact, there are things happening in Prince George that simply aren't happening anywhere else. Through the course of this tour, you'll see some of them.

At **Lakeland Mills**, timber becomes lumber that sequesters carbon in buildings and reduces the need to use carbon-intensive products such as steel and concrete. Residuals from lumber production – sometimes called "wood waste" – are used in bioenergy systems to further offset fossil fuels for heating. Lakeland uses its residuals to completely offset the need for natural gas in lumber drying and space heating, and enough energy is produced that excess is used to provide heat to Prince George's **Downtown Renewable Energy System (DRES)**. The DRES has cut greenhouse gas emissions from City operations more than any other single initiative and it is considered to be the largest municipal heating system in Canada that can operate 100% on renewable energy year-round.

Some of the lumber produced at Lakeland is used at **Winton Homes** to prefabricate home packages and large commercial buildings. The prefabrication process is conducive to building more energy-efficient homes due to the precision and quality control in factories. Winton has developed new wall and floor assemblies to offer solutions that meet the BC Energy Step Code requirements for all new buildings to be net-zero ready by 2032. These solutions enable high-performance buildings to be built in Northern BC's climate with less-to-no fossil fuels required for heating and cooling.

Lumber is also used to make mass timber, which allowed for the construction of the 30m **Wood Innovation and Design Centre (WIDC)** in downtown Prince George. When it opened in 2014, it was the tallest wood building in North America.

WIDC will host presentations about three sustainable energy projects currently in development in Prince George:

- **Tidewater Renewables** is building Canada's first large-scale project to produce renewable diesel.
- **Hydra Energy** is developing the world's largest hydrogen refueling station for heavy-duty trucks as part of a Western Canadian Hydrogen Corridor that the company is building out and will produce low-carbon hydrogen right on-site starting in early 2024.

- **Arbios Biotech**, a joint venture of Canfor and Licella, uses cutting-edge technology to convert wood residues and biomass into renewable biofuels that can be used for low-carbon transportation and sustainable biochemicals.

All of these projects will significantly reduce greenhouse gas emissions compared to fossil fuels traditionally used in the transportation and chemical sectors. Representatives of the University's Northern Analytical Lab Services, which is Northern BC's Environmental and Climate Solutions Innovation Hub, will also be on-hand to describe and demonstrate low-carbon products it is helping to develop and test in conjunction with industrial partners.

The award-winning **Wood Innovation Research Laboratory**, next door to WIDC, is the result of hard work and innovation from UNBC staff, faculty, and numerous local companies including Winton Homes and IDL Projects Ltd. The Lab is one of the most energy-efficient buildings of its kind anywhere[1], barely using any fossil fuels for heating. Research in the Lab is exploring how timber can be used in more, and taller, buildings.

ACKNOWLEDGEMENTS

Thank you for participating in this tour that has been developed by the City of Prince George and Tourism Prince George in association with the University of Northern British Columbia, Northern Analytical Laboratory Services, Sinclar Group Forest Products, Arbios Biotech, Hydra Energy, Tidewater Renewables, and the Community Energy Association. Let us know how we did by scanning the QR code with your phone.

We are grateful to be able to deliver this tour on the traditional and unceded territory of the Lheidli T'enneh First Nation.

Thank you to Tidewater Renewables and Arbios Biotech for covering the cost of the boxed lunches, which were provided by Origins Kitchen at the Exploration Place.

CITY OF PRINCE GEORGE

PRINCE GEORGE BC

[1] The building's insulation and structural design contributed to measurements of airtightness that had never before been measured in North America. It was the first industrial building in North America to be built to Passive House standards.