

Energy Standards Comparison Study: Key Findings

Comparing Passive House standards to baseline code

A Passive House Network Report

Energy Standards Comparison Study:

Comparing Passive House standards to baseline codes

TASK 2: Multifamily Residential Buildings (except California)

September 2026

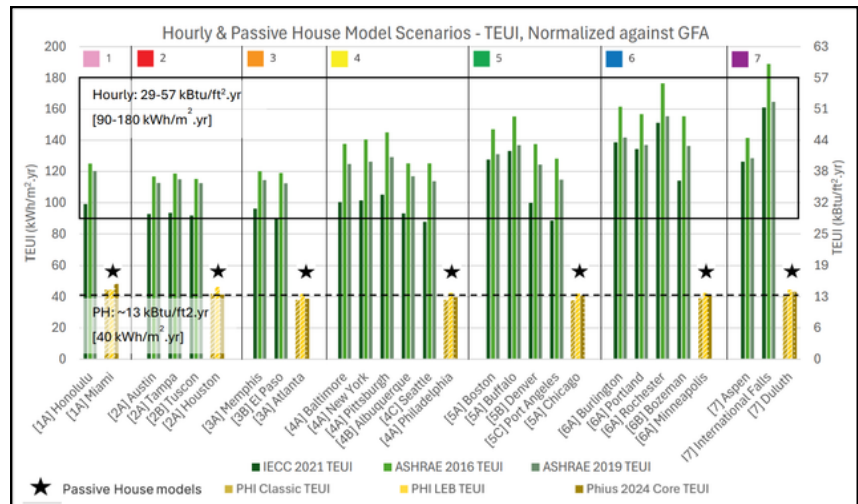
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The Passive House Network

Passive House is increasingly referenced as a pathway to low-energy and low-carbon buildings, but direct comparison with commonly used code and program baselines is challenging because Passive House, IECC, and ASHRAE 90.1 rely on different modeling tools, assumptions, normalization areas, compliance metrics, and treatment of energy losses. This study addresses that gap.

Passive House scenarios produced materially lower energy use. When tested against the 2021 IECC and ASHRAE 90.1 2016 and 2019 baseline scenarios for the multifamily archetype reviewed, Passive House showed an approximate 2x to 4.5x improvement in total energy use, depending on climate zone and baseline scenario.

Passive House should be recognized as a robust alternative compliance pathway. Passive House is ideal for policies, incentive programs, and performance-based building requirements where the objective is to achieve predictable, high-performance energy outcomes.



Modeled results should be understood in a “tool + modeling protocol” context. Different models place different emphasis on airtightness verification, shading, HVAC part-load performance, and other measurements, making it difficult to compare standards without normalization.

The Passive House-to-hourly translation workflow produced comparable whole-building TEUI results, with notably, software-specific differences at the TEDI, CEDI, and end-use level. The outcome supports the use of the translation workflow as a reasonable method for comparing whole-building energy outcomes across tools, within the limitations of each modeling platform.

Passive House certification includes an important quality-assurance dimension that is not fully captured by desk-based modeling comparisons. This differentiates Passive House from non-Passive House pathways where modeled performance is not supported by the same level of field verification or certification review.

Based on the magnitude and consistency of the modeled performance gap observed across climate zones, Passive House should be recognized as a robust alternative compliance pathway for policies, incentive programs, and performance-based building requirements where the objective is to achieve predictable, high-performance energy outcomes. Download the full report by scanning the QR code.



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