

Early Design Strategies for Existing Buildings



Briefing Note 05

Prioritizing reuse early in a project can deliver significant climate, cost, and schedule benefits.

Assessing existing structures, materials, and systems identifies opportunities for repair and retention that preserve embodied carbon while reducing construction and maintenance costs. Combined with targeted upgrades and alternative compliance pathways, adaptive reuse can accelerate project delivery while meeting performance, safety, and conservation objectives.

Architects and designers play a critical leadership role in early-stage decisions by integrating whole-life carbon modelling and a climate lens into adaptive reuse feasibility and concept design.

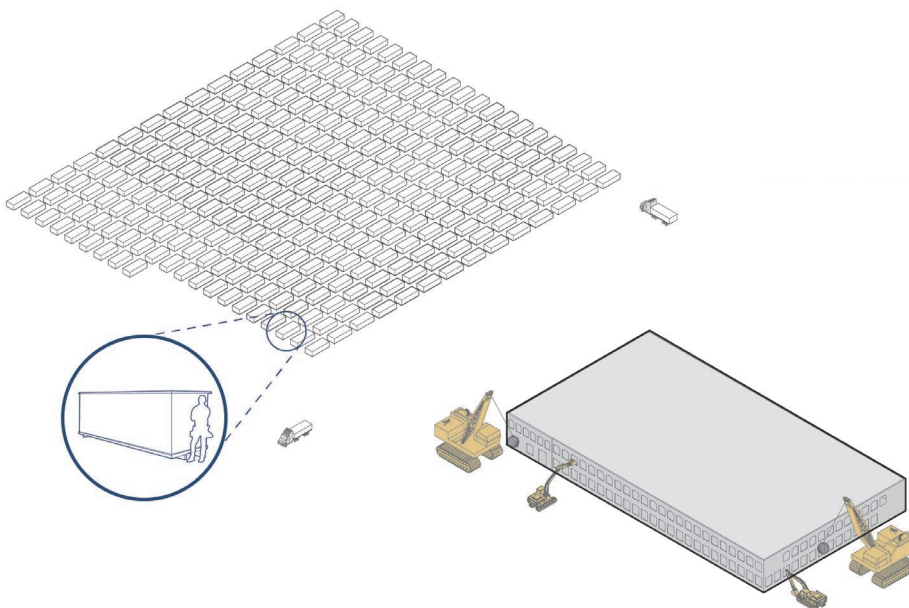
Potential waste created by demolition of a 1940s 8,800 m² two-storey brick textile factory:

5,860 m³

Approximate total material waste volume generated.

290 Dumpsters

(20 m³ each) required to transport demolition waste to landfill.



Excerpts from *Unlocking the Value of Existing Buildings*. This briefing note is part of a series summarizing key insights from *Unlocking the Value of Existing Buildings: a new approach to codes for carbon, culture and cost*. The full report is available here: cahp-acecp.ca/learning-resources/

Call to Action for Architects and Designers

Establish Reuse as the First Principle

- Evaluate reuse as the baseline option early in the project by assessing existing structures, materials, and systems to identify opportunities for retention.
- Reduce upfront construction costs and long-term maintenance costs by minimizing demolition, new material use, and major structural interventions.
- Accelerate project delivery by shortening design and construction timelines, reducing permitting complexity, and enabling earlier occupancy and reducing carrying costs.

Repair Rather Than Replace

- The reinforced concrete structural frame is the largest share of embodied carbon. Its retention avoids major reconstruction costs, while enabling functional upgrades.
- Retaining existing brick masonry walls can preserve significant embodied carbon and may not require additional exterior insulation to improve overall energy performance.
- Existing windows are a critical point of heat leakage and energy loss. Performance improvements through caulking, weather stripping and improved sealing repairs may be sufficient instead of replacement.

Leverage Performance Based Code Compliance

- Performance-based compliance pathways offer an opportunity to retain and reuse building elements while achieving thermal performance, life safety, and other code requirements. This improves the building's overall emissions in a whole life carbon framework.

Take Climate Action Through Conservation

- Use adaptive reuse strategies that extend the life of existing assets, delivering lower whole-life carbon impacts while supporting long-term stewardship of existing buildings.
- Coordinating heritage conservation with performance upgrades, such as targeted envelope improvements and electrification, can help maintain character while reducing operational carbon emissions.

