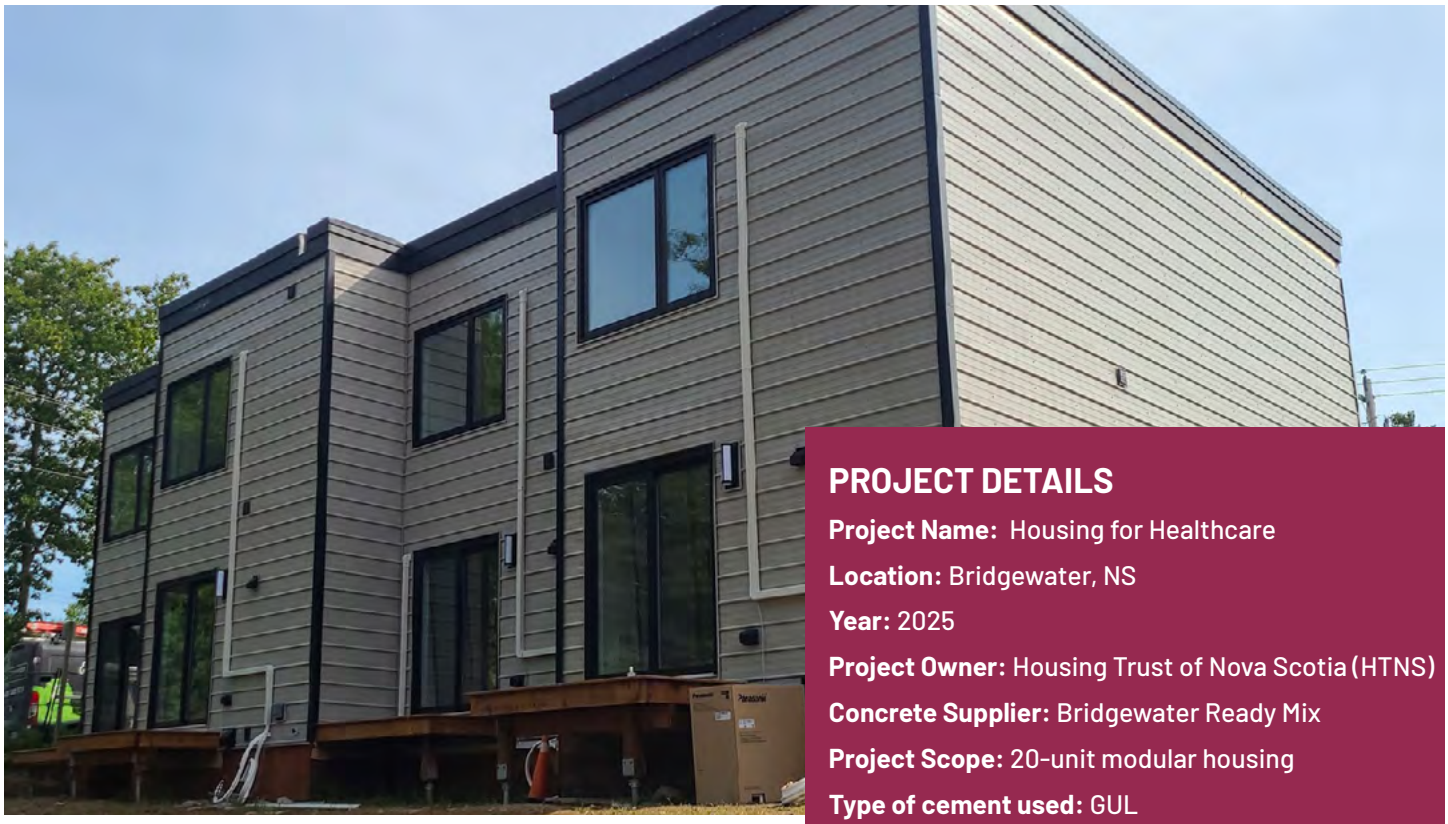
CONCRETECANADA
BÉTONCANADA

Cement Association of Canada
Association Canadienne du Ciment

LOWER CARBON CONCRETE CASE STUDY: HOUSING FOR HEALTHCARE



PROJECT DETAILS

Project Name: Housing for Healthcare

Location: Bridgewater, NS

Year: 2025

Project Owner: Housing Trust of Nova Scotia (HTNS)

Concrete Supplier: Bridgewater Ready Mix

Project Scope: 20-unit modular housing

Type of cement used: GUL

SCMs: Type F fly ash

Exposure Class: F-2, N

Concrete Design Strength: 11-25 MPa

Amount Used: 291 m^3

Housing for Healthcare is a 20-unit modular housing development in Bridgewater, a regional economic hub approximately 100 km southwest of Halifax in Nova Scotia. Built by the Housing Trust of Nova Scotia (HTNS), the primary mission of the HTNS is to provide good quality, affordable housing for low to moderate-income working households, while being environmentally sustainable. These townhouses, made available for lease starting late 2025, were funded for as part of the overall affordable housing program support from the province to HTNS Housing for Healthcare of $45 million at multiple sites.

This project is notable as the local producer, Bridgewater Ready Mix, has committed to lower carbon concrete with the launch of their Type III EPDs for its commercial and residential concrete mix designs, as well as their registered EcoSmart Concrete 30 mix line that commits to 30% carbon reduction without compromising quality and performance.

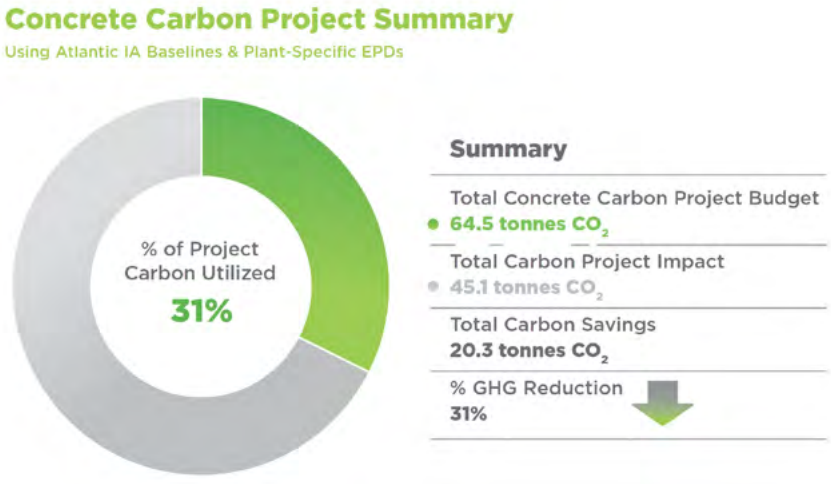
The high-level concrete needs on this project were for lower carbon mixes, with equivalent quality and cost. Mixes were designed and proposed using CSA Performance-Based specifications by Harbourside Engineering, on behalf of Bridgewater Ready Mix, and were collaboratively reviewed and accepted by the project's structural engineer. This approach supported concrete that met all performance requirements while offering carbon-lowering benefits.

Applying the concept of the Concrete Carbon Project Budgeting the 20-unit modular housing project achieved a notable 31% reduction in CO2.

Whether using Plant-Specific Type III EPDs or the more conservative estimates available from using regional industry-average EPDs, this case study serves as an excellent example of how lower carbon concrete can contribute to environmentally-sustainable, affordable housing projects.

Schedule, quality, and cost goals can be achieved, even when lower carbon concrete targets are set, along with key supporting factors:

- Use of Performance-Based Specifications,
- Collaborative dialogue between the ready-mixed concrete producer and the project team during every pre-project and project phase,
- Requiring use of 3rd party validated EPDs for building materials, and
- A vetted carbon analysis process such as the Treasury Board of Canada – endorsed Concrete Carbon Project Budget approach.



Source: Concrete Carbon: A Guideline for Specifying Low Carbon Ready Mixed Concrete in Canada, p.85