

bird

Our Path to Net Zero





OUR PATH TO NET ZERO

Canada's ambitious target of achieving net zero carbon emissions by 2050 relies on unified efforts across all sectors, with construction playing a pivotal role. In addition to our own operational journey towards reducing carbon emissions, Bird's commitment to sustainable construction includes driving the transition to a net zero carbon economy.

Highly energy-efficient, zero carbon buildings harness onsite or procured carbon-free renewable energy to offset yearly carbon emissions from both materials and operations. Zero carbon building standards can be utilized for various building types, ranging from high-rise towers to arenas, warehouses, multi-unit residential complexes, and schools. Additionally, retrofitting existing facilities presents significant opportunities to reduce its carbon footprint. Leveraging a variety of technologies, processes, and materials, our teams are dedicated to advancing the realization of net zero buildings, in both energy and carbon reductions. Our passion lies in perpetually seeking innovative ways to enhance building performance and minimize environmental impacts throughout every construction phase and across the building's lifecycle.

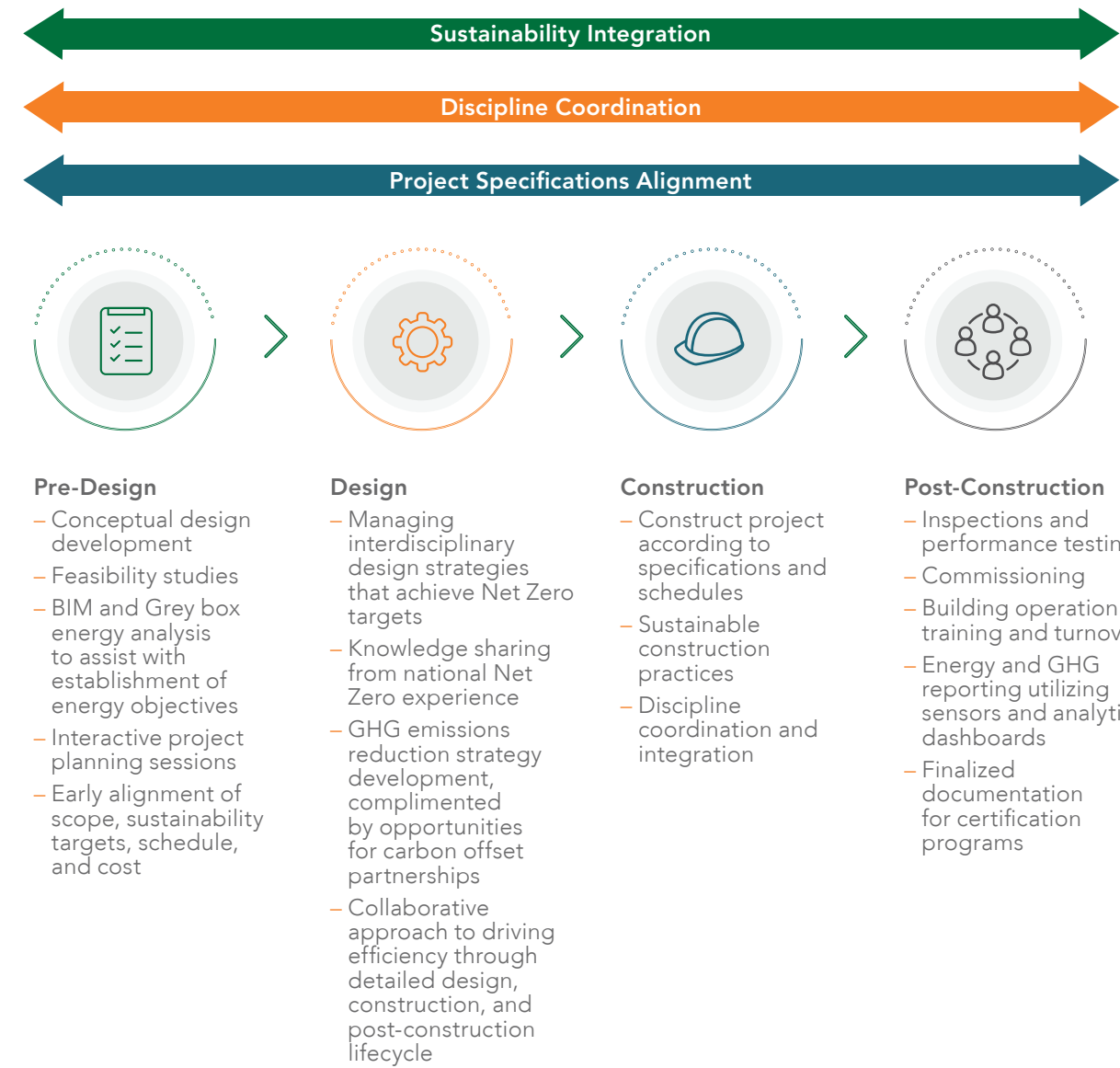
Bird is committed to sustainable construction, from the selection of materials, equipment, and systems we use, to the strategies we deploy to reduce carbon emissions, increase energy efficiency, and minimize resource waste. We have partnered with our clients to deliver complex and innovative building systems that meet LEED®, Green Globes, Passive House, WELL Standard, and Zero Carbon building requirements. Working collaboratively with all stakeholders, we can realize net zero goals as we create holistic solutions for a more sustainable built environment.



Our team comprises experts in various fields including:

- ✓ Mass Timber
- ✓ Energy Storage
- ✓ Sustainable Energy
- ✓ Energy Code
- ✓ Building Envelope
- ✓ Mechanical Systems Optimization
- ✓ Energy and GHG Reporting
- ✓ Project Finance and Analysis

Our Net Zero Services From Pre-Design to Post-Construction





Noventa Toronto Western Hospital Wastewater Energy Transfer

Toronto, Ontario

Project value: \$43M

- Large boiler and chiller capacity
- Low temperature hot water loop
- Wastewater heating and cooling
- Energy and water savings
- GHG reduction



>8,400 tonnes

annual reduction in GHG emissions

~\$685,000

annual energy
savings



>45,000m³

annual water
savings

Okanagan College Health Sciences Centre

Kelowna, British Columbia

Project value: \$18.9M

- Mass Timber
- Natural ventilation systems
- Photovoltaic system
- Wastewater heat recovery system
- High efficiency building envelope
- Targeting net zero



DEEP ENERGY RETROFITS

Deep energy retrofits (DER) aim to significantly reduce greenhouse gas (GHG) emissions and energy consumption in existing buildings by performing extensive overhauls of building systems and materials. DERs are poised to play an integral role in the achievement of net zero and decarbonization goals as we pursue holistic solutions to create a more sustainable built environment. Design approaches, technology, and strategies are constantly evolving in response to carbon reduction targets, driving improvement and innovation.

Building retrofit solutions include reducing GHG emission and energy costs by the following classifications:

10% – 30%

Light Retrofits

31% – 50%

Medium Retrofits

51% – 80%

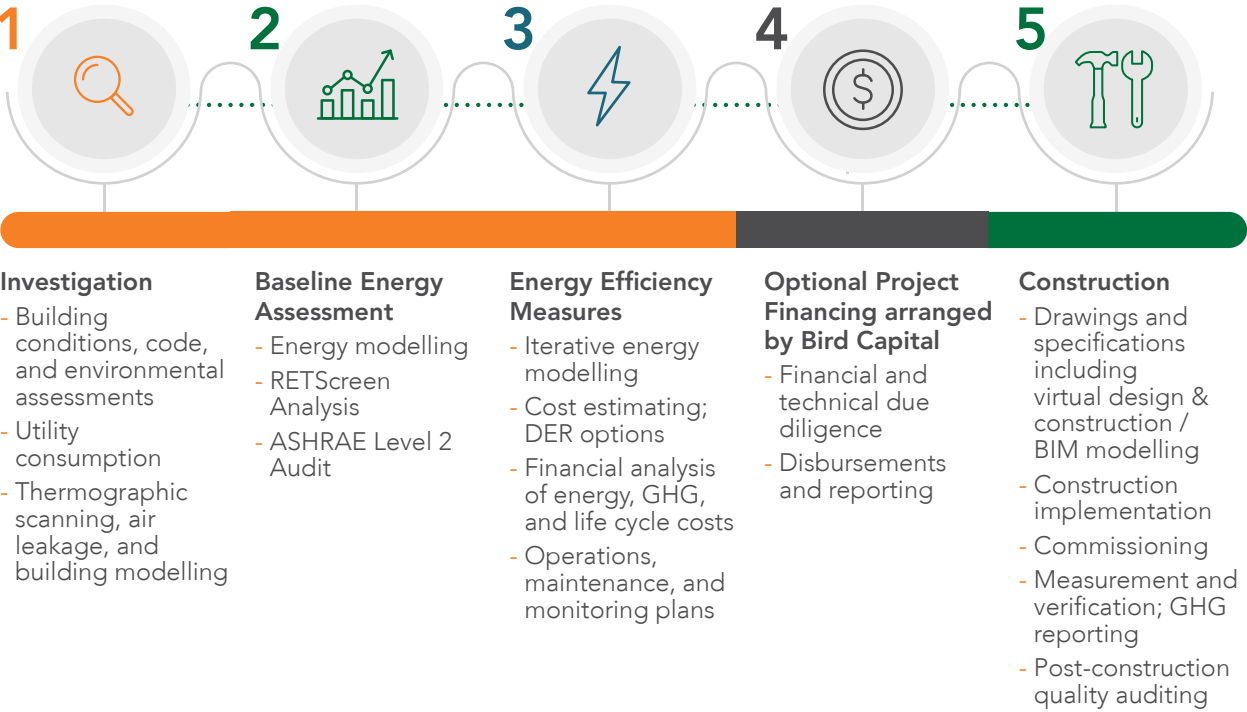
Deep Retrofits

Bird leverages our wealth of multi-disciplinary experience across Canada to deliver DER solutions that have a real impact:

- Energy analytics of existing buildings and presenting conceptual design options
- Mechanical and electrical assessments and optimization
- Sustainable, renewable energy, and low carbon solutions
- Managing incentives from utilities and government agencies
- Energy modelling and analysis

DEEP ENERGY RETROFITS

Five stages



Deep Energy Retrofit Project Highlights

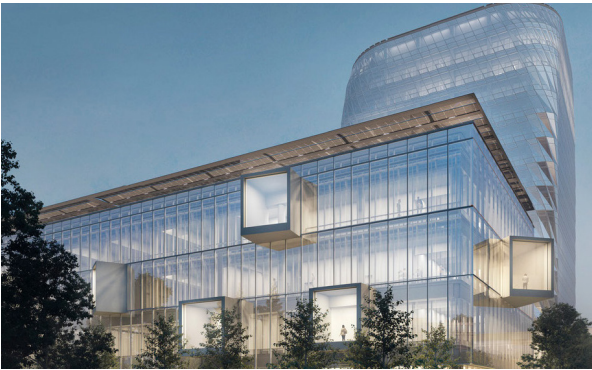


Rendering courtesy of Bird Construction

Dalhousie University Marion McCain Envelope Replacement

Halifax, Nova Scotia
Project value: \$12M

- Complete building envelope replacement (phased)
- High performance building envelope
- Integrated solar PV (BIPV)
- BIM/VDC design assist
- Grey box (cove) energy
- Analysis resulting in improved energy use intensity (EUI)
- 4D scheduling analysis



University of Calgary MacKimmie Building Block Redevelopment

Calgary, Alberta
Project value: \$220M


- CaGBC zero carbon design certification
- Active ventilated facade
- Extensive network of sensors with smart building technology
- Photovoltaic system
- Cogen central heating





St. Francis Xavier University
Nicholson Tower
Antigonish, Nova Scotia
Project value: \$20M

- Deep energy retrofit
- High performance building envelope design
- BIM/VDC design and construction assist
- Fire-modeling analysis
- 4D scheduling analysis
- Geothermal system

 **60% improvement**
in energy performance




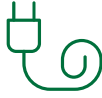
Humber College Building NX
Toronto, Ontario
Project value: \$9M



- Deep energy retrofit
- Building envelope
- Certified zero carbon building
- Photovoltaic system
- Reduction in energy use intensity, heating energy, and GHG emissions

 **90% reduction**
in GHG emissions

 **97% reduction**
in heating energy

 **70% reduction**
in energy use intensity



High Performing Buildings Project Highlights

SAIT Campus
Centre Redevelopment
Calgary, Alberta



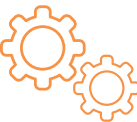
- Targeting LEED Gold
- Targeting CaGBC Zero Carbon Design Standard Version 3
- Problem solving engineering to meet client’s net zero goals



Rendering courtesy of GEC Architects

Lake City, Bridge Studios
Burnaby, British Columbia
Project value: \$320M

- Heat pump technology
- Variable Refrigerant Flow (VRF) system
- Roof-mounted energy recovery wheels



75% efficiency
in preserving heat outflows and delivering maximal fresh air to occupants



Rendering courtesy of CTA Architecture & Design Ltd



Halifax IKEA
Halifax, Nova Scotia
Project value: \$70M

- Photovoltaic system
- Solar air heating system
- Geothermal wells
- LEED Gold



2,502
solar photovoltaic
rooftop array panels



72
geothermal wells

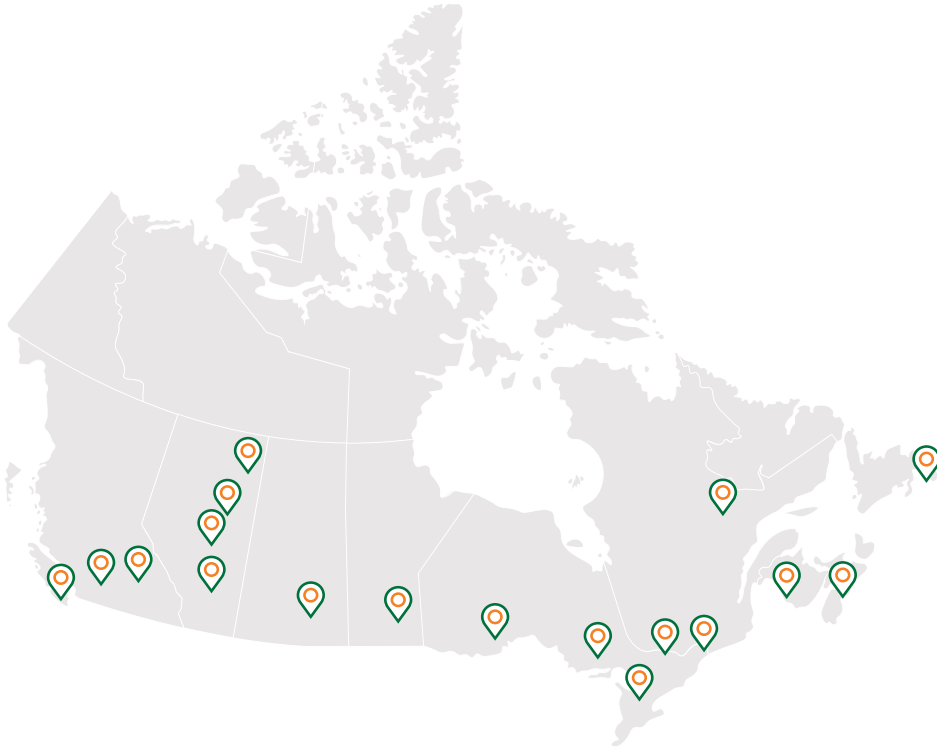
MEET OUR IN-HOUSE EXPERTS



Krista Wright
Director, Design & Engineering Services
Sustainability SME
krista.wright@bird.ca



Richard Marshall
Director, Design & Innovation
Deep Energy Retrofits, Codes & Standards, Building Envelope SME
richard.marshall@bird.ca



Patrick Crabbe
Director of Mass Timber
patrick.crabbe@bird.ca



Nathan Lenner
Mechanical Specialist
nathan.lenner@bird.ca



Heric Holmes
Mechanical Systems Expert
heric.holmes@bird.ca



Rick Buhr
Director, Design & Key Accounts
Building Design, Sustainability, & Building Science SME
rick.buhr@bird.ca





Our Path to Net Zero

Bird Construction Inc.
Suite 400, 5700 Explorer Drive
Mississauga, ON L4W 0C6
Tel: (905) 602-4122

www.bird.ca

