

PASSIVE HOUSE BUILDINGS

Costs and Benefits Factsheet

Passive House is a set of performance-based building certification standards that focus on the significant reduction of energy demand while ensuring a healthy and comfortable building. A Passive House can be any building and any size – a home, office, or school, a large multifamily building or mixed-use commercial development. With the right approach and collaborative team, Passive House can be done anywhere.

Benefits of Passive House

Financial Benefits

- Reduced energy demand
- Reduced maintenance costs
- Climate resilient construction

Health & Comfort Benefits

- Improved indoor air quality
- Consistent temperature
- Quieter acoustics

Environmental Benefits

- Reduced carbon emissions
- Climate resilient building
- Focus on embodied carbon reduction



Figure 1: Finch Cambridge, ICON Architecture

Features of Passive House

Building Envelope:

- Exterior Thermal Insulation
- Continuous Air-Barrier
- Thermal Bridge Mitigation
- High-Performance Windows & Doors
- Optimized Solar Heat Gain

Mechanical Systems:

- Balanced Ventilation with Heat Recovery
- Efficient and Minimized Heating/Cooling
- High-Efficiency Water Heaters

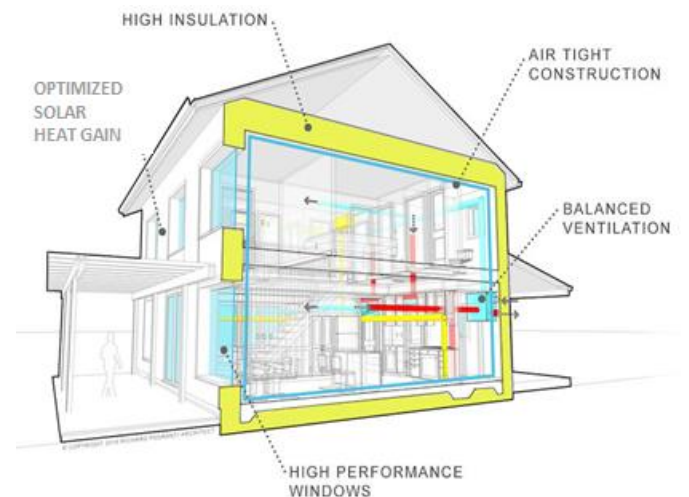
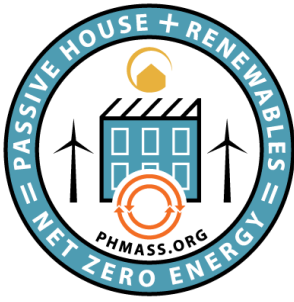


Figure 2: Passive House, Richard Pedranti Architect



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Figure 3: MassCEC Passive House Design Challenge Projects

Incremental Costs are Low for Multifamily Projects

The cost to build to the Passive House standard compared to typical construction is 1-4% for actual multifamily projects in Massachusetts.

The projects to the left were part of the MassCEC's Passive House Design Challenge issued in 2018, and more recent projects are expected to have an even lower cost premium.

Incentives Are Available

The Mass Save Passive House Incentive Program offers up to \$3,000 *per unit* for certified multifamily projects and funding for feasibility studies and energy modeling services.

There are already over 70 projects enrolled in this program representing over 10,000 total units of multifamily housing, with 40% of these projects documented as Low-Income Affordable Housing.

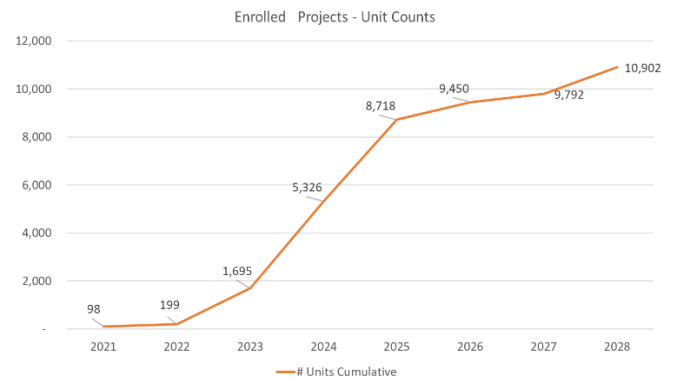


Figure 4: Mass Save Passive House Incentive Program

Costs Only Get Lower Over Time

Incremental costs will only get lower with experience and market growth as designers, contractors, and trades become more familiar with the process. Additionally, there is a growing availability of local products ranging from high-performance windows to rigid insulation.

Rebates and incentives are expected to continue, with Mass Save incentives guaranteed until the end of 2024, and likely beyond that, and new Federal Inflation Reduction Act (IRA) programs starting this year

Even last year, before new codes were in effect, nearly 1/3 of all of Massachusetts Low-Income Housing Tax Credit funded projects were planned to achieve the Passive House standard.