



TOWARDS NET ZERO RENOS



CASE STUDY



The Sucrierie Retrofit transformed a former barn, converted into a home in 1965, into a sustainable, Net Zero energy residence. Designed with the owners' retirement in mind, this project brought to life their vision of an environmentally conscious and comfortable living space.

PROJECT PRIORITIES

- Reduce Energy Consumption
- Reduce Carbon emissions from inputs, Sequester as much carbon as possible
- Achieve Net Zero or Net Zero Ready
- Increase Thermal Comfort
- Improve Indoor Air Quality

RENOVATOR: Retrofit Canada

ENERGY ADVISOR/SERVICE ORGANIZATION:
Homesol Building Solutions

TARGET: Net Zero Ready Home Renovation

ENERGY REDUCTION: 74.7%

YEAR BUILT: 1965

YEAR RETROFIT COMPLETED: 2024

LOCATION: Saint-Agathe-des-Monts, QC

HOUSE TYPE: Single Detached

SIZE: 1,550 sq. ft.

CLIMATE: Zone 6, 4354 HDD

UPGRADES INCLUDE

Above Grade Walls

Cooling & Heat Pumps

Foundation Wall

On-site Generation

Principle Ventilation

Windows & Glass Doors

Airtightness

Replace Roof

Main Floor Accessibility for Wheelchairs

Replace and Increase Insulation on all Levels



TOWARDS NET ZERO RENOS



NET ZERO PLAN

BEFORE

ENERGY CONSUMPTION

179 GJ/year

COMFORT

Concerns about air quality, hot temperatures, cool in winter months.

BUILDING CONDITION

No cooling system, concerned with musty basement and rodents in ceiling. Poor insulation. Roof leak. 9 ACH.

RENEWABLES

None

WALL INSULATION

R12

CEILING INSULATION

R16.7

FOUNDATION INSULATION

R19 (80%), R0 (20%)

WINDOWS

Sliding double-pane windows; unknown U-value

VENTILATION

None

HEATING

Electric baseboards

COOLING

None

HEAT LOSS & GAIN

HL: 71925 Btu/h, HG: 20201 Btu/h

HOT WATER

Electric Hot Water Heater

AFTER

45 GJ/year

Clean air, comfortable and healthy environment, provided accessibility for aging in place

Improved insulation, upgraded windows and doors, added ERV/HRV. Installed electric car charger. 0.74 ACH.

Solar ready

R48

R60

R22 batt + R-6ci

U-0.90 0.35

75.0% SRE HRV

Electric GE Cold Climate Heat Pump (model UUY24ZGDAB)

Electric GE Central Split Heat Pump (model UUY24ZGDAB)

HL: 14316 Btu/h, HG: 14333 Btu/h

Electric Split Heat Pump SanCO2 (model GS3-45HPA-US, SAN-83SSAQA)



TOWARDS NET ZERO RENOS

ANNUAL ENERGY USE

Before Retrofit
179 GJ/
year

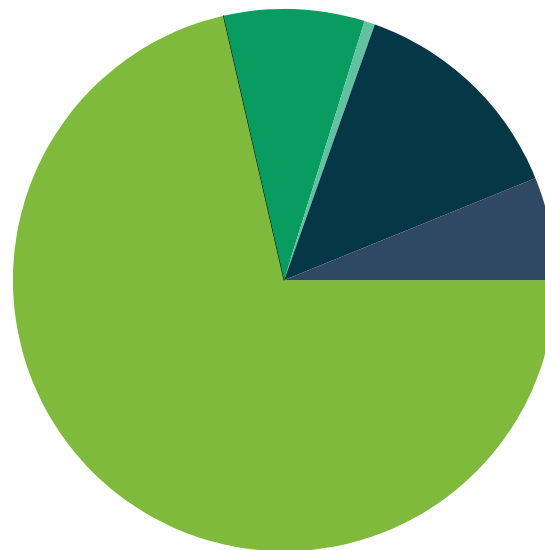
Typical New Home
98 GJ/
year

After Retrofit
45 GJ/
year



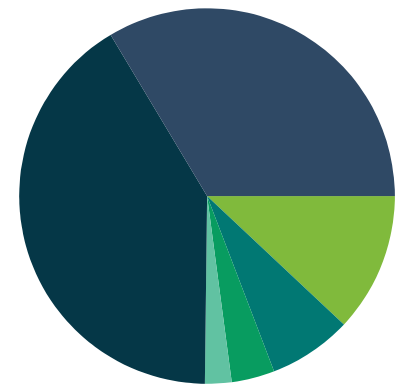
ENERGY CONSUMPTION BREAKDOWN

BEFORE RENOVATION



Space Heating
Other Electrical
Water Heating

AFTER RENOVATION



Light and appliances
Ventilation
Space Cooling

AS BUILT ENERGY PERFORMANCE

ANNUAL ENERGY SAVINGS	74.7%
GREENHOUSE GAS SAVINGS	0.10 Tonnes



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WHY ARE WE RETROFITTING OUR HOME?

The home came to us with potential to fulfill our dream of retrofitting in a desirable location. With hopes of becoming Net Zero and fully solar powered, we wanted to give this home a renewed sense of purpose.

WHAT LESSONS DID WE LEARN?

Although our initial plan focused on the exterior, hidden issues forced us to open the interior walls, leading to three air-barrier layers. While it may have been more efficient to stick with two, these layers did yield an impressively level of airtightness. Restructuring the crooked roof was another time-consuming obstacle. In hindsight, an over-truss approach might have been simpler.

WHAT ELSE NEEDS TO BE DONE TO GET TO NET ZERO?

The solar system is going in early in September, 2026, thanks to a significant grant from Hydro-Québec.



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PHOTO GALLERY - BEFORE



Front of home. Pre-renovation



interior rubble foundation wall



Small 1965 cottage home, pre-renovation



TOWARDS NET ZERO RENOS



PHOTO GALLERY - DURING



Homeowner with Homesol and Renovator team



New envelope and roof



Larson Truss Method, filled with cellulose and prepared for the addition of cedar siding



West elevation demolition



TOWARDS NET ZERO RENOS



PHOTO GALLERY - AFTER



Attic insulation



Cedar shingles giving a beautiful finish



Completely new exterior with curb appeal



Finished Home during winter.