

LOWER CARBON CONCRETE CASE STUDY: ALBÉDO AND CPE MISTIGRI



PROJECT DETAILS

Project Name: Albédo and CPE Mistigri

Location: Quebec City, QC

Year: 2024

Project Owner: GRT Action-Habitation de Quebec

Concrete Supplier: Béton Provincial

Contractor: Concrea

Architect: Lafond Côté Architectes

Project Scope: 128 unit seniors' housing project and 148 place daycare centre

Type of cement used: GU, GUb-F/SF

SCMs: Up to 22% silica fume, up to 23% fly ash and silica fume

Exposure Class: N, N-CF, C-1, C-2

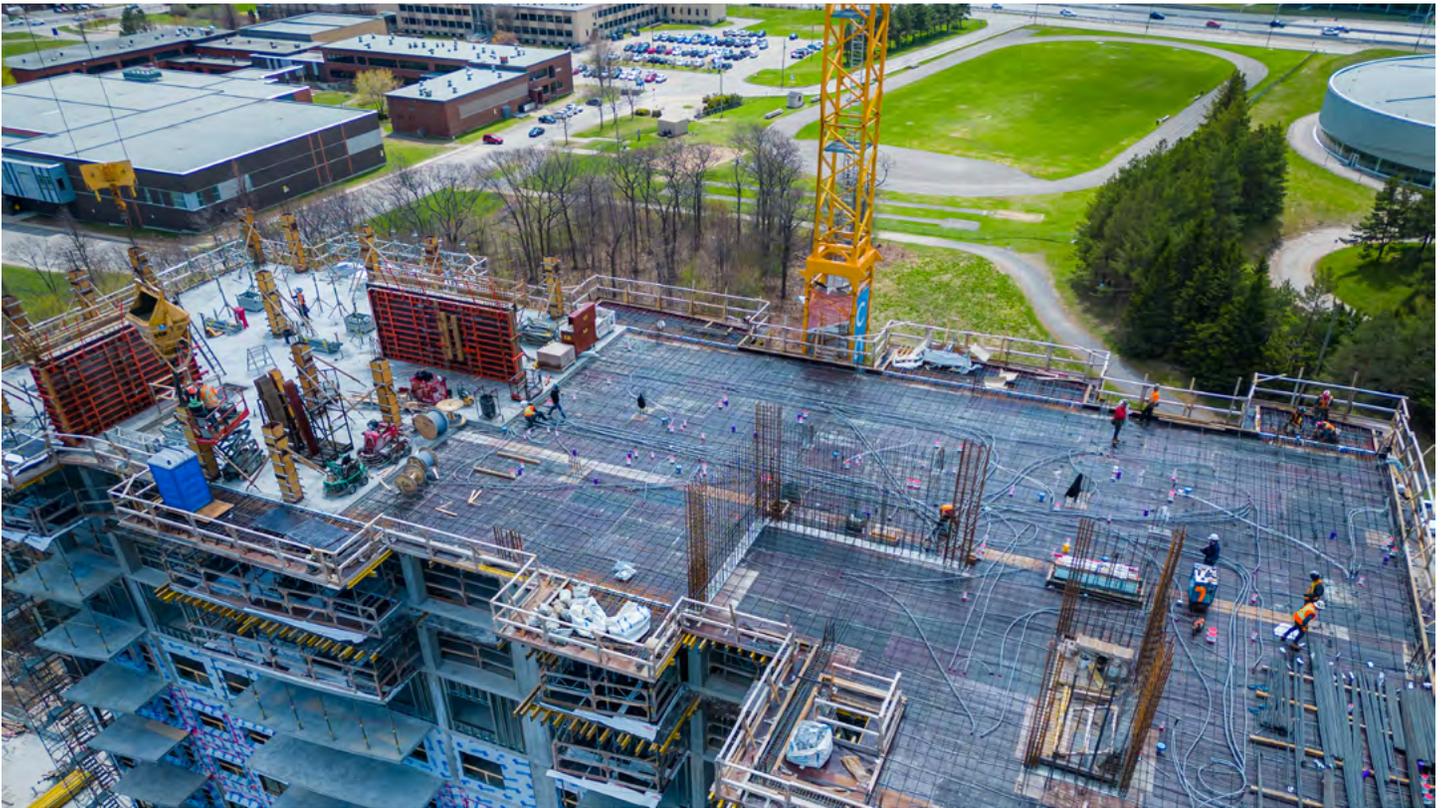
Concrete Design Strength: 20-40 MPa

Amount Used: 7,150 m³

ALBÉDO is a 128-unit, seniors' housing project developed under the AccèsLogis program of the Société d'habitation du Québec (SHQ), combined with a double facility of the 148-place La petite cour de Mistigri I and II daycare centre in Sainte-Foy.

This project provides an excellent example of the value of using performance-based specifications utilizing the Concrete Carbon Project Budget (CCPB) process. To open up the project to as many bidders as possible and to obtain the best results in performance and low carbon as possible, the concrete producer suggested that the designer opt for a performance-based specification.

When specifications specify greenhouse gas reduction requirements in performance-based rather than prescriptive form, ready-mixed concrete producers are able to optimize proven carbon-reducing levers while meeting the performance and durability requirements of a concrete-construction project and encouraging better free market competition and innovation.

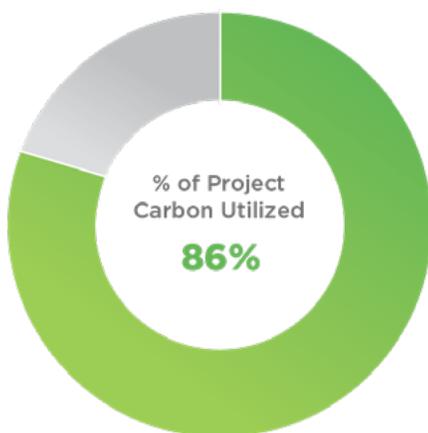


Photos: Christian Gingras

Other project details:

- By using mixes that refer to plant-specific EPDs, the reduction in greenhouse gases compared with the baseline mixes corresponds to 14%. If the project were hypothetically based on the generic EPDs, the associated reduction would have been 10.5%.
- The project required 7 main types of concrete, for uses ranging from the foundation walls to exterior sidewalks.

Concrete Carbon Project Summary



Summary

Total Concrete Carbon Project Budget	● 2,298.1 tonnes CO₂
Total Carbon Project Impact	● 1,975.3 tonnes CO₂
Total Carbon Savings	322.8 tonnes CO₂
% GHG Reduction	14.0% ↓

Source: [Concrete Carbon: A Guideline for Specifying Low Carbon Ready Mixed Concrete in Canada](#), p.78