RDH

Energy and Climate Qualifications

2025

#rdhxclimate2030 #NEVERNEUTRALONCARBON

Sustainability is an important value at RDH—embedded in every aspect of our work and culture. We apply sustainable thinking with a focus on real-world performance, long-term durability, and measurable outcomes.

Our approach is grounded in data, informed by field experience, and shaped by decades of delivering solutions that align performance with broader climate goals.

RDH is known for a practical, whole-systems approach to sustainability. Whether we're improving the energy performance of an aging apartment tower, guiding policy for a new zero-carbon standard, or designing enclosures for net-zero schools, we bring deep technical insight and a clear understanding of what it takes.

These qualifications highlight how we work with clients to translate climate commitments into action—through thoughtful planning, resilient design, and high-performance delivery.

Making Buildings Better ™

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About RDH Building Science

Our Commitment to Better Buildings

RDH BUILDING SCIENCE

RDH Building Science is a leading consulting and engineering firm specializing in climate-responsive, low-carbon, and energy-efficient solutions across North America. With 11 locations, we leverage our expertise to deliver high-performance, durable buildings that meet current and future needs.

Our capabilities integrate building design, architecture, construction, and engineering to achieve optimal performance tailored to each project. Our diverse team of engineers, architects, technologists, and climate specialists drives our cutting-edge approach.

What Sets us Apart

Technical Excellence

We are committed to continuous learning and staying at the forefront of engineering. Our multidisciplinary teams apply core expertise across all aspects of design, construction, and operation.

Integrated Services

Our in-house specialists work together to deliver exceptional value. By taking a holistic view of your project or portfolio, RDH offers integrated approaches to work that address immediate needs and long-term goals to streamline processes and reduce costs.

Collaborative Teams

RDH stands for a collaborative environment that values diverse perspectives. Our unified project goals and stakeholder alignment drive our work philosophy, while a mentorship-focused culture promotes growth.

Multidisciplinary Expertise

We understand the entire building lifecycle—from design to maintenance—allowing us to provide precise solutions at every project phase. This optimizes performance and helps us deliver sustained efficiency and durability.

Our Valued Clients

We are trusted partners to our clients who we work with to deliver on all of their building needs: architects, designers, developers, contractors, attorneys, product manufacturers, property ownership groups, government bodies, utilities, and industry organizations.

RDH Market Sectors

We practice in virtually all building sectors and can offer services and solutions to meet your project needs:

- Commercial Office
- Mixed-Use
- Mission Critical
- Industrial
- Civic & Government
- Spiritual & Cultural
- Healthcare
- Life Sciences
- Historic + Heritage
- Hospitality
- Education
  - Higher-ed
  - K-12
- Residential
  - Market Rate + Affordable Housing
  - Strata/HOA High-Rise, Low-Rise, Townhomes
  - Single-Family
  - Student Housing
  - Senior Housing + Long Term Care

RDH Core Services

Building Enclosure Consulting

We excel in designing, investigating, repairing, and improving building enclosure systems, which include walls, roofing, cladding, and windows/doors (fenestration).

Façade Engineering

Our focus is on systems like curtain walls and specialty facades. We are experts in material selection, structural performance, and design alignment to deliver innovation that enhances design and function.

Structural Engineering

We offer design of secondary structures, investigations, seismic assessments, repairs, and forensic analysis for the safety and resilience of structures.

Construction Services

RDH offers full Construction Management services and project management. We prioritize budget efficiency and site safety, managing all phases from pre-construction to warranty management.

Training and Publications

We provide scalable training solutions and resources to enhance industry knowledge and promote technical excellence.

Energy & Climate Consulting

We have capabilities in energy performance and climate consulting, encompassing low carbon design, energy audits, deep retrofits, and climate resilience strategies.

Heritage Services

RDH specializes in the rehabilitation, conservation, and adaptive reuse of historic buildings, balancing modern performance with preservation. Our heritage professionals deliver durable solutions, extending service life, and improving energy efficiency.

Building and Portfolio Lifecycle Management

Our lifecycle management services include portfolio planning, condition assessments, and capital planning, helping clients optimize building assets and achieve sustained performance.

Research, Development, and Demonstration (RD&D)

We drive innovation in building science through advanced research, policy analysis, and rigorous product testing.

Sustainability at RDH

Technical Excellence, Long-Term Impact

Sustainability at RDH

A Holistic, Whole-Systems Approach

We view sustainability through a whole-building, whole-system lens—considering how each decision in design and construction affects long-term performance and environmental impact. Our North American teams develop integrated, cost-effective strategies that align with project priorities and broader climate goals. Whether reducing operational carbon, improving air quality, or extending service life, our teams deliver solutions that are practical, focused, and tailored to each project.

Our Expertise at Work

Our sustainability services draw on RDH's collaborative team of engineers, architects, building scientists, and technical specialists. We provide:

- → Energy and Carbon Consulting: Supporting low-carbon design, energy modeling, and emissions reduction from concept through completion.
- → Enclosure and Airtightness Expertise: As pioneers in whole-building airtightness testing, we help define performance targets and support successful implementation.
- → Regulatory and Policy Alignment: We contribute to the development of energy and carbon standards and bring that insight directly into client projects.
- → Retrofit and Decarbonization Planning: Helping building owners and institutions develop retrofit strategies, prioritize investments, and reduce emissions across portfolios.

We often recommend establishing sustainability as a design priority from the outset because we believe early alignment enables teams to evaluate trade-offs, unlock creative solutions, and work under a shared vision of performance.

Credentials and Certifications

RDH is a member of the Canada Green Building Council (CAGBC) and the U.S. Green Building Council (USGBC). Our staff include:

- → LEED Accredited Professionals (BD+C, O+M, and other USGBC-recognized specialties)
- → Certified Passive House Consultants, Certifiers, and Verifiers (PHI and PHIUS)
- → WELL Accredited Professionals (WELL APs)

We regularly support the design, coordination, certification, and construction of LEED, Passive House, WELL, Net Zero, and Zero Carbon Building projects across North America—and occasionally abroad. We can also guide clients through these frameworks with a focus on balancing performance, constructability, and cost.

Ongoing Learning and Internal Training

RDH invests in continuous learning and knowledge-sharing across the firm to stay at the leading edge of sustainable building practice. Our Training & Publications team develops and delivers over 25 sustainability-focused courses annually to the industry, on topics such as design strategies, modeling, emerging technologies, and evolving regulations. Our Learning & Development team facilitates our internal learning program, including development of additional training on specific sustainability-related topics.

With technical expertise and foundation in building science, our teams create CE-aligned learning experiences that are informed by industry best practices. In 2023, more than 80% of RDH staff participated in these programs, completing over 460 sustainability-related courses. This commitment to ongoing development enhances our ability to deliver solutions and lead in a rapidly evolving field.

Industry Engagement and Memberships

RDH professionals actively contribute to industry organizations shaping the future of sustainable building, including:

- → Canada Green Building Council (CAGBC)
- → U.S. Green Building Council (USGBC)
- → Passive House Institute (PHI) and Passive House Institute US (PHIUS)
- → ASHRAE
- → American Institute of Architects (AIA)
- → Code committees at all levels across North America

Our staff serve on technical committees, lead working groups, and participate in policy development to advance climate-responsive building practice.

Integrated Delivery, Real-World Coordination

Our sustainability teams work closely with RDH's enclosure engineers, façade specialists, energy modelers, and structural consultants. This integrated model strengthens coordination across disciplines, reduces friction, and delivers more consistent value from concept to completion.

Innovation Through Research and Demonstration

Our Research, Development, and Demonstration (RD&D) group leads applied studies on low-carbon materials, climate-adaptive design, enclosure performance, and retrofit strategies. We collaborate with utilities, government agencies, manufacturers, and academic partners to translate innovation into practical tools and insights that benefit the industry.

Regional Knowledge, Regulatory Insight

With offices across Canada and the U.S., RDH brings local knowledge of regional climate conditions, building codes, incentive programs, and evolving performance standards. We support clients in navigating regulatory complexity and staying ahead of shifting mandates—reducing risk and identifying opportunities for long-term value.

Who We Work With

We work with a broad range of clients across North America on their energy and climate goals, including:

- → Architects and Design Firms
- → Housing Agencies and Non-Profits
- → Universities and Educational Institutions
- → Developers and Ownership Groups
- → Municipal, Regional, and Federal Governments

These relationships support our ability to deliver sustainability services that are grounded in technical rigor, adaptable to different delivery models, and aligned with long-term performance goals.

From Strategy to Delivery

Practical Solutions for Performance and Resilience

Q&A: How does RDH Bring Climate Goals to Life Through Engineering, Building Science, and Technical Delivery?

What does climate action mean to RDH?
Climate action is part of our everyday work. We help public housing providers, municipalities, government departments and agencies, utilities, Indigenous communities, school boards, architecture and design teams, and developers move from policy and performance targets to real, technically grounded solutions—whether for a single building, a portfolio, or a broader program. Our approach is informed by decades of delivering high-performance buildings and lasting outcomes.

What kind of climate-focused work does RDH deliver?
Our work spans deep energy retrofits, low- and zero-carbon buildings, Passive House and net-zero design, embodied carbon analysis, climate adaptation, research, and policy and program development. These strategies apply across new and existing buildings—including heritage sites—where we align performance improvements with preservation goals.

What does effective deep energy retrofit (DER) planning look like?
We guide clients through planning at the building and portfolio level, combining condition assessments, performance modeling, and implementation support to reduce energy use, extend service life, and strengthen long-term resilience.

How does RDH support Net Zero and Passive House projects?
We provide design-phase consulting, energy modeling, and coordination to help teams meet aggressive energy targets. RDH regularly supports certified Passive House and custom net-zero projects, acting as a technical bridge across architecture, MEP, and sustainability disciplines.

Does RDH provide embodied carbon services?
Yes. We conduct life cycle assessments (LCAs), support material selection and specification review, and model emissions impacts. Our focus is on reducing upfront carbon in high-impact systems while maintaining durability, constructability, and performance.

What about climate resilience?
Our most impactful resilience work often occurs in existing buildings, where extending service life is both technically demanding and inherently sustainable. We apply enclosure-first strategies—through detailing, material choice, and modeling—to manage overheating, moisture, and extreme weather. This approach has shaped work such as the *RK MacDonald Nursing Home* retrofit, *Roseway Manor* upgrades, climate risk assessments, and wildfire-resistant enclosure strategies for at-risk communities. We also contribute to broader frameworks and climate hazard guidance for public-sector standards.

Does RDH support regional policy or code development?
Yes. RDH works with utilities, industry bodies, and all levels of government to shape energy codes, performance standards, and incentive programs. We've supported the *Toronto Green Standard* (Version 3 and beyond), *Toronto's Building Emissions Performance Standard*, the *Vancouver Building By-Law* and *Rezoning Policy*, and *Boston's Emissions Reduction and Disclosure Ordinance*. Our team also contributes to technical committees and studies—such as *ASHRAE 227*, *ASHRAE 100*, the *National Energy Code of Canada for Buildings*, and the Canada Green Building Council's "*Decarbonizing Canada's Large Buildings*" technical study. We are also actively involved in ongoing CSA research to inform future certification frameworks.

Who are some of RDH's clients?
We partner with public housing providers, post-secondary institutions, developers, municipalities, and architecture teams across North America. Many also take advantage of our Building and Portfolio Lifecycle Management (BPLM) services for capital planning, condition assessments, and long-term strategies to reduce emissions, manage risk, and improve asset performance.

What makes RDH different in this space?

We combine a holistic approach to engineering with real-world delivery. From heritage retrofits to applied research, our work balances performance, preservation, and practicality—across all building types and at every project phase.

Our team brings a multidisciplinary lens to every assignment, drawing from decades of experience in enclosure design, energy and carbon consulting, and building lifecycle planning. Whether we're supporting an affordable housing retrofit or piloting new approaches in net-zero design, we align our technical recommendations with project goals, funding realities, and long-term operations.

RDH collaborates, tests, adapts, and implements. Our work supports climate action, extends building service life, and improves occupant comfort while helping clients navigate complex design, code, and funding landscapes.

We are proud to partner with cities, non-profits, housing authorities, and developers across North America to deliver low carbon strategies that are actionable, fundable, and grounded in real-world performance.

RDH BUILDING SCIENCE

Making Buildings Better ™

Corporate Sustainability Strategy

Putting Our Climate Goals into Practice

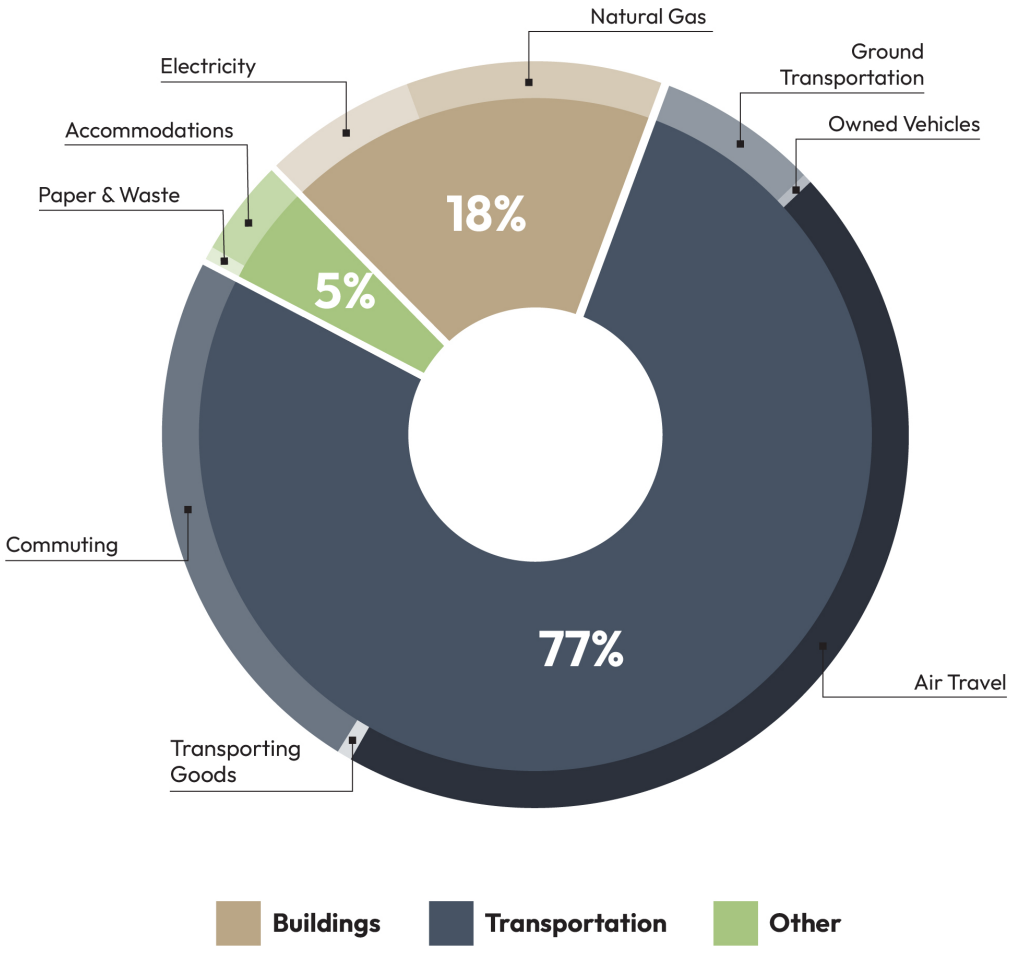
RDH takes a comprehensive, data-informed approach to climate action. As consultants and engineers focused on long-term performance, we help reduce emissions across the building lifecycle through technical services, internal accountability, and industry leadership. Our corporate climate strategy reflects a commitment to measurable impact—both within our operations and across the built environment.

Reducing Our Corporate Emissions

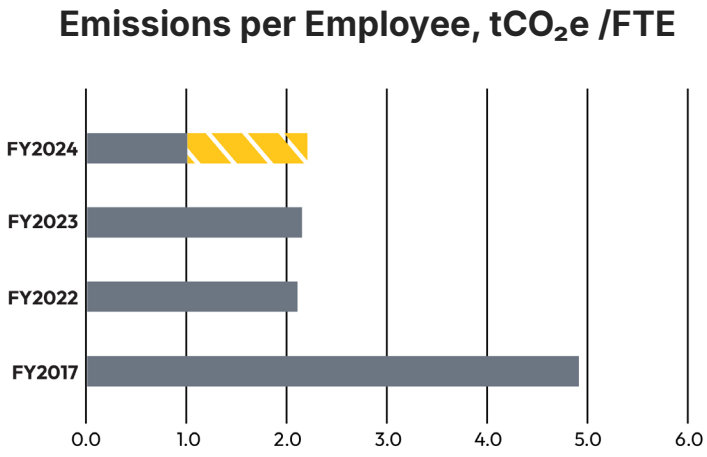
RDH has set a goal of achieving net-zero carbon emissions across our operations (Scope 1, 2, and 3) by 2030. Understanding our own environmental impact is the foundation of our strategy to achieve this goal. We track greenhouse gas (GHG) emissions across all RDH offices and operational categories. In 2025, we launched a real-time emissions reporting system that integrates directly with our accounting data, enabling teams across the firm to monitor progress and contribute to reduction efforts.

While our firm's size has grown, we're proud to report that emissions per employee have remained stable. Our measured emissions for FY2024 were 2.2 tCO2e per employee, a per-employee reduction of over 50% from our baseline inventory in 2017. With offsets, our FY2024 emissions per employee were 1.0 tCO2e per employee (315 tCO2e total).

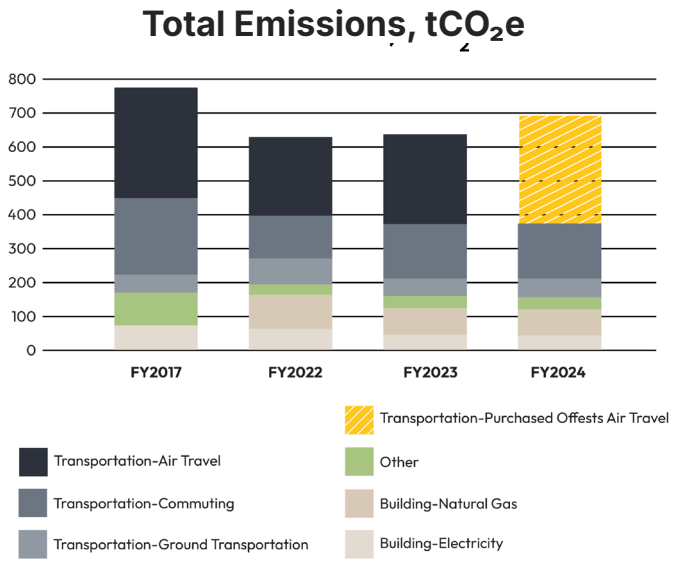
We have made great strides toward reducing our emissions through initiatives like our hybrid work framework, reducing corporate and project travel, purchasing Energy Star office equipment, bicycle storage facilities, reducing paper consumption, and recycling and composting programs in all offices.



| GHG emissions by category for FY2024, excluding offsets



| GHG emissions per employee over time (with offset annotations)



| Total GHG emissions by category for recent years. (tCO_2e)

Maximizing Project Impact

Our project work remains the most significant way we contribute to climate action. We support low-carbon design, deep energy retrofits, and whole-building decarbonization across thousands of buildings in North America.

We estimate that our 2023 recommendations contributed to over **46,000 tCO_2e** in emissions reductions—more than **60 times** our operational footprint. This impact is equivalent to removing 10,000 cars from the road or planting 1.8 million trees.

Driving Emissions Reduction

We embed climate action into both internal practices and external services:

- **Operational Practices**
  Improvements to travel, purchasing, and shipping protocols
- **Carbon Offsets**
  Climate Action Reserve–verified offsets for 2024 air travel
- **Client Services**
  Integration of carbon analysis and decarbonization planning into project delivery

Collaborating for Industry-Wide Impact

RDH contributes to national and regional climate goals through partnerships and thought leadership. In the past year, we have:

- Supported Boston's BERDO program
- Contributed to the Massachusetts Stretch and Opt-in Energy Code
- Co-developed LEEP NZE Wall Guides and Wildfire-Resistant Builder Training
- Published *Moisture Risk Management for Mass Timber Buildings (Version 3)*
- Delivered Climate Needs Assessments and Electrical Planning Reports in BC

Internal Learning and Capacity Building

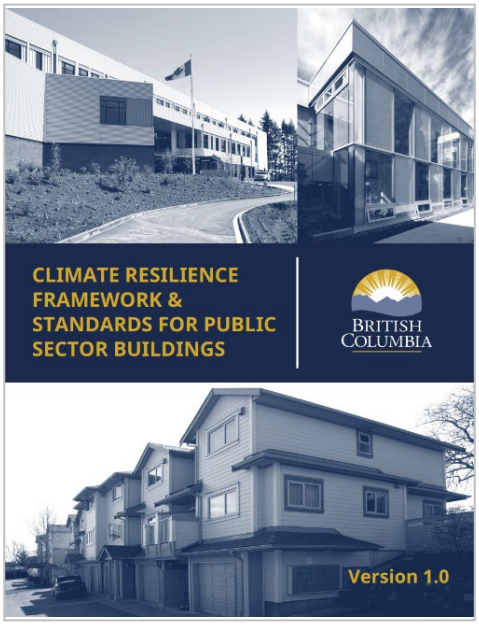
Our Training & Publications team delivers more than 25 sustainability-focused courses each year, offering CE-eligible learning on carbon modeling, emerging technologies, and evolving codes both to our team and the industry. More than 80% of RDH staff have participated in this programming, helping us maintain our technical edge and deliver greater value across projects.

Climate Resilience

Select Projects

- → Climate Resilience Framework and Standards for Public Sector Buildings
- → Climate Risk and Resilience Consulting
- → Wildfire-Resistant Enclosure Consulting
- → Climate Hazard Guidance

Climate Resilience Framework and Standards for Public Sector Buildings



ACKNOWLEDGEMENTS

This document was developed for the British Columbia (B.C.) Climate Action Secretariat, Ministry of Environment and Climate Change Strategy (the Ministry) by a consultant team led by RDH Building Science.

The writing team consisted of:

- Laura Simandl, RDH Building Science Inc
- Christy Love, RDH Building Science Inc

The development of this document benefited from the valuable input of:

- Robin Hawker, Integral Group
- Lisa Westerhoff, Integral Group
- Rob Lepage, RDH Building Science Inc

The following consultants were involved in the development of the "Minimum Climate Resilience Standards" (Chapter 3 of this document):

- Chris Doel, Integral Group
- Kevin Shea, Integral Group
- Mike Currie, Kerr Wood Leidal Associates
- Jeff Marvin, Kerr Wood Leidal Associates
- Laurel Morgan, Kerr Wood Leidal Associates
- Stephen Kooiman, Prism Engineering Ltd.
- Julianne Pickrell-Barr, Prism Engineering Ltd.

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i Climate Resilience Framework & Standards for Public Sector

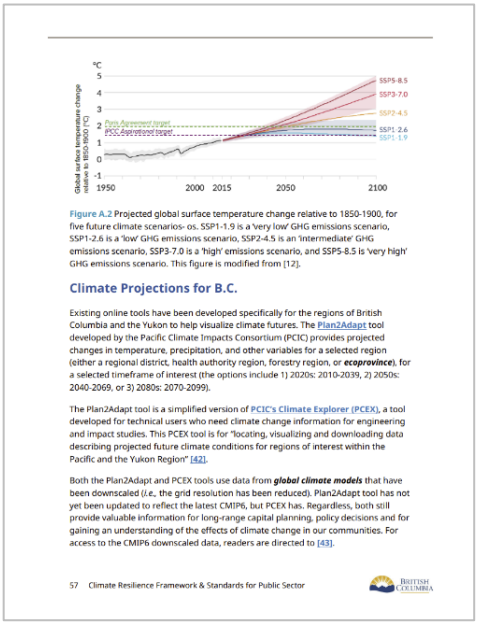


Figure A.2 Projected global surface temperature change relative to 1850-1900, for five future climate scenarios- os. SSP1-1.9 is a 'very low' GHG emissions scenario, SSP1-2.6 is a 'low' GHG emissions scenario, SSP2-4.5 is an 'intermediate' GHG emissions scenario, SSP3-7.0 is a 'high' emissions scenario, and SSP5-8.5 is 'very high' GHG emissions scenario. This figure is modified from [12].

Climate Projections for B.C.

Existing online tools have been developed specifically for the regions of British Columbia and the Yukon to help visualize climate futures. The Plan2Adapt tool developed by the Pacific Climate Impacts Consortium (PCIC) provides projected changes in temperature, precipitation, and other variables for a selected region (either a regional district, health authority region, forestry region, or ***ecoprovince***), for a selected timeframe of interest (the options include 1) 2020s: 2010-2039, 2) 2050s: 2040-2069, or 3) 2080s: 2070-2099).

The Plan2Adapt tool is a simplified version of PCIC's Climate Explorer (PCEX), a tool developed for technical users who need climate change information for engineering and impact studies. This PCEX tool is for "locating, visualizing and downloading data describing projected future climate conditions for regions of interest within the Pacific and the Yukon Region" [42].

Both the Plan2Adapt and PCEX tools use data from ***global climate models*** that have been downscaled (*i.e.*, the grid resolution has been reduced). Plan2Adapt tool has not yet been updated to reflect the latest CMIP6, but PCEX has. Regardless, both still provide valuable information for long-range capital planning, policy decisions and for gaining an understanding of the effects of climate change in our communities. For access to the CMIP6 downscaled data, readers are directed to [43].

57 Climate Resilience Framework & Standards for Public Sector

Location	British Columbia, Canada
Client	Government of British Columbia
Completion	2022
Market Sector	Government/Municipal
Services Provided	Climate Risk and Resilience Consulting

RDH led the development of the *Climate Resilience Framework and Standards for Public Sector Buildings* in British Columbia, a project commissioned to support the integration of climate resilience into the design, construction, and operation of public sector buildings. This work involved reviewing existing resilience frameworks, engaging with stakeholders across government and industry, and outlining clear, actionable standards to address climate risks in the built environment. The resulting framework provides guidance on assessing climate hazards, evaluating vulnerabilities, and implementing resilience measures, with a focus on ensuring that new and existing public buildings are better prepared for current and future climate impacts across BC.

Climate Risk and Resilience Consulting

Location	Multiple Locations, Canada
Client	Multiple
Completion	N/A
Market Sector	Healthcare, Long Term Care, Municipal, Non-Profit, Residential
Services Provided	Climate Risk and Resilience Consulting

RDH helps clients identify and respond to climate risks across both new and existing buildings. We lead project-specific climate risk assessments and contribute to industry-wide guidance that connects climate data with practical strategies for planning, design, and building operations.

- → **Nanaimo General Hospital PIEVC**
  Conducted a climate change vulnerability assessment of Nanaimo Regional General Hospital using the PIEVC Protocol to evaluate how future climate conditions could impact the facility's infrastructure systems. The assessment identified potential climate-related risks and adaptive strategies to enhance the hospital's resilience.
- → **Physical Climate Risk Assessment of the EGBC Office | Burnaby, BC**
  Conducted a climate risk assessment for Engineers and Geoscientists BC's head office to inform capital planning and contribute to the industry's evolving understanding of climate risk and resilience in existing buildings.
- → **RK MacDonald Nursing Home | Antigonish, NS**
  Completed a physical climate risk assessment to inform future planning and identify practical adaptation strategies for this new construction long-term care facility.
- → **RC MacGillvray LTC | Sydney, NS**
  Assessed potential climate impacts on this new construction long-term care home and identified resilience strategies to support ongoing operations and occupant wellbeing.

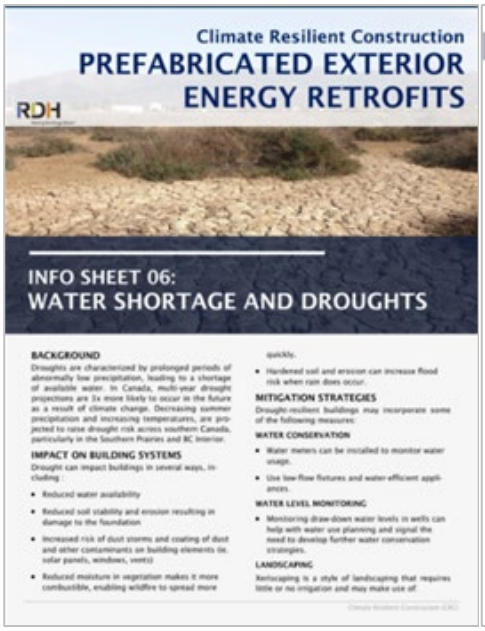
Wildfire-Resistant Enclosure Consulting

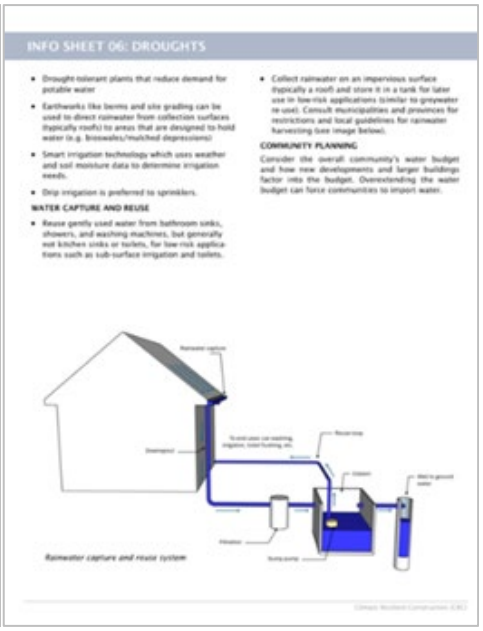
Location	Multiple Locations, Canada
Client	Natural Resources Canada (NRCan), Institute for Catastrophic Loss Reduction (ICLR), ROCKWOOL, District of Lytton
Completion	Ongoing
Market Sector	Multiple
Services Provided	Wildfire-Resistant Enclosure Consulting

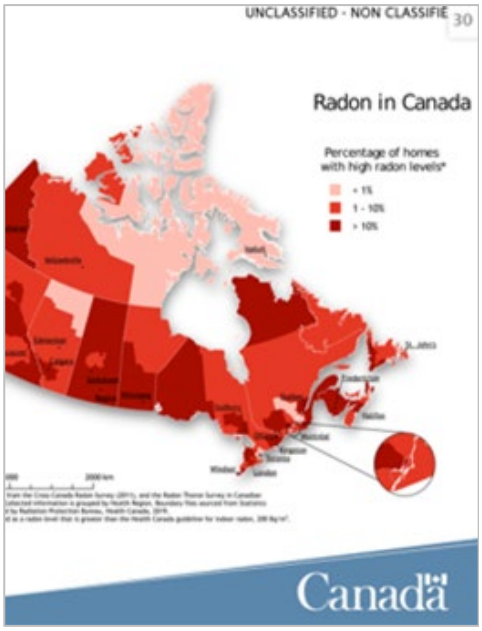
RDH is contributing to a range of wildfire resilience initiatives focused on low-carbon, fire-resistant building enclosure solutions. We support national guidance, local recovery, and builder education efforts through research, fieldwork, and technical detailing.

- → **Lytton Homeowner Resilient Rebuild Program**
  Developed enclosure standards and a builder checklist to support wildfire reconstruction.
  Applied NRC and FireSmart best practices adapted for small builders and local conditions.
- → **NRCan WFRC Technical Sheet Series**
  Authored technical bulletins defining wildfire-resistant wall and roof assemblies.
  Combined lab testing and field insights into practitioner-ready guidance.
- → **ICLR Tiered Retrofit Guidance**
  Created “good–better–best” retrofit strategies for windows, vents, and cladding in high-risk wildfire zones.
  Tailored for varying exposure levels and resources.
- → **ROCKWOOL Builder Guide**
  Produced builder-facing guidance for using non-combustible insulation in wildfire zones.
  Focused on system continuity and resistance to radiant heat and ember exposure.
- → **Jasper Wildfire Forensic Investigation**
  Assessed enclosure performance after wildfire damage.
  Identified failure modes in windows, roofs, vents, and surrounding landscaping.

Climate Hazard Guidance







Location	Multiple Locations, Canada
Client(s)	Natural Resources Canada (NRCan), Canadian Home Builders' Association (CHBA), Local Energy Efficiency Partnerships (LEEP), Prefabricated Exterior Energy Retrofit (PEER) Initiative
Completion	Ongoing
Market Sector(s)	Multiple
Services Provided	Climate Hazard Guidance

RDH develops national resources to help designers, builders, and retrofit programs integrate climate hazard data into enclosure design. Our work translates science into practical tools that support low-carbon, climate-ready housing across Canada.

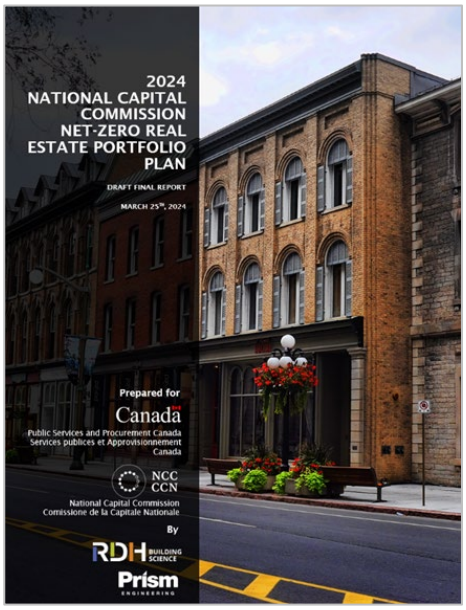
- → **Climate Information Sheet Series**
  Created quick-reference guides on wildfire, heat, flooding, high wind, radon, extreme temperatures, and permafrost.
  Supports retrofit and new build decision-making.
- → **PEER Climate Hazard Module**
  Developed training content linking hazard data to enclosure strategies for retrofit designers and builders.
- → **LEEP Climate Hazard Webinar Series**
  Delivered webinars on hazard mitigation, material durability, and passive survivability for LEEP participants.
- → **High Wind, Basement Flood, and Hail Guidance**
  Produced technical retrofit drawings and builder guidance for key residential hazards.
  Focused on prescriptive solutions and clear communication.

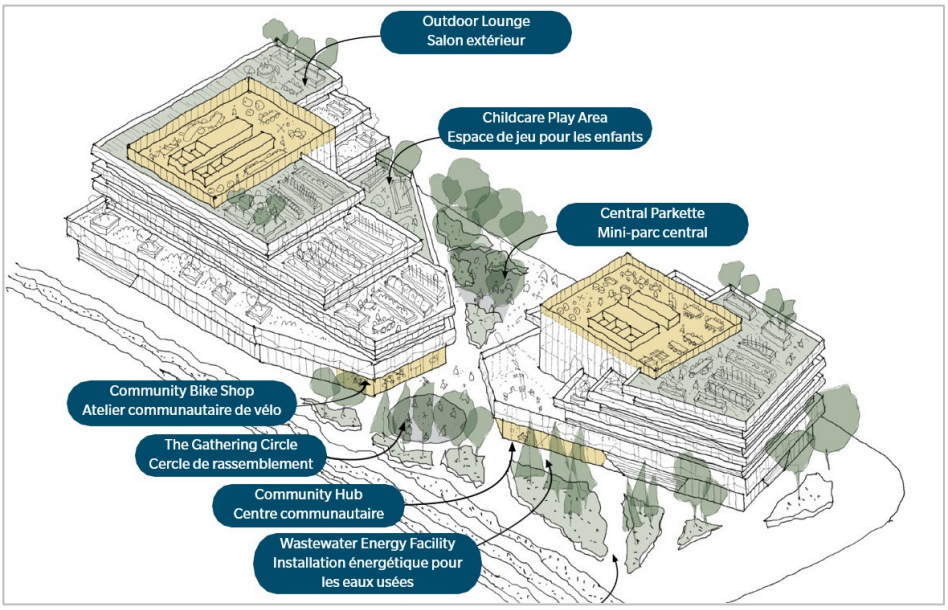
Decarbonization and Deep Energy Retrofits

Select Projects

- → National Capital Commission, Portfolio Planning | Ottawa, ON
- → Public Services and Procurement Canada, Portfolio Planning | Ottawa, ON
- → BC Housing, Manor House Deep Energy Retrofit | North Vancouver, BC
- → BC Housing, Forte Deep Energy Retrofit | Vancouver, BC
- → The Belmont Deep Energy Retrofit | Vancouver, BC
- → Lord Harley Apartments | Victoria, BC
- → Sitkum Lodge | Victoria, BC
- → York Region, Administrative Centre Deep Energy Retrofit | Newmarket, ON
- → BC Housing, Deep Energy Retrofit Pilot Program (Pendrellis, Forte, Manor House, Viscount Villa) | Vancouver, BC
- → MURB Retrofit Demand Analysis | Vancouver, BC
- → Canada Green Building Council (CAGBC), *Decarbonizing Canada's Large Buildings* Technical Study | Canada

National Capital Commission (NCC) Net Zero Portfolio Planning



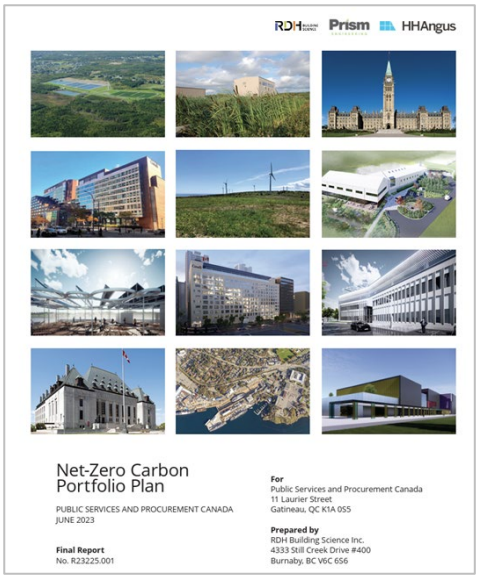


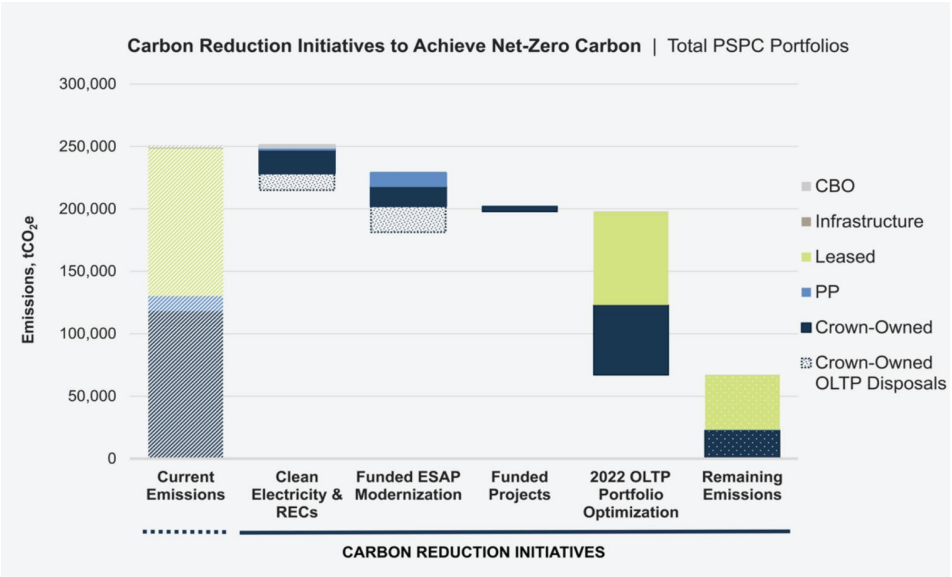
Location	Ottawa, ON
Client	National Capital Commission (NCC)
Completion	2024
Market Sector	Government/Municipal, Heritage
Services Provided	Portfolio Planning

RDH supported the NCC in developing a Net-Zero Retrofit Plan to guide emissions reduction across a complex portfolio of existing buildings. Our team led targeted assessments, energy analysis, and carbon analysis to identify retrofit measures with the greatest technical and economic impact.

We worked with NCC staff to balance performance goals with heritage and operational requirements. The final strategy aligned retrofit actions with lifecycle investment planning and federal climate targets, supported by building-level guidance and a scalable framework for long-term asset planning.

Public Services and Procurement Canada (PSPC) Net Zero Portfolio Planning





Location	Ottawa, ON
Client	Public Services and Procurement Canada (PSPC)
Completion	2023
Market Sector	Government/Municipal
Services Provided	Portfolio Planning

RDH led the development of a Net-Zero Carbon Portfolio Plan for PSPC's national portfolio, which includes over 6 million square meters of Crown-owned and leased assets including both buildings and infrastructure.

We evaluated energy use and emissions across a wide range of building types, conducting lifecycle modeling, retrofit feasibility analysis, code and policy alignment, and scenario-based forecasting.

The final strategy provided detailed technical guidance and prioritized three key areas: (1) decarbonizing Crown-owned buildings, (2) developing a net-zero plan for leased assets, and (3) divestment of high-emitting facilities. Additional recommendations addressed clean electricity, backup systems, embodied carbon, refrigerants, and climate resilience.

Manor House Deep Energy Retrofit

Location	North Vancouver, BC
Client	Metro Vancouver Housing, FortisBC
Completion	Ongoing
Market Sector	Residential (Affordable Housing)
Services Provided	Energy and Climate Consulting, Embodied Carbon Consulting, Building Enclosure Consulting, Construction Management

As part of the FortisBC Deep Energy Retrofit Pilot Program and the BC-based Reframed Lab initiative, Manor House was selected for a comprehensive retrofit to improve energy performance, comfort, and long-term durability.

RDH worked closely with MVHC to align the project with available funding and emissions targets, helping unlock resources that will support future retrofits across their portfolio. The scope includes a new high-performance enclosure, triple-glazed windows, in-suite HRVs for ventilation, and a gas heat pump system.

RDH is leading the enclosure design and providing construction management services, coordinating with the owner and trades to deliver a technically complex retrofit in an occupied building.

The project targets 55% annual energy savings, a 68% reduction in greenhouse gas emissions, and 43% utility cost savings. In addition to meeting performance goals, the retrofit supports long-term affordability, indoor air quality, and resilience—setting a replicable model for affordable housing renewal in BC.

Forte Apartments Deep Energy Retrofit

Location	Vancouver, BC
Client	Bentall Green Oak, FortisBC
Completion	2024
Market Sector	Residential
Services Provided	Energy and Climate Consulting, Building Enclosure Consulting, Construction Management

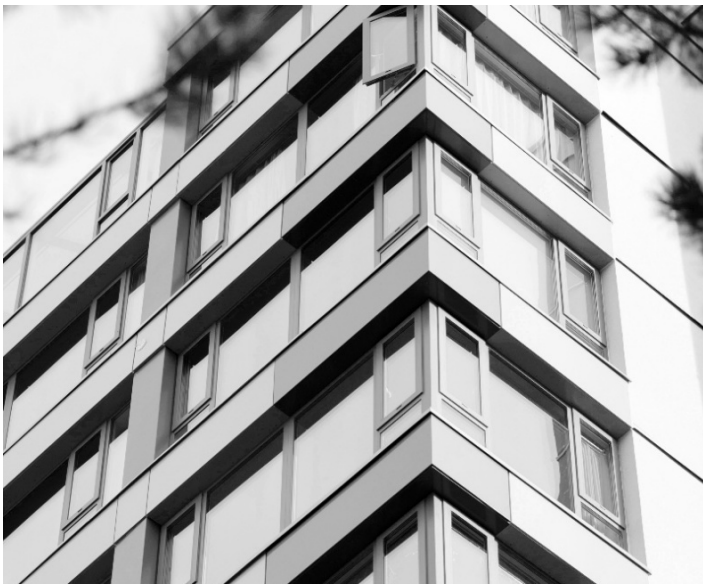
Forte is a 13-storey concrete rental building constructed in 1971, with enclosure conditions typical of the era—single-glazed aluminum windows, minimal insulation, and significant thermal bridging. As part of the FortisBC Deep Energy Retrofit Pilot Program, RDH was engaged to lead the enclosure retrofit design and provide construction management services.

Key upgrades include triple-glazed fiberglass windows and doors, a gas heat pump heating system, and in-suite HRVs to improve ventilation and indoor air quality.

To assess the non-energy benefits of deep retrofits, RDH is conducting pre- and post-retrofit monitoring of indoor environmental conditions.

As construction manager, RDH coordinates directly with the owner and trades to manage cost, schedule, and quality, while minimizing disruption to tenants in the occupied building.

The Belmont Deep Energy Retrofit



Location	Vancouver, BC
Client	Strata Plan VR 1647
Completion	2013 (Phase 1)
Market Sector	Residential
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Capital Planning

Located in Vancouver's Kerrisdale neighborhood, The Belmont is a 13-storey concrete high-rise built in 1986 and home to 37 residential condominium units. Following several years of asset management planning support, RDH was engaged to design and manage a full building enclosure renewal.

Phase 1 included the replacement of single-glazed aluminum windows with triple-glazed fiberglass-framed units, the addition of exterior insulation over concrete walls, and new cladding systems supported by fiberglass clips to reduce thermal bridging. Detailing upgrades at transitions and penetrations improved airtightness and overall enclosure performance.

RDH used energy modeling to evaluate enclosure and mechanical energy efficiency measures and provided cost-payback analysis to support the owners' decision-making. The phased approach enabled the owners to prioritize enclosure upgrades while planning for future mechanical system improvements.

The project received both the CAGBC/SABMag Technical Achievement Award and the APEGBC Sustainability Award in 2013.

Lord Harley Apartments

Location	Victoria, BC
Client	Cornerstone Property Management
Completion	2019
Market Sector	Residential (Rental)
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting

Lord Harley Apartments is a 112-unit wood-frame rental building constructed in 1973. RDH was engaged to assess the building's performance and lead a comprehensive enclosure renewal to improve durability, energy efficiency, and occupant comfort.

Retrofit measures included new cladding, triple-glazed windows, continuous exterior insulation, and upgraded balcony assemblies. Mechanical upgrades featured high-efficiency condensing boilers and improved ventilation through continuous exhaust systems.

RDH supported decision-making through energy modeling and cost-benefit analysis, helping identify utility rebate opportunities and maximize return on investment. The project reduced energy use, improved interior conditions, and extended the life of a well-utilized building—demonstrating a practical approach to sustainable renewal for aging multifamily residential buildings.

Sitkum Lodge

Location	Victoria, BC
Client	Greater Victoria Housing Society (GVHS)
Completion	Ongoing
Market Sector	Residential (Affordable Housing)
Services Provided	Building Enclosure Consulting, Energy and Emissions Planning

Sitkum Lodge is an 11-storey concrete building providing affordable housing for seniors and people with disabilities. Originally built in the early 1980s, the building was facing aging systems and enclosure deterioration. GVHS engaged RDH to support the planning and design of a deep energy retrofit that aligns capital renewal with climate and resilience goals.

The strategy targets a 50% reduction in energy use intensity while improving indoor comfort and reducing emissions. RDH evaluated enclosure upgrades, ventilation improvements, and electrification options—including electric boilers, high-performance glazing, and panelized overcladding to minimize disruption in the occupied building.

The team also assessed rooftop solar and heat pump systems to support cooling and decarbonization objectives. Lessons from this project are expected to inform future retrofit plans across GVHS's portfolio and support regional leadership in sustainable, equitable housing renewal.

York Region Administrative Centre Deep Energy Retrofit

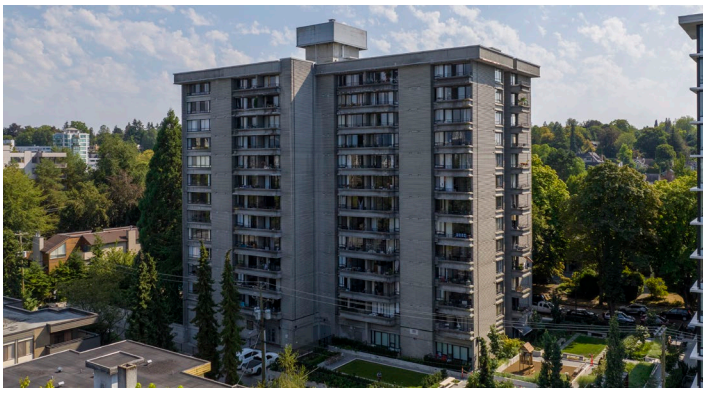
Location	Newmarket, ON
Client	Regional Municipality of York
Completion	2020
Market Sector	Government/Municipal, Commercial/Office
Services Provided	Zero Carbon Planning, Energy and Climate Consulting, Building Enclosure Consulting

Originally constructed in 1993, the York Region Administrative Centre is a mid-rise concrete office building with complex geometry, including step backs and curved façades, and a double-glazed curtain wall system. As part of the Region's long-term climate strategy, RDH was engaged to evaluate the feasibility of achieving zero carbon by 2051.

RDH developed a Zero Carbon Retrofit Roadmap using the Canada Green Building Council's Zero Carbon Building Performance v2 framework. The study outlined five retrofit pathways, each incorporating different electrification technologies and implementation timelines aligned with the service life of existing systems.

Each pathway included analysis of energy use, greenhouse gas emissions, and financial performance. The preferred option combined deep enclosure upgrades with electrification to achieve the lowest Thermal Energy Demand Intensity (TEDI) and optimize long-term value.

Deep Energy Retrofit Pilot Program



Location	Vancouver, BC
Client	FortisBC, BC Housing
Completion	Ongoing
Market Sector	Residential
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Construction Management

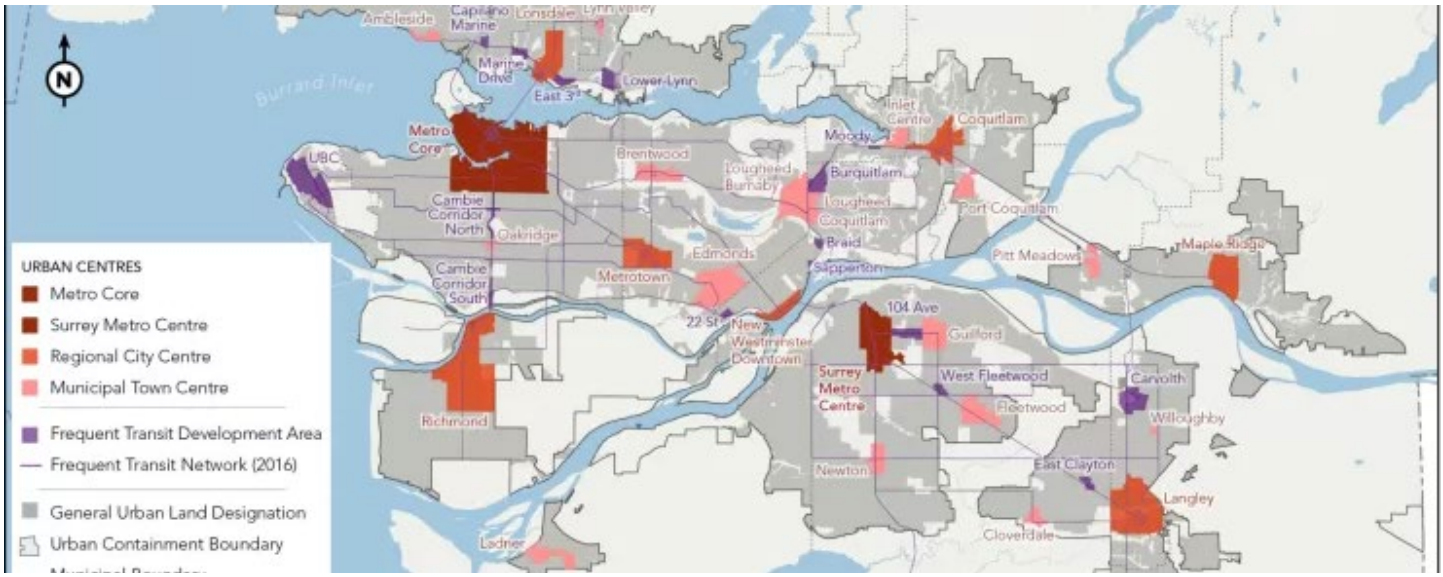
As part of a province-wide initiative to decarbonize affordable housing, FortisBC launched a Deep Energy Retrofit Pilot Program to test scalable retrofit strategies across multiple building types. RDH was engaged to lead the retrofit strategy and technical analysis for four representative sites: Pendrellis, Forte, Manor House, and Viscount Villa.

The buildings—constructed between the 1950s and 1980s—featured varied enclosure systems, mechanical configurations, and occupancy patterns. RDH developed tailored retrofit pathways for each, addressing emissions reductions, energy performance, resident comfort, and long-term durability.

Solutions included high-performance enclosure upgrades, gas heat pumps, ventilation improvements, and renewable energy integration. All strategies were supported by building-specific energy and carbon modeling and designed to minimize disruption in occupied buildings.

This work supports BC Housing's long-term asset renewal goals and is informing provincial policy, utility incentive programs, and technical guidelines for deep energy retrofits.

MURB Retrofit Demand Analysis



Location	Vancouver, BC
Client	Metro Vancouver Regional District
Completion	Ongoing
Market Sector	Residential
Services Provided	Energy and Climate Consulting, Retrofit Strategy, Stakeholder Engagement

Metro Vancouver engaged RDH to assess the potential for deep energy retrofits across the region's aging multifamily residential building stock. The study focused on pre-1990 buildings, evaluating their energy performance, carbon impact, and retrofit potential.

Using representative archetypes, RDH conducted energy and carbon modeling to assess retrofit pathways. Stakeholder engagement with housing providers and municipalities informed the analysis with on-the-ground insights into implementation barriers and policy gaps.

The final report provides a data-driven framework to guide regional planning, prioritize high-impact retrofits, and align incentives with Metro Vancouver's climate and housing goals.

Canada Green Building Council (CAGBC), Decarbonizing Canada's Large Buildings Technical Study | Canada

To support deep-carbon retrofits, CAGBC commissioned a study to evaluate technical pathways for decarbonizing building operations. RDH Building Science, with Dunsky Energy + Climate Advisors, performed energy modeling, estimated retrofit costs, and identified market barriers and solutions. The study aims to equip Canadian building owners and policy-makers with the tools and information needed to accelerate retrofit activity.

City of Boston's Building Emissions Reduction and Disclosure Ordinance (BERDO), Technical Review Support | Boston, MA

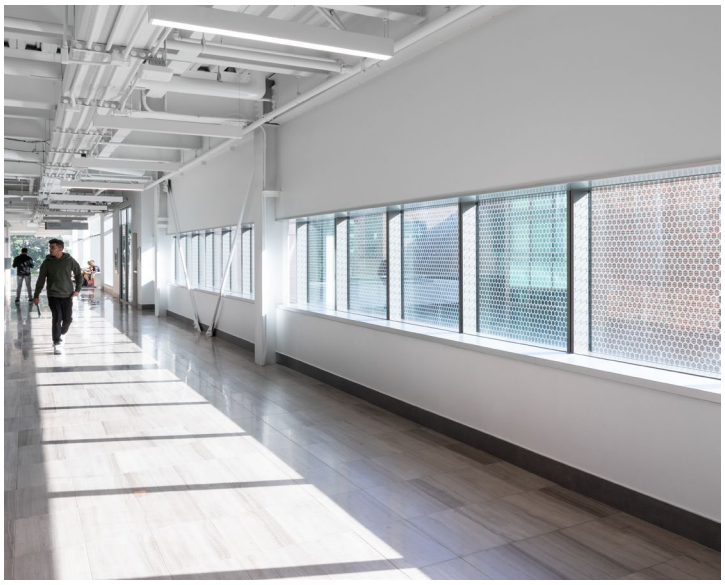
Provide BERDO with technical review support for energy performance documents that mandate large existing buildings to gradually reduce their greenhouse gas emissions.

Zero Carbon

Select Projects

- → Mohawk College, The Joyce Centre for Partnership & Innovation | Hamilton, ON
- → Centennial College, A-Building Expansion | Toronto, ON
- → Humber College, Building NX Retrofit | Etobicoke, ON
- → Public Services and Procurement Canada, Arthur Meighen Building Rehabilitation | Toronto, ON
- → Art Gallery of Ontario, Dani Reiss Modern and Contemporary Gallery | Toronto, ON
- → Pickering Heritage & Community Centre | Pickering, ON
- → Centennial College, Story Arts Centre Library | Toronto, ON
- → St. John's Kitchen | Kitchener, ON
- → Quilchena Community Centre | Quilchena, BC
- → Red River College, Manitou a bi Bii daziigae | Winnipeg, MB

Mohawk College, The Joyce Centre for Partnership & Innovation



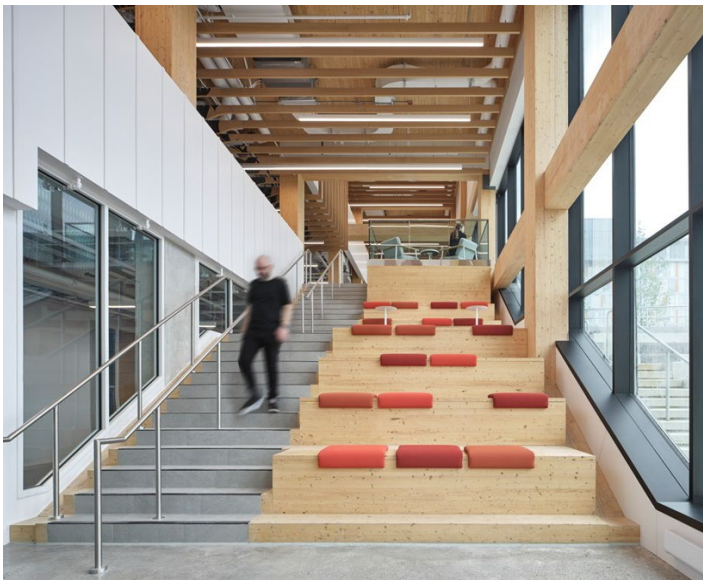
Location	Hamilton, ON
Client	Mohawk College
Completion	2018
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Embodied Carbon Consulting

The Joyce Centre for Partnership and Innovation (JCPI) at Mohawk College is Canada's largest institutional net-zero energy building. RDH was engaged by mcCallumSather Architects to provide building enclosure consulting, energy performance, and embodied carbon consulting from schematic design through post-occupancy verification.

Working within an integrated design team, RDH optimized the enclosure using triple-pane glazing and insulated precast sandwich panels to reduce thermal demand while maintaining comfort and daylighting. Throughout construction, we calibrated the energy model to reflect evolving design decisions, supporting accurate sizing of the renewable energy system.

A post-occupancy study confirmed the building is exceeding performance targets, with five consecutive years of verified zero-carbon operations as of 2024. JCPI is a recognized precedent for durable, all-electric institutional design and has received multiple sustainability and engineering awards.

Centennial College A-Block Expansion



Location	Toronto, ON
Client	Centennial College
Completion	2022
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Zero Carbon Design, Building Enclosure Commissioning (BECx), Monitoring-Based Commissioning

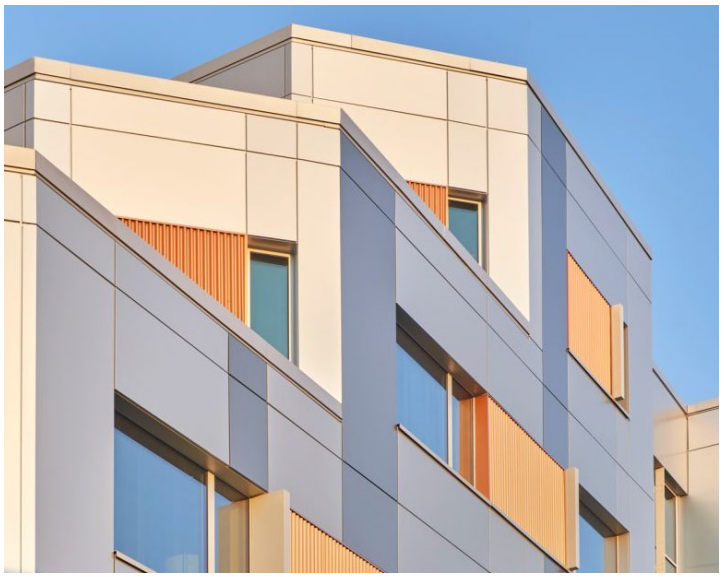
As part of Centennial College's commitment to sustainability and Indigenous values, the A-Block Expansion at the Progress Campus introduced a six-storey, 136,000-sf mass timber addition targeting Zero Carbon Building – Design certification, LEED v4 Gold, and WELL certification.

RDH was engaged by EllisDon to provide enclosure consulting, energy and emissions guidance, BECx, and post-occupancy commissioning strategy. Our early involvement supported evaluation of high-performance HVAC and enclosure options, reduction of GHG emissions, and integration of solar PV systems.

We conducted energy modeling to inform design decisions and verify metrics such as EUI and TEDI. The team addressed thermal bridging and moisture management for mass timber assemblies and developed a coordinated field testing and commissioning plan.

RDH's integrated approach aligned enclosure and energy strategies with project sustainability targets, supporting delivery of a resilient, all-electric academic facility.

Humber College – NX Building Retrofit



Location	Etobicoke, ON
Client	Humber College
Completion	2019
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Zero Carbon Design

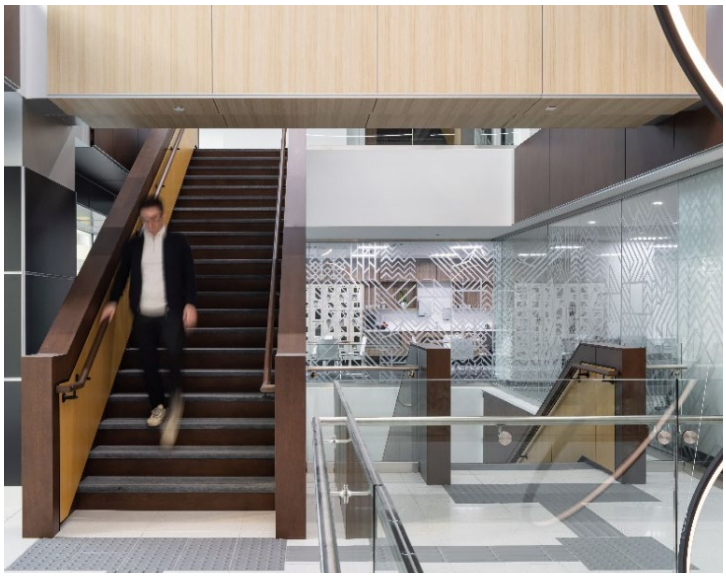
The NX Building Retrofit at Humber College is Canada's first retrofit to achieve Zero Carbon Building – Design certification from the Canada Green Building Council. Originally constructed in the 1980s, the building was modernized to support Humber's institutional carbon neutrality goals.

RDH provided building enclosure and energy consulting throughout the project, leading strategies to reduce thermal demand and transition to all-electric systems. We advised on triple-glazed windows, continuous insulation, air barrier detailing, and enclosure-mechanical integration to meet low EUI and TEDI targets.

Our team evaluated retrofit options and guide the design team toward an optimal zero-carbon pathway. RDH also supported performance verification to meet CAGBC certification standards.

The retrofit significantly reduced GHG emissions and now serves as a scalable model for deep energy retrofits in the post-secondary sector.

Public Services and Procurement Canada, 25 St. Clair Building Rehabilitation



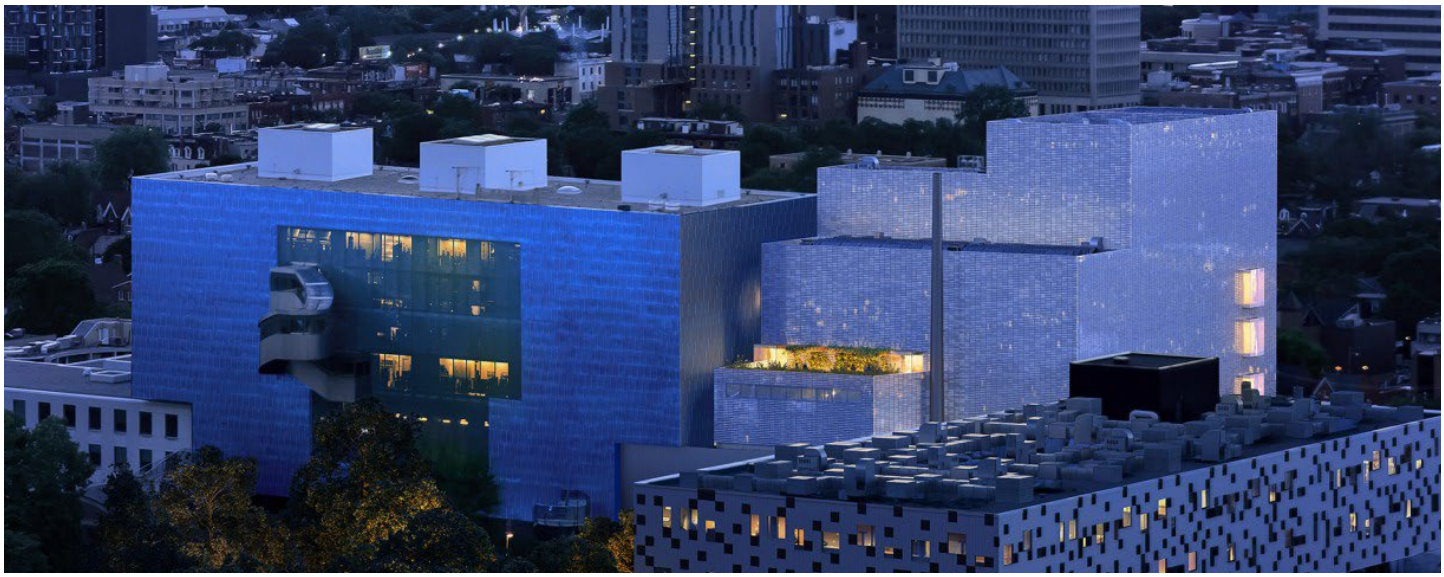
Location	Toronto, ON
Client	Public Services and Procurement Canada (PSPC)
Completion	2024
Market Sector	Government/Municipal
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Zero Carbon Design

Public Services and Procurement Canada is rehabilitating 25–55 St. Clair Avenue East into one of Canada's first carbon-neutral government buildings. The deep retrofit modernizes the 1950s-era structure to align with federal climate targets while preserving its civic character.

RDH is providing building enclosure consulting and energy and emissions support throughout the multi-phase project, focused on achieving Zero Carbon Building – Design certification. Services include energy modeling, enclosure renewal strategies, and airtightness detailing to reduce energy demand and support the all-electric system design.

The retrofit incorporates high-performance glazing, deep insulation, enhanced air barriers, and integration of geothermal heating and solar PV. RDH's work supports long-term asset renewal and advances the federal government's broader decarbonization goals.

Art Gallery of Ontario – Dani Reiss Modern and Contemporary Gallery



Location	Toronto, ON
Client	Art Gallery of Ontario
Completion	Ongoing
Market Sector	Cultural
Services Provided	Building Enclosure Consulting, Zero Carbon Design, Embodied Carbon Consulting

The Art Gallery of Ontario's new Dani Reiss Modern and Contemporary Gallery is an all-electric expansion targeting Zero Carbon Operating Building certification. No combustion-based systems are used for heating or cooling, reflecting the AGO's commitment to climate action and sustainable design.

RDH is providing building enclosure consulting and zero carbon design support, with a focus on high-performance enclosure detailing aligned with Passive House principles. We are collaborating closely with the design team to integrate thermal control, air barrier continuity, and glazing performance into the gallery's distinctive form.

This project advances low-carbon design in a challenging building type, where ventilation, humidity control, and preservation requirements are typically energy-intensive. RDH's work supports a resilient, efficient solution that protects and elevates the art experience.

Pickering Heritage & Community Centre

Location	Pickering, ON
Client	City of Pickering
Completion	Ongoing
Market Sector	Civic, Cultural
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Zero Carbon Design

The Pickering Heritage and Community Centre is a landmark civic project designed to celebrate the city's rich cultural legacy while providing a dynamic, future-ready community space. This innovative facility—envisioned as a cultural and educational hub—will bring together the Pickering Museum Village, public library services, archival storage, and community gathering areas in one integrated, net-zero carbon building. As part of the City of Pickering's long-term sustainability and cultural planning, the PHCC is not only a symbol of local heritage but also a model for low-carbon, climate-resilient public infrastructure.

RDH is providing a comprehensive suite of services that include energy and climate consulting to support the project's Zero Carbon Building certification, building enclosure consulting to ensure long-term durability and performance, and expertise in mass timber moisture management to support the use of sustainable materials. Our integrated approach is helping the City of Pickering realize its ambitious goals for sustainability, resilience, and community engagement.

Centennial College, Story Arts Centre Library

Location	Toronto, ON
Client	Centennial College
Completion	Ongoing
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Energy and Climate Services

The Story Arts Centre Library project involves the renovation and expansion of Centennial College's media and design campus in East Toronto. The modernized facility will offer flexible learning spaces, improved daylight access, and updated infrastructure to support evolving academic needs.

RDH is providing building enclosure consulting and energy design support, with a focus on integrating performance upgrades into the existing building structure. Our work includes thermal and moisture control detailing, durability planning, and guidance toward the college's energy performance targets.

The enclosure strategy uses transparent and reflective materials to enhance natural light and occupant comfort while meeting high-efficiency performance goals. RDH's contributions support a modern academic environment that aligns with Centennial's climate action commitments.

St. John's Kitchen

Location	Kitchener, ON
Client	The Working Centre
Completion	Ongoing
Market Sector	Non-Profit
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Zero Carbon Design

St. John's Kitchen is being redeveloped into a zero-carbon, mixed-use facility that includes community meal services, social supports, and 38 units of supportive housing. Located in downtown Kitchener, the project reflects a community-led vision for inclusive, sustainable development.

RDH is providing building enclosure consulting and zero-carbon retrofit strategy, focused on integrating performance upgrades within the constraints of an existing structure and compact urban site. Our work addresses thermal performance, moisture control, and airtightness to support long-term durability and occupant well-being.

The design incorporates mass timber, high-efficiency systems, and an all-electric energy strategy. RDH's contributions help The Working Centre deliver a resilient, low-carbon space that supports housing stability, community care, and environmental stewardship.

Quilchena Community Centre

Location	Quilchena, BC
Client	Upper Nicola Band
Completion	Ongoing
Market Sector	Indigenous and First Nations, Civic
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Zero Carbon Design, Embodied Carbon Consulting

The Quilchena Community Centre is a new multi-use facility for the Upper Nicola Band, designed to provide space for gathering, cultural programming, wellness services, and emergency response. Located on Syilx territory near Nicola Lake, the building is elevated above the 200-year floodplain and designed for long-term resilience.

RDH is providing building enclosure consulting, energy and emissions modeling, and zero carbon design support. Our work focuses on delivering a high-performance enclosure and all-electric energy strategy that supports the community's climate and sustainability goals.

The project incorporates passive design strategies, durable enclosure systems, and solar PV to reduce emissions and support year-round comfort. RDH's contributions help realize a welcoming, efficient facility rooted in Indigenous values and climate action.

Red River College, Manitou a bi Bii daziigae

Location	Winnipeg, MB
Client	Diamond Schmitt Architects
Completion	2021
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, LEED Certification

Manitou a bi Bii daziigae is a transformative downtown facility for Red River College, combining a renovated heritage warehouse with a new four-storey academic addition. Designed to support creativity, collaboration, and Indigenous inclusion, the project achieved LEED v4 Gold certification and near net zero energy performance.

RDH was engaged by Diamond Schmitt Architects to support enclosure and energy strategies that met ambitious performance targets and aligned with Red River College's climate goals. Services included energy modeling for Manitoba Energy Code and LEED certification, development of a measurement and verification plan, and high-performance enclosure design. We also acted as the LEED consultant, guiding the team through the process to achieve LEED Gold certification.

RDH conducted heritage masonry testing to guide a safe retrofit insulation approach and consulted on both the heritage and new-build components to ensure long-term durability and energy efficiency.

The facility is now one of Red River College's most efficient and culturally significant buildings—advancing its leadership in sustainability, Indigenous engagement, and post-secondary education.

Passive House

Select Projects

- → Mercy Greenbrae at Marylhurst Commons | Lake Oswego, OR
- → Parkview at Terwilliger Plaza | Portland, OR
- → 600 Rivers Edge | Medford, MA
- → 745 Concord | Boston, MA
- → Dillon House | Boston, MA
- → Longwood Place | Boston, MA
- → 47 Olympia | Amherst, MA
- → Bunker Hill Housing Redevelopment | Cambridge, MA
- → Volpe Center Redevelopment | Cambridge, MA
- → 1250 Granville | Vancouver, BC
- → Khupkhahpay'ay | Vancouver, BC
- → CURV | Vancouver, BC
- → Harding Heights Passive House | Smithers, BC
- → King Edward and Knight Street | Vancouver, BC
- → University of British Columbia Okanagan, Skeena Residence | Kelowna, BC
- → University of Victoria, Student Housing and Dining | Victoria, BC
- → 200–201 Friel Street | Ottawa, ON
- → 55 Queenston Road Passive House | Hamilton, ON *(Certification)*
- → 71 Main Street | Hamilton, ON
- → 1620 Main Street East | Hamilton, ON
- → Blossom Park Redevelopment | Woodstock, ON
- → Mount Pleasant Village, Brampton Block A | Brampton, ON
- → University of Toronto Scarborough Campus, Harmony Commons | Toronto, ON
- → 933 Gladstone Village | Ottawa, ON

Mercy Greenbrae at Marylhurst Commons | Lake Oswego, OR

A 100-unit and 100% affordable apartment building for families earning less than 60% of the area median income built to PHIUS standards.

- → **Owner:** Mercy Housing (RDH client)
- → **Architect:** Carleton Hart Architecture
- → **Services Provided:** Passive House Verification
- → **Market Sector:** Residential

Image courtesy of Josh Partee

Parkview at Terwilliger Plaza | Portland, OR

A high-rise building that adds 127 Independent Living apartments to the existing three building senior living campus.

- → **Owner:** Terwilliger Plaza Inc. (RDH client)
- → **Architect:** LRS Architects
- → **Services Provided:** Building Enclosure Consulting, Passive House Verification
- → **Market Sector:** Residential

Image courtesy of David Papazian

600 Rivers Edge | Medford, MA

A 7-story podium style market rate residential apartment building with approximately 224 residential units with amenity, parking, and retail components at the first and second levels.

- → **Architect:** Gensler (RDH client)
- → **Services Provided:** Building Enclosure Consulting, Passive House Consulting
- → **Market Sector:** Residential

Image courtesy of Preotle, Lane & Associates

745 Concord | Boston, MA

A 12-story residential building of approximately 230,000 square feet, containing tenant amenity spaces and apartment units.

- → **Owner:** Boylston Properties (RDH client)
- → **Architect:** Hacin
- → **Services Provided:** Building Enclosure Consulting, Passive House Consulting
- → **Market Sector:** Residential

Image courtesy of Hacin

Dillon House | Boston, MA

A 3-story office building home to the MBA Admissions office at Harvard Business School constructed in 1965.

- → **Owner:** Harvard Business School (RDH client)
- → **Architect:** designLAB Architects (RDH client)
- → **Services Provided:** Building Enclosure Consulting, Building Enclosure Commissioning, Passive House Consulting
- → **Market Sector:** Higher-ed

Image courtesy of Harvard University

Longwood Place | Boston, MA

A 205,000-gross-floor-area and 210 feet tall residential building, planned to be all-electric and Passive House Certified.

- → **Architect:** Sasaki, Elkus Manfredi Architects (RDH client)
- → **Services Provided:** Building Enclosure Consulting, Passive House Consulting
- → **Market Sector:** Residential

Image courtesy of Sasaki, Elkus Manfredi

47 Olympia | Amherst, MA

A 100,000 gsf, 5-stories, mixed matriculated, mass timber, modular facade student and residential housing building.

- → **Architect:** Modus Studio
- → **Services Provided:** Building Enclosure Consulting, Passive House Consulting
- → **Market Sector:** Higher-ed

Image courtesy of Modus Studio

Bunker Hill Housing Redevelopment | Cambridge, MA

15 new mixed-use multi-family residential buildings that provide 2,699 units of mixed-income housing, including 1,010 deeply affordable units.

- → **Architect:** Stantec (RDH client)
- → **Services Provided:** Building Enclosure Consulting, Passive House Verification
- → **Market Sector:** Mixed-use

Image courtesy of Stantec

Volpe Center Redevelopment | Cambridge, MA

A 14-acre residential, recreational, and commercial development.

- → **Architect:** Elkus Manfredi Architects
- → **Services Provided:** Building Enclosure Consulting, Passive House Consulting
- → **Market Sector:** Mixed-use

Image courtesy of Design Distill

1250 Granville | Vancouver, BC

A 9-story mixed-use development located in downtown Vancouver, BC.

- → **Owner:** P. Rock Development
- → **Architect:** Lang Wilson Practice in Architecture Culture (RDH client) and Intelligent City
- → **Services Provided:** Passive House Verification
- → **Market Sector:** Mixed-use

Image courtesy of Intelligent City

Khupkhahpay'ay | Vancouver, BC

A 65,000 square foot, 9-storey, 81-unit, affordable housing project that features mass timber design and is targeting Passive House.

- → **Architect:** GBL Architects (RDH client)
- → **Services Provided:** Building Enclosure Consulting, Passive House Consulting, Air Barrier Commissioning
- → **Market Sector:** Residential

Image courtesy of GBL Architects

CURV | Vancouver, BC

Designed to be the world's tallest Passive House building, the 60-storey multi-unit residential tower combines energy efficiency with architectural excellence.

- → **Architect:** WKK Architects
- → **Services Provided:** Building Enclosure Engineering, Façade Engineering, Passive House Consulting
- → **Market Sector:** Residential

Image courtesy of CURV

Harding Heights Passive House | Smithers, BC

A three-storey, 1290 m^2 wood-frame residential Passive House building, providing housing for seniors and adults with disabilities.

- → **Architect:** Cornerstone Architecture
- → **Owner:** BC Housing (RDH client)
- → **Services Provided:** Passive House Consulting
- → **Market Sector:** Residential

Image by RDH

King Edward and Knight Street | Vancouver, BC

A 14-story permanent, modular volumetric steel building made up of studio units with community facilities.

- → **Architect:** Stantec (RDH client)
- → **Services Provided:** Passive House Consulting, Sustainability Consulting
- → **Market Sector:** Residential

Image courtesy of Stantec

University of British Columbia Okanagan, Skeena Residence | Kelowna, BC

The 6-story, Passive House-certified building provides a dynamic living and learning experience for 220 students and the growing community.

- → **Architect:** PUBLIC: Architecture + Communication Inc. (RDH client)
- → **Owner:** UBC Properties Trust (RDH Client)
- → **Services Provided:** Building Enclosure Consulting, Passive House Consulting
- → **Market Sector:** Residential (Student Housing)

Image courtesy of public architecture

University of Victoria, Student Housing and Dining | Victoria, BC

A $201 million housing and dining complex designed to meet Passive House and LEED Gold standards.

- → **Owner:** University of Victoria, BC (RDH client)
- → **Services Provided:** Passive House Consulting, Building Enclosure Consulting
- → **Market Sector:** Residential (Student Housing)

Image courtesy of Michael Elkan

200-201 Friel Street | Ottawa, ON

A 12-storey, 110-unit residential tower addition with amenities spaces.

- → **Architect**: Diamond Schmitt Architects (RDH Client)
- → **Owner:** Ottawa Community Housing
- → **Services Provided:** Passive House Consulting, Building Enclosure Consulting
- → **Market Sector:** Residential (Affordable Housing)

Image courtesy of IBI Group

55 Queenston Road | Hamilton, ON

A 6-storey, 41-unit affordable housing apartment building.

- → **Architect:** Toms + McNally Design, Invizij Architects (RDH Client)
- → **Owner:** City of Hamilton
- → **Services Provided:** Passive House Consulting
- → **Market Sector:** Residential (Affordable Housing)

Image courtesy of Invizij Architects

71 Main Street | Dundas, ON

A 9-storey residential tower in the core of Dundas, Ontario.

- → **Architect:** DPAI Architecture Inc.
- → **Owner:** Carriage Gate Homes (RDH Client)
- → **Services Provided:** Passive House Consulting, Building Enclosure Consulting
- → **Market Sector:** Residential

Image courtesy of DPAI Architects Inc.

1620 Main Street E | Hamilton, ON

A 6-story, 42-unit Passive House building and CityHousing Hamilton's first mass timber project.

- → **Architect:** mcCallumSather
- → **Owner:** CityHousing Hamilton (RDH Client)
- → **Services Provided:** Passive House Consulting, Building Enclosure Consulting, Mass Timber Moisture Risk Management, Airtightness Testing
- → **Market Sector:** Residential (Affordable Housing)

Image courtesy of McCallumSather

Blossom Park Redevelopment | Woodstock, ON

A 3-story, 34-unit affordable housing apartment building built to Passive House standards.

- → **Architect:** Invizij Architects Inc. (RDH client)
- → **Owner:** Indwell
- → **Services Provided:** Passive House Consulting
- → **Market Sector:** Residential

Image by RDH

Mount Pleasant Village, Brampton Block A | Brampton, ON

This residential project will include a 12-storey mass timber building, ground floor amenities and 310 rental units.

- → **Architect:** Lemay + Giovanni Tassone Architects
- → **Owner:** The Daniels Corporation (RDH client)
- → **Services Provided:** Passive House Consulting, Building Enclosure Consulting, Embodied Carbon Consulting
- → **Market Sector:** Residential

Image courtesy of Lemay + Giovanni Tassone Architects

University of Toronto Scarborough Campus, Harmony Commons | Toronto, ON

A 9-storey student residence building accommodating 750 students and includes bedrooms, suites, and other amenity spaces.

- → **Architect:** Handel Architects
- → **Owner:** University of Toronto Scarborough
- → **Services Provided:** Passive House Consulting, Building Enclosure Consulting
- → **Market Sector:** Residential (Student Housing)

Image courtesy of Ryan Fung

University of Victoria, New Student Housing and Dining

Location	Victoria, BC
Client	University of Victoria, BC
Completion	Cheko'nien House (2022), Sngeque House (2023)
Market Sector	Residential (Student Housing), Higher-ed
Services Provided	Passive House Consulting, Building Enclosure Consulting, Airtightness Testing

To expand affordable student housing and advance its net-zero goals, the University of Victoria developed a $201 million housing and dining complex designed to meet Passive House and LEED Gold standards. The two mass timber buildings—Cheko'nien House and Sngeque House—add 783 beds and include classrooms, dining facilities, and Indigenous student support spaces.

RDH provided Passive House consulting, building enclosure consulting, and airtightness testing, supporting the project from schematic design through construction. We helped define performance targets early in the process and guided key decisions around thermal control, durability, constructability, and energy use. Both buildings exceeded Passive House airtightness thresholds, supported by RDH's field testing, mock-up review, and quality assurance.

The project includes one of the world's largest Passive House-certified commercial kitchens. RDH led research and technical design to optimize the layout, select high-efficiency equipment, and integrate heat recovery systems.

All-electric mechanical systems were designed for future climate conditions, contributing to long-term decarbonization.

933 Gladstone Village

Location	Ottawa, ON
Client	Ottawa Community Housing
Completion	Ongoing
Market Sector	Residential
Services Provided	Building Enclosure Consulting, Energy & Climate Services, Passive House Consulting

Gladstone Village is a transformative residential development in Ottawa that sets a new benchmark for urban sustainability, affordability, and livability. Designed by Diamond Schmitt Architects, this first phase will deliver two residential buildings—including one dedicated to affordable housing—set within a vibrant, transit-connected community. The development emphasizes climate-conscious design, long-term durability, and social inclusivity, aligning with Ottawa Community Housing's goals for sustainable growth and resilient infrastructure.

RDH is providing integrated consulting services focused on high-performance building design. Our team is providing building enclosure consulting to support durable, low-maintenance assemblies, energy performance consulting to optimize systems efficiency and reduce operational emissions, and Passive House consulting services to help the project meet its ambitious energy and comfort targets. Through this collaborative effort, RDH is helping to shape a new standard for affordable, low-carbon housing in Canada.

Net-Zero

Select Projects

- → Parks Canada, Tulita Office & Staff Housing | Naats'ihch'oh National Park Reserve, NT
- → Elora Rammed Earth House | Elora, Centre Wellington, ON
- → Harvard University, ArtLab | Boston, MA
- → Near-Net Zero Buildings in Northern Canada Feasibility Study | Multiple Locations
- → Fanshawe College, Kestrel Court Residence | London, ON
- → Baker District Redevelopment | Guelph, ON

Parks Canada, Tulita Office & Staff Housing

Location	Naats'ihch'oh National Park Reserve, NT
Client	Parks Canada
Completion	Ongoing
Market Sector	Residential, Remote
Services Provided	Energy and Climate Services, Zero Carbon Design Support, Building Lifecycle and Portfolio Management Services

As part of its climate adaptation and decarbonization goals, Parks Canada engaged RDH to assess the feasibility of net-zero carbon design for new office and staff housing facilities in Naats'ihch'oh National Park Reserve near Tulita, NT.

RDH conducted detailed energy and carbon modeling alongside life cycle cost analysis to evaluate low-carbon building options that align with Parks Canada's climate targets and operational needs. The study compared enclosure strategies, mechanical systems, and renewable energy scenarios under varying capital and operating cost assumptions.

Key considerations included transportation logistics, local material availability, and construction in a remote northern climate. RDH's work provides a clear, data-driven framework to support long-term investment decisions aligned with federal sustainability commitments.

Elora Rammed Earth House

Location	Elora, Centre Wellington, ON
Client	Confidential
Completion	Ongoing
Market Sector	Residential
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Zero Carbon Design

This custom single-family residence explores low-carbon design with rammed earth wall systems, combining material innovation with high-performance detailing. Designed as a near-net-zero, all-electric home, the project integrates passive design strategies to support long-term energy efficiency.

RDH is providing building enclosure consulting and energy modeling to optimize the thermal performance of the rammed earth assembly while addressing airtightness, moisture control, and durability. Our team also advised on solar orientation, shading, and system selection to refine a carbon-conscious approach tailored to rural Ontario's climate.

Harvard University, ArtLab

Location	Boston, MA
Client	Harvard University
Completion	2019
Market Sector	Higher-ed, Cultural
Services Provided	Building Enclosure Consulting

ArtLab is a 9,000-sf interdisciplinary arts space on Harvard's Allston campus, designed to support experimentation across media, performance, and technology. The project reflects Harvard's climate goals and serves as a demonstration of sustainable cultural architecture.

RDH provided building enclosure consulting throughout design and construction, supporting the development of a highly insulated, airtight envelope that reduces thermal loads and enables future all-electric operation.

The enclosure includes prefabricated wall panels, triple-glazed windows, and a continuous air barrier. RDH supported detailing for thermal bridging, durability, and constructability, helping the team maintain both energy performance and architectural intent.

Near Net Zero Buildings in Northern Canada Feasibility Study

Location	Multiple Locations (Northern Canada)
Client	Natural Resources Canada (NRCan)
Completion	Ongoing
Market Sector	Government, Remote
Services Provided	Energy and Climate Consulting, Research, Development & Demonstration (RD&D), Building Enclosure Consulting

To support decarbonization efforts in remote and northern communities, Natural Resources Canada engaged RDH to conduct a feasibility study evaluating pathways to near net zero energy performance for typical northern building types. The study addresses the distinct technical, logistical, and economic barriers associated with achieving high-performance construction standards in cold, remote climates.

RDH performed comprehensive energy and carbon modeling across a diverse range of building typologies—including residential, institutional, and community facilities. Our analysis explored opportunities for deep building enclosure upgrades, all-electric building systems, and the integration of renewable energy solutions. We incorporated considerations around climate resilience, construction limitations, and operational realities unique to remote and Indigenous communities.

The resulting framework provides NRCan with critical insights to guide future policy development and program implementation. The study's findings enable informed investments in northern infrastructure, supporting energy sovereignty, emissions reduction, resilience, and the long-term well-being of communities in northern Canada.

Fanshawe College, Kestrel Court Residence

Location	London, ON
Client	Fanshawe College
Completion	Ongoing
Market Sector	Higher-ed, Residential (Student Housing)
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Research, Development & Demonstration (RD&D)

The Kestrel Court Residence is a new mass timber student housing development aligned with Fanshawe College's commitment to sustainable campus growth. Designed to achieve net zero energy performance, the project will deliver a durable, resilient, and student-focused living environment.

RDH is providing comprehensive Building Enclosure Consulting and Energy & Climate services throughout the project's design and construction phases. Our scope includes detailed analysis of energy use intensity (EUI) and thermal energy demand intensity (TEDI), strategic integration of all-electric mechanical systems, and guidance on low-carbon building enclosure assemblies optimized for mass timber construction.

Our team is also advising on critical performance aspects such as moisture management, thermal bridging mitigation, and airtightness strategies tailored to the considerations of mass timber structures.

Baker District Redevelopment

Location	Guelph, ON
Client	City of Guelph
Completion	Ongoing
Market Sector	Residential
Services Provided	Building Enclosure Consulting

The Baker District Redevelopment is a civic revitalization initiative in downtown Guelph, designed to create a compact, connected, and climate-resilient urban precinct. The project features a new central library, residential and commercial buildings, and enhanced public spaces—all targeting net-zero carbon performance.

RDH is providing integrated Building Enclosure Consulting services across multiple components of the redevelopment. Our team advises on high-performance enclosure system design to support net-zero targets and guides passive design and renewable energy-ready strategies.

Collaborating closely with project stakeholders, RDH is optimizing enclosure detailing, addressing thermal bridging, and ensuring alignment with ambitious whole-building performance objectives.

LEED

Select Projects

→ Stratford Festival's Tom Patterson Theatre | Stratford, ON

→ Red River College, Manitou a bi Bii daziigae

→ Gateway of Pacific | San Francisco, CA

→ PDX International Airport | Portland, OR

Stratford Festival, Tom Patterson Theatre

Location	Stratford, ON
Client	Stratford Festival
Completion	2021
Market Sector	Cultural
Services Provided	Building Enclosure Consulting, Façade Engineering, Energy and Climate Consulting, LEED Certification, Field Testing and Verification

The Tom Patterson Theatre is a landmark 77,000-sf cultural facility that anchors the Stratford Festival's riverside campus. Designed by Hariri Pontarini Architects, the new venue replaces an aging structure and supports a range of modern productions, community events, and educational programs.

RDH was engaged early to help the project team achieve its ambitious sustainability goals, including LEED Gold certification. Our team provided enclosure consulting, façade engineering, and energy modeling throughout design and construction, with a focus on long-term durability and energy performance. We also acted as the LEED consultant, guiding the team through the process to achieve LEED Gold certification.

We conducted reviews of enclosure and mechanical systems, supported energy modeling for design optimization, and performed field testing to verify air and water infiltration resistance for the custom curtain wall system.

The project has been widely recognized for its architectural and environmental excellence, including the 2022 Governor General's Medal in Architecture and a Civic Trust Award.

Red River College, Manitou a bi Bii daziigae

Location	Winnipeg, MB
Client	Diamond Schmitt Architects
Completion	2021
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, LEED Certification

Manitou a bi Bii daziigae is a transformative downtown facility for Red River College, combining a renovated heritage warehouse with a new four-storey academic addition. Designed to support creativity, collaboration, and Indigenous inclusion, the project achieved LEED v4 Gold certification and near net zero energy performance.

RDH was engaged by Diamond Schmitt Architects to support enclosure and energy strategies that met ambitious performance targets and aligned with Red River College's climate goals. Services included energy modeling for Manitoba Energy Code and LEED certification, development of a measurement and verification plan, and high-performance enclosure design. We also acted as the LEED consultant, guiding the team through the process to achieve LEED Gold certification.

RDH conducted heritage masonry testing to guide a safe retrofit insulation approach and consulted on both the heritage and new-build components to ensure long-term durability and energy efficiency.

The facility is now one of Red River College's most efficient and culturally significant buildings—advancing its leadership in sustainability, Indigenous engagement, and post-secondary education.

Gateway of Pacific

Location	San Francisco, CA
Client	BioMed Realty
Completion	Ongoing
Market Sector	Life Sciences, Commercial
Services Provided	Building Enclosure Consulting, Façade Engineering

Gateway of Pacific is a multi-phase life sciences campus developed by BioMed Realty in South San Francisco, designed to deliver high-performance laboratory and office spaces aligned with ambitious sustainability goals. Phase I and the Traverse building have achieved LEED Platinum certification, while additional campus buildings target LEED Gold or Silver.

RDH is providing integrated Building Enclosure Consulting and Façade Engineering across multiple phases, from early design through construction. Our team advises on high-performance façade design, thermal and moisture control detailing, glazing optimization, and air barrier continuity.

Our technical input directly aligns with BioMed Realty's objectives for sustainability, asset resilience, and long-term building performance.

PDX International Airport,

Location	Portland, OR
Client	Port of Portland
Completion	2024 (Phase 1), 2026 (Full Completion)
Market Sector	Transportation/Aviation
Services Provided	Building Enclosure Consulting

As one of the most ambitious airport transformations in North America, the Portland International Airport (PDX) Main Terminal Redevelopment reimagines the traveler experience while placing sustainability at the core of design. Led by the Port of Portland, the project targets LEED Gold certification and seeks to reduce energy use by 50% per square foot—all while nearly doubling the terminal's size.

RDH joined the team to guide building enclosure design across a series of complex, high-performance elements, including a nine-acre mass timber roof, custom curtain walls, 49 skylights, and expansive glazed areas. Our work focused on developing strategies to support airtightness, mitigate thermal bridging, and maintain long-term durability, ensuring each detail aligned with performance targets and construction feasibility.

The project's use of locally and sustainably harvested timber—including materials sourced from Indigenous-led forestry operations within 300 miles—reflects a deeper commitment to both carbon reduction and regional equity. Inside, the terminal prioritizes daylighting, water conservation, and wellness through thoughtful passive design and climate-responsive systems.

Phase 1 opened in August 2024, introducing new check-in areas, retail and restaurant spaces, and a mezzanine-level public zone designed for gathering and relaxation. RDH's involvement helped realize a building that is not only beautiful and functional, but future-ready—poised to serve travelers and the climate for decades to come.

Regional Standards

Select Projects

- → Welcher Avenue Affordable Housing | Coquitlam, BC *(BC Energy Step Code – Step 4)*
- → 1010 Expo Boulevard | Vancouver, BC *(Vancouver Building By-Law)*
- → 1245 West Broadway | Vancouver, BC *(Vancouver Building By-Law)*
- → 450 Pacific | Vancouver, BC *(Vancouver Building By-Law)*
- → 525 Powell | Vancouver, BC *(Vancouver Building By-Law)*

Welcher Avenue Affordable Housing | Coquitlam, BC

Multifamily development targeting Step 4 of the BC Energy Step Code and net zero energy ready.

- → **Owner**: Metro Vancouver Housing Corporation
- → **Architect**: Local Practice Architecture + Design (RDH client)
- → **Services Provided**: Building Enclosure Consulting, Energy & Climate Consulting
- → **Market Sector**: Residential (Affordable Housing)

Image courtesy of Local Practice Architecture + Design

1050 Expo Boulevard | Vancouver, BC

High-rise residential project meeting near-zero carbon performance criteria under the Vancouver Building By-Law (VBBL).

- → **Owner**: City of Vancouver (RDH client)
- → **Architect**: PUBLIC Architecture + Communication (RDH client)
- → **Services Provided**: Building Enclosure Consulting, Energy and Climate Consulting
- → **Market Sector**: Residential (Affordable Housing)

Image courtesy of PUBLIC

1245 West Broadway | Vancouver, BC

Mixed-use development in Vancouver's Broadway corridor is designed to comply with VBBL enclosure and energy requirements.

- → **Owner**: Value Property Centre Inc. (RDH client)
- → **Architect**: Formosis Architecture Inc.
- → **Services Provided**: Building Enclosure Consulting, Energy and Climate Consulting
- → **Market Sector**: Mixed-Use

Image courtesy of Formosis Architecture

450 Pacific | Vancouver, BC

Mid-rise residential project incorporating VBBL-aligned enclosure and airtightness strategies.

- → **Owner**: City of Vancouver (RDH client)
- → **Architect**: PUBLIC Architecture + Communication (RDH client)
- → **Services Provided:** Building Enclosure Consulting, Energy and Climate Consulting, Embodied Carbon Consulting
- → **Market Sector**: Residential (Affordable Housing)

Image courtesy of PUBLIC

525 Powell | Vancouver, BC

Supportive housing development designed to meet Vancouver Building By-Law performance criteria.

- → **Owner**: City of Vancouver
- → **Architect**: Stantec Architecture Ltd. (RDH client)
- → **Services Provided**: Building Enclosure Consulting, Energy and Climate Consulting, Embodied Carbon Consulting
- → **Market Sector**: Residential (Supportive Housing)

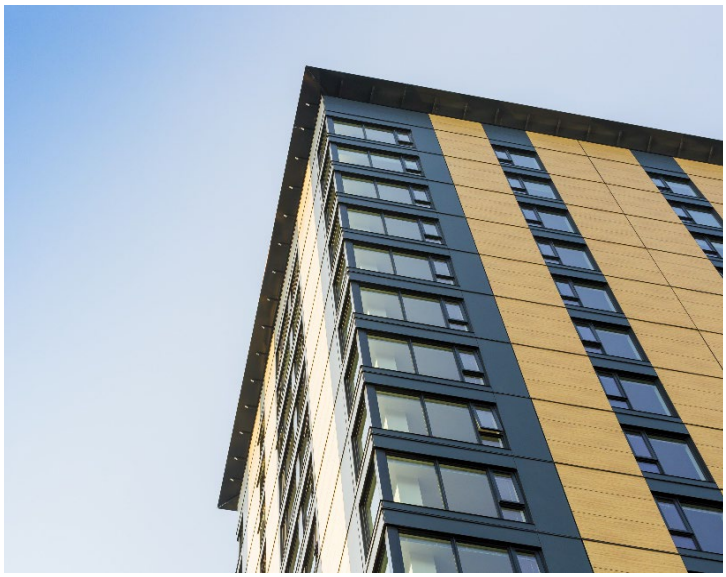
Image Icourtesy of Stantec Architecture Ltd.

Mass Timber

Select Projects

- → University of British Columbia, Brock Commons Tallwood House | Vancouver, BC
- → 1766 Frances Street | Vancouver, BC
- → Baker's Place | Madison, WI
- → British Columbia Institute of Technology (BCIT), Tall Timber Student Housing | Burnaby, BC
- → University of Victoria, Student Housing and Dining | Victoria, BC
- → University of Toronto, Academic Wood Tower | Toronto, ON
- → Bunker Hill Housing Redevelopment | Cambridge, MA
- → Canada's Earth Tower | Vancouver, BC

University of British Columbia, Brock Commons Tallwood House



Location	Vancouver, BC
Client	UBC Properties Trust
Completion	2017
Market Sector	Student Housing, Higher-ed
Services Provided	Façade Engineering, Building Enclosure Consulting, Field Testing and Monitoring

Brock Commons Tallwood House is a landmark 18-storey student residence at the University of British Columbia and was the tallest contemporary mass timber building in the world at the time of its completion. The 408-bed residence exemplifies innovation in high-rise wood construction, integrating sustainability, speed of delivery, and modern student living.

RDH played a central role in the enclosure design and delivery strategy, supporting the project from early façade concept development through to field review and testing. Faced with an aggressive schedule and strict budget, our team designed a thermally efficient, prefabricated hybrid wood panel system that integrated insulation, cladding, windows, and weather seals—allowing each panel to be installed fully complete.

These prefinished panels were dropped into place and installed at a pace of one full floor per day, enabling the team to complete enclosure installation in just nine weeks. RDH supported the process through shop drawing reviews, manufacturing oversight, on-site testing, and field review to maintain strict alignment with design intent and performance targets.

Our work helped deliver a first-of-its-kind mass timber tower that met UBC's expectations for durability, energy performance, constructability, and design excellence—positioning Brock Commons as a global precedent for tall wood buildings.

1766 Frances Street

Location	Vancouver, BC
Client	Vancouver Native Housing Society
Completion	Ongoing
Market Sector	Residential (Affordable Housing)
Services Provided	Building Enclosure Consulting, Mass Timber, Façade Engineering, Passive House Consulting

1766 Frances Street is a six-storey mass timber residential project in Vancouver designed to deliver high-performance rental housing aligned with the City's low-carbon development goals. The building uses prefabricated cross-laminated timber (CLT) panels to reduce embodied carbon, shorten construction timelines, and support long-term operational efficiency.

RDH is providing Building Enclosure Consulting and Mass Timber detailing support to help integrate the wood superstructure with a high-performance building envelope. Our team is optimizing wall and roof assemblies for moisture control, airtightness, and durability—critical performance factors for timber construction in Vancouver's wet coastal climate.

We are also advising on thermal performance, material transitions, and envelope strategies that align with the City's energy requirements for new residential construction. RDH's work is helping the project team balance constructability and climate performance in delivering durable, modern timber housing for the urban core.

Baker's Place

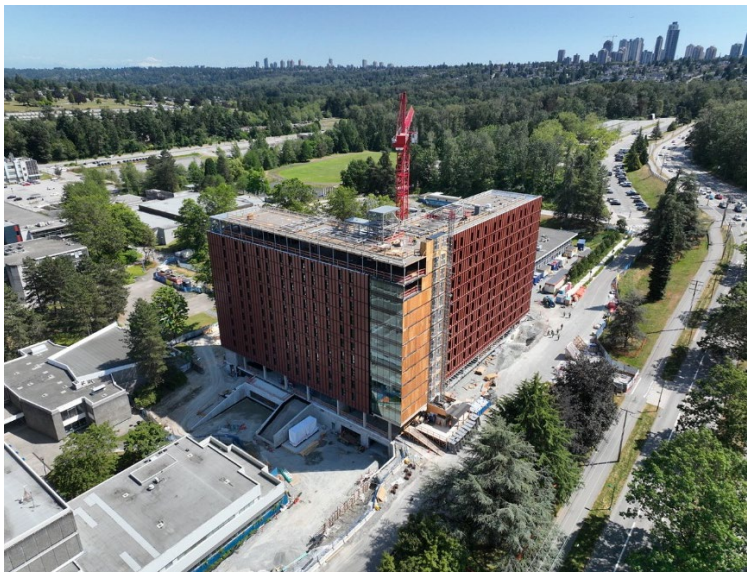
Location	Madison, WI
Client	Urban Land Interests
Completion	Ongoing
Market Sector	Residential, Mixed-use
Services Provided	Building Enclosure Consulting, Mass Timber, Passive House Consulting

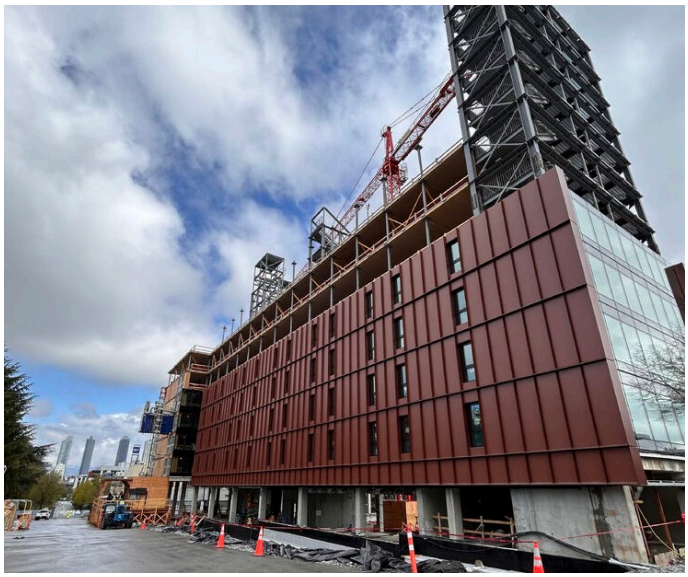
Baker's Place is a new mixed-use mass timber development in downtown Madison that blends the city's industrial character with low-carbon building innovation. The project includes ground-level retail and commercial spaces topped by multi-storey residential units, all framed in exposed mass timber.

RDH is providing Building Enclosure Consulting and Mass Timber integration support to guide envelope detailing and performance strategies tailored to a timber superstructure. Our work focuses on optimizing the interface between prefabricated wood components and high-performance assemblies to manage moisture, maintain airtightness, and support long-term durability in Madison's variable climate.

We are also advising on Passive House energy performance strategies, including envelope-integrated passive design approaches that enhance comfort and support carbon reduction goals. The result is a modern timber building that connects local context with advanced sustainable construction practices.

British Columbia Institute of Technology (BCIT), Tall Timber Student Housing





Location	Burnaby, BC
Client	British Columbia Institute of Technology (BCIT)
Completion	2025
Market Sector	Student Housing, Higher-ed
Services Provided	Building Enclosure Consulting, Mass Timber

The Tall Timber Student Housing project is a 12-storey mass timber development at BCIT's Burnaby campus that will provide 470 new student beds, common areas, and outdoor gathering spaces—all designed with a strong focus on carbon reduction and community well-being.

RDH is supporting the project team with enclosure design consulting to meet BCIT's goals for high efficiency, occupant comfort, and long-term resilience. Our role includes detailing support for prefabricated enclosure assemblies that align with mass timber construction methods, while achieving airtightness, moisture control, and thermal performance targets.

By integrating building science into each phase—from schematic design through construction—RDH is helping BCIT deliver a future-ready, low-carbon residence that supports sustainable campus growth and student success.

University of Victoria, New Student Housing and Dining

Location	Victoria, BC
Client	University of Victoria, BC
Completion	Cheko'nien House (2022), Sngeque House (2023)
Market Sector	Residential (Student Housing), Higher-ed
Services Provided	Building Enclosure Consulting, Mass Timber, Passive House Consulting, Prefabrication Support

The Tall Timber Student Housing project is a 12-storey mass timber development at BCIT's Burnaby campus that will provide 470 new student beds, common areas, and outdoor gathering spaces—all designed with a strong focus on carbon reduction and community well-being.

RDH provided Building Enclosure Consulting and Passive House Consulting to help meet BCIT's goals for high efficiency, occupant comfort, and long-term durability. Our team detailed prefabricated enclosure assemblies that align with mass timber construction, with a focus on airtightness, moisture control, and thermal performance.

We also led Passive House consulting to evaluate trade-offs across passive strategies, envelope detailing, and mechanical system sizing. By integrating building science from schematic design through construction, RDH helped deliver a future-ready, low-carbon residence that supports sustainable campus growth.

University of Toronto, Academic Wood Tower

Location	Toronto, ON
Client	Patkau Architects / MJMA
Completion	Ongoing
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Mass Timber, Energy Performance Consulting, Low-Carbon Design Strategy

The Academic Wood Tower is a 14-storey hybrid mass timber development rising above the University of Toronto's historic St. George campus. Once complete, it will be one of the tallest mass timber academic buildings in North America, demonstrating the potential of low-carbon structural systems in dense urban settings.

RDH is providing Building Enclosure Consulting and Mass Timber detailing support, with a focus on aligning envelope performance with the specific requirements of tall wood construction. Our work includes detailing for airtightness and moisture management, as well as strategies to mitigate thermal bridging and maintain durability within a complex urban site.

The tower integrates mass timber framing with a concrete core and will house academic and administrative spaces for the Rotman School of Management and the Munk School of Global Affairs. RDH's role supports the project team in advancing high-performance, low-carbon design within a landmark institutional building.

Bunker Hill Housing Redevelopment

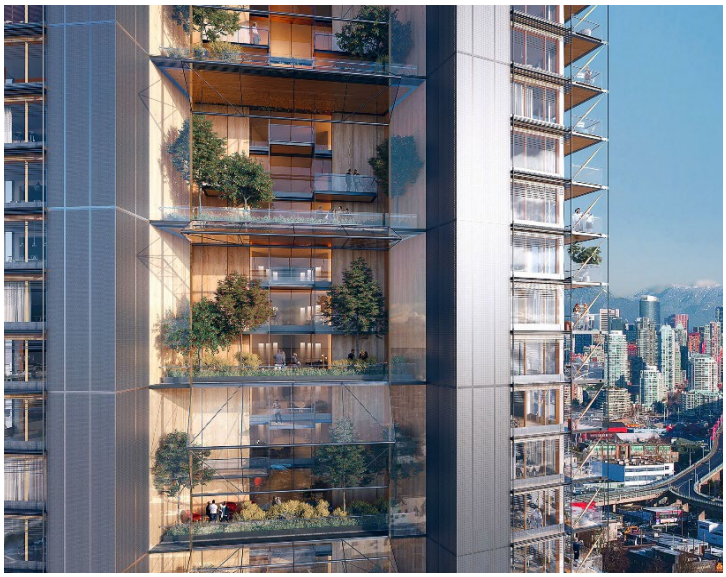
Location	Charlestown, MA
Client	Stantec
Completion	Ongoing
Market Sector	Residential, Mixed-use
Services Provided	Building Enclosure Consulting, Passive House Verification

The Bunker Hill Housing Redevelopment is a large-scale transformation of Boston's oldest public housing site. Once complete, the project will deliver 2,699 new mixed-income homes—1,010 of which will remain deeply affordable—alongside 70,000 sf of new retail and community space. The 26-acre site aims to create a more connected and inclusive neighborhood in Charlestown.

RDH is supporting the design of two key buildings, F and M, which are targeting Passive House certification. Our team is providing Building Enclosure Consulting and Passive House Verification services to help meet aggressive energy performance and resilience goals.

We are advising on airtightness, insulation continuity, and moisture management strategies aligned with Passive House standards, while contributing detailing that supports constructability and long-term durability. RDH's work contributes to the delivery of high-quality, energy-efficient housing in a historically underserved community.

Canada's Earth Tower



Location	Vancouver, BC
Client	Perkins&Will + Delta Group
Completion	In Design (on hold)
Market Sector	Residential, Mixed-use
Services Provided	Building Enclosure Consulting, Mass Timber, Passive House, Energy and Climate Consulting

Canada's Earth Tower is a visionary proposal for what would be the tallest mass timber tower in the world—a mixed-use residential development intended to redefine possibilities for embodied carbon, operational energy, and dense urban living. Located along Vancouver's Broadway Corridor, the project was conceived to demonstrate that tall buildings can be climate-positive, community-oriented, and architecturally expressive.

RDH supported the early design phase, working closely with the architect and development team on façade concepts, envelope strategies, and constructability considerations specific to tall timber construction. Our work focused on high-performance enclosure detailing that supports thermal performance, air tightness, and compatibility with prefabricated mass timber systems.

We also contributed to the project's carbon and energy modeling approach, helping define a pathway that balances Passive House-level efficiency with practical sequencing and form. Although currently on hold, Canada's Earth Tower remains a bold benchmark for sustainable high-rise design and a model for the future of climate-responsive urban development.

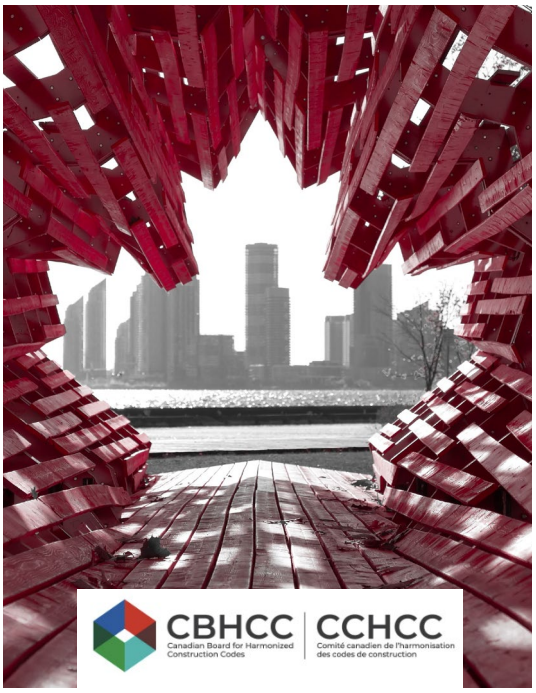
Industry Leadership

Select Contributions

- → Canadian Board for Harmonized Construction Code, Steering Committee | Canada
- → City of Toronto, Green Standard Version 3 and Onward | Toronto, ON
- → City of Toronto, Building Emissions Performance Standard, Steering Committee | Toronto, ON
- → Massachusetts Department of Energy and Resources Stretch and Opt-in Energy Efficiency Code Advisory | Boston, MA

Canadian Board for Harmonized Construction Code, Standing Committee on Energy Efficiency (SC-EE) | Canada

The SC-EE, now renamed the NMCC on Climate Change Mitigation (NMCC-Miti), provides technical oversight on Canada's national energy codes and holds voting authority on code changes. Steve Kemp, RDH Energy + Climate Principal, is a voting member and chaired the task group that developed TEUI targets for the 2025 codes. He is leading two task groups for the 2030 code.



City of Toronto's Green Standard (TGS), version 3 and subsequent versions, Steering Committee | Toronto, ON

The TGS Steering Committee offers industry feedback to the City of Toronto and its consultants on developing TGS goals and metrics. Steve Kemp, RDH Energy + Climate Principal, has been a valued member of both version 3 and version 5 committees.

City of Toronto's Building Emissions Performance Standard (BEPS), Steering Committee | Toronto, ON

Steve Kemp and Marine Sanchez, RDH Energy + Climate Principals, sit on the BEPS Advisory Committee, providing technical guidance and industry input to the City of Toronto on its Emissions Performance Standard and related programs. Part of Toronto's 2021 Net Zero Existing Buildings strategy, the initiative sets tiered carbon reduction targets for most existing building types.

Massachusetts Department of Energy and Resources Stretch and Opt-in Energy Efficiency Code Advisory | Boston, MA

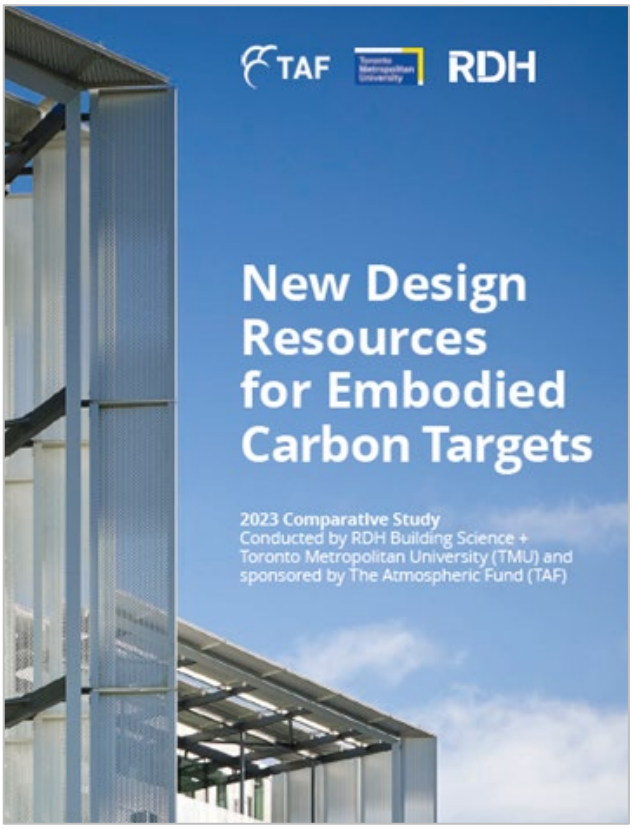
RDH is one of 14 firms serving an advisory role to the Massachusetts Department of Energy and Resources (MA-DOER) that is responsible to for promulgating the Massachusetts Stretch and Opt-in Energy Efficiency Code, the most progressive energy efficiency code in the US. Our contributions include code enforceable language with respect to enclosure performance criteria and thermal bridging.

Embodied Carbon & LCA

Select Projects

- → The Atmospheric Fund (TAF), Design Resources for Embodied Carbon Targets | Canada
- → Mohawk College, The Joyce Centre for Partnership & Innovation Embodied Carbon Analysis | Hamilton, ON
- → Additional projects under other sections with “Embodied Carbon Consulting” noted in list of services

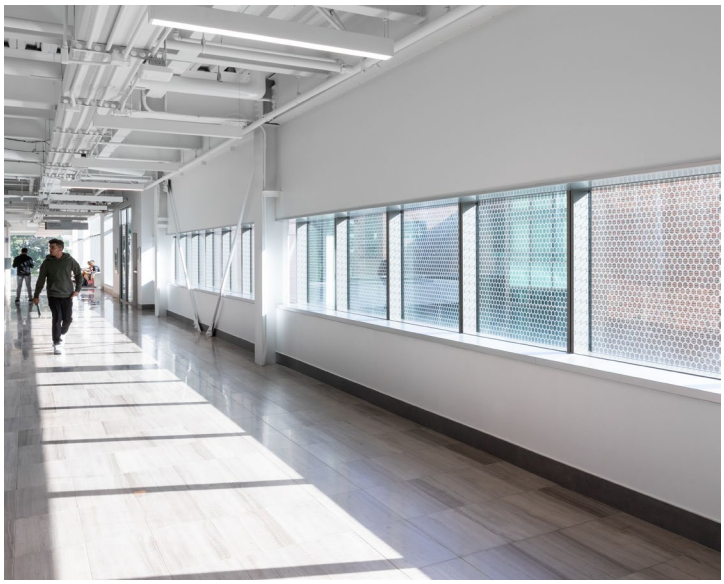
The Atmospheric Fund (TAF), Design Resources for Embodied Carbon Targets



Location	Canada
Client	Toronto Atmospheric Fund (TAF)
Completion	2023
Market Sector	All
Services Provided	Research, Development, and Demonstration (RD&D), Training & Publications

Study on embodied carbon in building enclosure assemblies across the Greater Toronto Area (GTHA). The initiative produced a publicly available database and guidance for 26 common assemblies, helping designers make decisions early in the design process to balance operational and embodied carbon for low-carbon design strategies. The database of assemblies will continue to grow through collaboration with industry.

Mohawk College, The Joyce Centre for Partnership & Innovation Embodied Carbon Analysis



Location	Hamilton, ON
Client	Mohawk College
Completion	2018
Market Sector	Higher-ed
Services Provided	Building Enclosure Consulting, Energy and Climate Consulting, Embodied Carbon Analysis

The Joyce Centre for Partnership and Innovation (JCPI) at Mohawk College is Canada's largest institutional net-zero energy building. RDH was engaged by mcCallumSather Architects to provide building enclosure consulting, energy performance, and embodied carbon consulting from schematic design through post-occupancy verification.

Working within an integrated design team, RDH optimized the enclosure using triple-pane glazing and insulated precast sandwich panels to reduce thermal demand while maintaining comfort and daylighting. Throughout construction, we calibrated the energy model to reflect evolving design decisions, supporting accurate sizing of the renewable energy system.

RDH completed a comprehensive lifecycle assessment (LCA) to calculate the building's embodied carbon as part of the program requirements for CAGBC Zero Carbon Building certification. The analysis showed that embodied carbon for the building was 4,330 tonnes of equivalent CO2. Therefore, the largest GHG impact this now-constructed building will have, has already occurred.

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