

32 Mill Street Net-Zero Energy Retrofit

Warrior Home
Solar Decathlon Team

University of Waterloo
Waterloo, ON, Canada
info@warriorhome.ca



Architecture Narrative

U.S. Department of Energy
Solar Decathlon 2023 Build Competition

32 Mill Street

Architecture Narrative

23BC_WH_D8_JURYARCH_2023-03-28

Table of Contents

Architectural Intent	1
Target Tenants & Design	1
Interior Renders	2



In partnership with the
**KW Urban Native
Wigwam Project**

Architecture Jury

Architectural Intent

The primary architectural intent of the design is to preserve the era of the century old home on the exterior, while improving the versatility and occupant comfort of the interior layout. The main implication of this design intent was to maintain the existing 120 year old double-wythe structural brick. Other design implications consist of maintaining the overall aesthetic and geometry of the arched picture window facing the street and retaining the covered porch area. The window sizes and porch being preserved prevents material waste and production.

Target Tenants & Design Decisions

The other main concept that dictated the architectural design was the tenants who have and will live in this home. The architecture team had many conversations with the tenants and housing organisation of the building in order to cater to their needs. This also led to the decision to maintain the front porch, as it is a well-used feature, according to the tenants. Since Warrior Home builds homes for people in mind, this was a really important part of the overall design process.

The target tenant of the house is a couple with 3 children, one who is away from home completing post-secondary education. This strongly impacted the design of the interior layout. The main floor is open concept, which allows ample natural light into the space. The galley-kitchen is an efficient use of space given the limited square footage and ensures that all key fixtures and appliances are in close proximity to one another.

On the upper floor, the bedroom sizes are equally distributed for better space allocation and to ensure window access for each room. The new layout decreased dead hallway space, which allows for a larger centralised washroom that is easily accessible by all occupants.

The basement was designed as a multi-purpose space, which can be used on an as needed by the tenants. The decision to make the basement a usable space required cost-benefit analysis since it required making major structural upgrades to the basement in order to increase the ceiling height in the basement. The team determined that it would be a good decision to move forward with this because it added much-needed space to the small home.

Architecture Jury

Renders



Exterior



Kitchen



Master Bedroom



Bedroom



**U.S. Department Of Energy
Solar Decathlon
2023 Build Competition**

32 Mill Street
Architecture Narrative
23BC_WH_D8_JURYARCH_2023-03-28

**Warrior Home
Solar Decathlon Team**
University of Waterloo
Waterloo, ON, Canada
info@warriorhome.ca

