

# Arch Lofts

243-245 Perth Avenue, Toronto, Ontario

Arch Lofts combine the architectural heritage of an existing church building with the modern appeal of a newly-constructed vestry with 1, 2 and 3 bedroom lofts. The multi-unit residential building includes 39 units with an overall gross floor area of 41,000 ft<sup>2</sup>.



## Achievements & Accreditations

The Arch Lofts building achieved TGS Tier 2 and performs over 26% better than OBC.

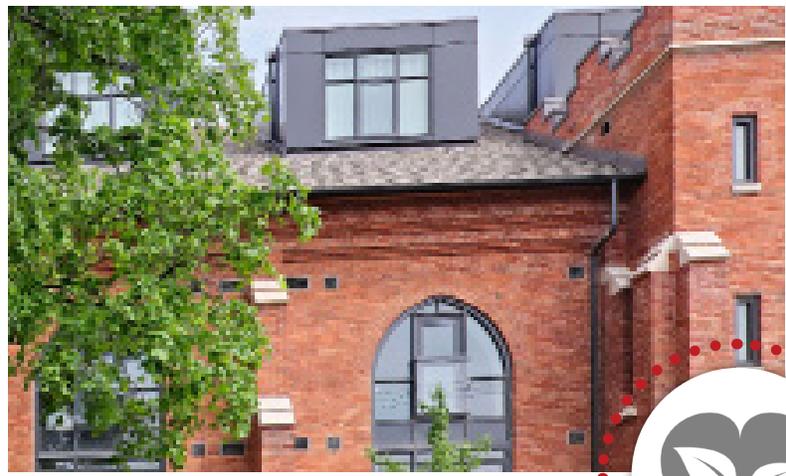


## Innovative Approaches

- ✓ Geothermal coupled with ground-source heat pumps
- ✓ Use of low-VOC materials and FSC engineered wood flooring
- ✓ Low-Impact Development achieves water balance

# Arch Lofts

243-245 Perth Avenue, Toronto  
 Windmill Developments  
 1306 Wellington Street West, Suite 201, Ottawa, ON



## Water Management



The project focused on **Low Impact Development** to achieve water balance, wherein the post-construction absorption rates and storm-water impact would not exceed the pre-existing conditions. In terms of occupant water consumption, with in-suite low flow fixtures, dual-flush toilets, and high efficiency appliances, the building is expected to **reduce demand by approximately 30%**.

## Landscaping & Sustainable Construction

This project transformed an existing historic church into a multi-residential building with a modern addition mirroring the approximate size of the original structure. Construction material selection prioritized **low VOC** and **recycled materials** where possible, and FSC certified wood. The landscaping plan includes **minimal-irrigation plants**, and trees have also been planted along the periphery of the property to support **storm water management**, provide some shade canopy, and contribute to the local environment.

## Envelope, Lighting, HVAC



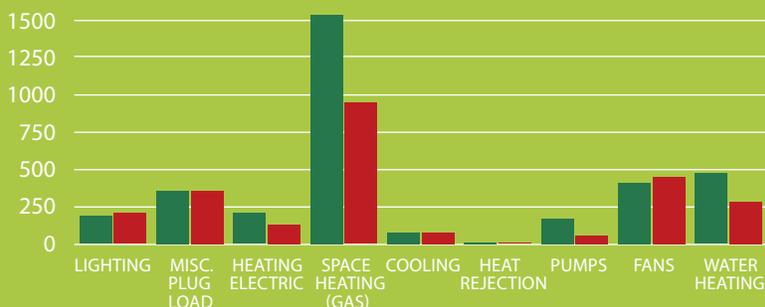
**ENVELOPE:** By harnessing daylighting through double glazed windows, enhancing envelope insulation and exterior panel system, and thermally insulating the roof, the overall building envelope enabled reduced air infiltration and HVAC energy loads.

**LIGHTING:** Ample daylighting supported a lower W/ft<sup>2</sup> for suites. Incorporating higher efficient LEDs throughout and dimmer controls in common spaces reduced the overall lighting load by approximately 13%.

**HVAC:** The system has ground-source heat pumps coupled to a geothermal loop with auxiliary boilers. Hybrid heat pumps are equipped with DX for cooling and HW heating coils connected to the interior water loop. These measures, in combination with in-suite ERVs, increasing the efficiency of the make-up air unit and the water heating plant, and including low-flow fixtures provided more than 26% energy savings above OBC requirements.

Reference  
 Arch Lofts

## Performance Data Energy Used By Component (GJ)



## Occupant Health & Engagement



Using window glazing to **reduce solar heat gain**, occupancy comfort is enhanced through visual access to daylighting and access to outdoor through terraces for most units. The building envelope air tightness and in-suite ERVs also **enhance thermal comfort** and **indoor air quality**. Construction materials focused on those with low VOCs which benefit indoor air quality. Bike-storage has also been provided for building occupants.