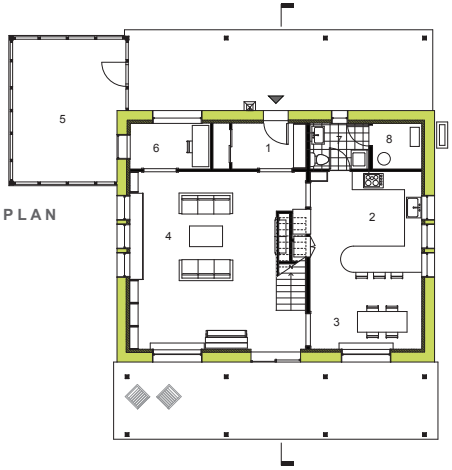
Scranton Passive House Exterior Rendering

The **Scranton Passive House** is Northeastern Pennsylvania's first residence designed and constructed to meet the rigorous Passive House standard. The residence is home for two University of Scranton professors and their teenage children. Located on a gently sloping city lot in the hill section of Scranton with east and south views, the site has excellent access to free energy from the sun.

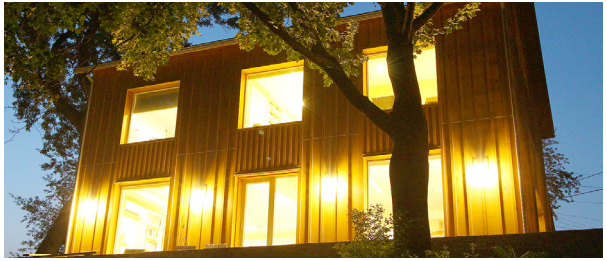
"Once we decided to build a house, the only sensible thing to do in the 21st century is to build a house that uses the least energy possible."

Declan Mulhall, owner of Scranton Passive House



FIRST FLOOR PLAN

1 ENTRY
2 KITCHEN
3 DINING ROOM
4 LIVING ROOM
5 SCREEN PORCH
6 OFFICE
7 POWDER ROOM
8 MECHANICAL



South View of the Scranton Passive House

Richard Pedranti Architect (RPA) is a full service architecture firm serving the Upper Delaware River Region as well as Philadelphia and New York. Since 1998, we have been creating environments that combine our clients' unique values with extraordinary natural landscapes.

Located in the historic village of Milford, Pennsylvania, RPA specializes in Passive House and high performance design putting modern building science to work. Passive House offers today's most advanced technological approach to creating responsible, comfortable, and healthy buildings.

RPA is committed to being at the forefront of sustainable building practices. By incorporating building energy performance standards, we develop timeless architecture that offers unparalleled comfort, while being cost effective, light on resource consumption, and beneficial to the environment.

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Engineered for *Comfort*

ENERGY EFFICIENT

PASSIVE HOUSE

OSB Sheathing

TJI Insulation Cavity

Fiberboard Sheathing

Water Resistive Barrier

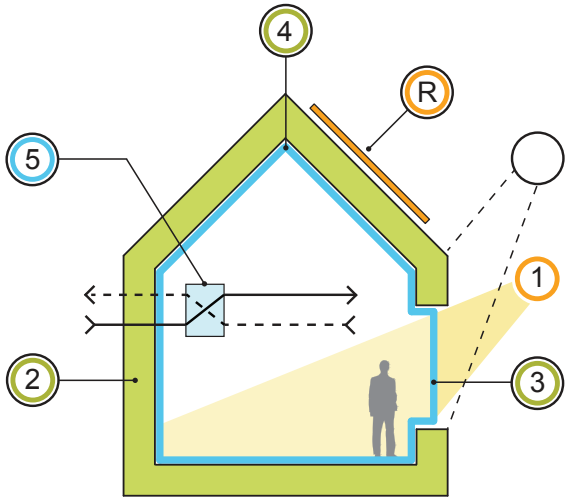
Furring and Vent Space

Pine Siding

Passive house is today's most energy efficient building standard. Buildings that meet the Passive House standard use 80% less energy for heating and cooling than conventional buildings yet are markedly more comfortable and healthy than traditional buildings. Passive House offers a triple bottom line: (1) personal health and comfort, (2) energy efficiency, and (3) affordability.

A Passive House conserves energy by creating a virtually air-tight, super insulated, compact building enclosure that uses the sun and the heat emanating from the people and equipment in the house to achieve a comfortable indoor environment. A ventilation system including what is called a heat recovery ventilator or HRV is used to provide a continuous supply of filtered fresh air.

RPA's 5 PASSIVE HOUSE PRINCIPLES



1 SOLAR ORIENTATION

The windows sizes and orientation are optimized for energy balance throughout the entire year. The well balanced passive solar design also adds excellent daylighting throughout the interior.

2 HIGH INSULATION

With insulated walls two to three times thicker than today's standard construction, the inside temperature is stable and predictable without the need for heating or cooling adjustments. Wall assemblies are analyzed and detailed to allow for proper moisture management that results in a long lasting and exceptionally healthy building.

3 HIGH PERFORMANCE WINDOWS/DOORS

To meet the high performance needs of various climate zones, windows must meet strict standards regarding: insulation, air tightness, and solar heat gain values.

4 AIR TIGHT ENCLOSURE

Walls are carefully designed to be virtually air tight, while allowing water vapor to escape maintaining a comfortable and healthy environment.

5 BALANCED VENTILATION W/ HEAT RECOVERY

An HRV provides a Passive Houses with continuous comfort and a huge upgrade in indoor air quality that is particularly important for people sensitive to material off-gassing, allergies and other air-borne irritants.

R RENEWABLES

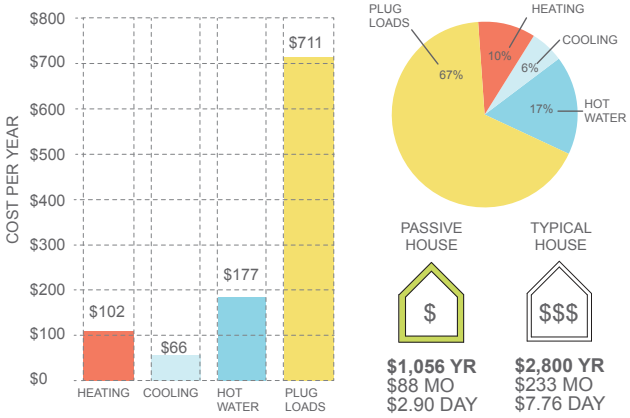
A Passive House achieves net zero energy with the addition of a small and affordable renewable energy system.

"Maximize your gains, minimize your losses"

A Passive House project maximizes the energy efficiency of a buildings basic building components: the roof, walls, windows, floors and utility systems. By minimizing a building's energy losses with smart insulation, the heating and cooling system is not called on nearly as frequently, saving resources and operating costs, while reducing the home's impact on the environment. Unlike other structures, Passive House buildings maintain occupant comfort for more hours of the year without relying on active heating and air-conditioning equipment.

Today's enlightened homeowner is seeking a new approach for better living.

OPERATING COST FOR SCRANTON PASSIVE HOUSE



Source: Remrate Energy Model of Scranton Passive House

COMFORTABLE **HEALTHY** **AFFORDABLE**