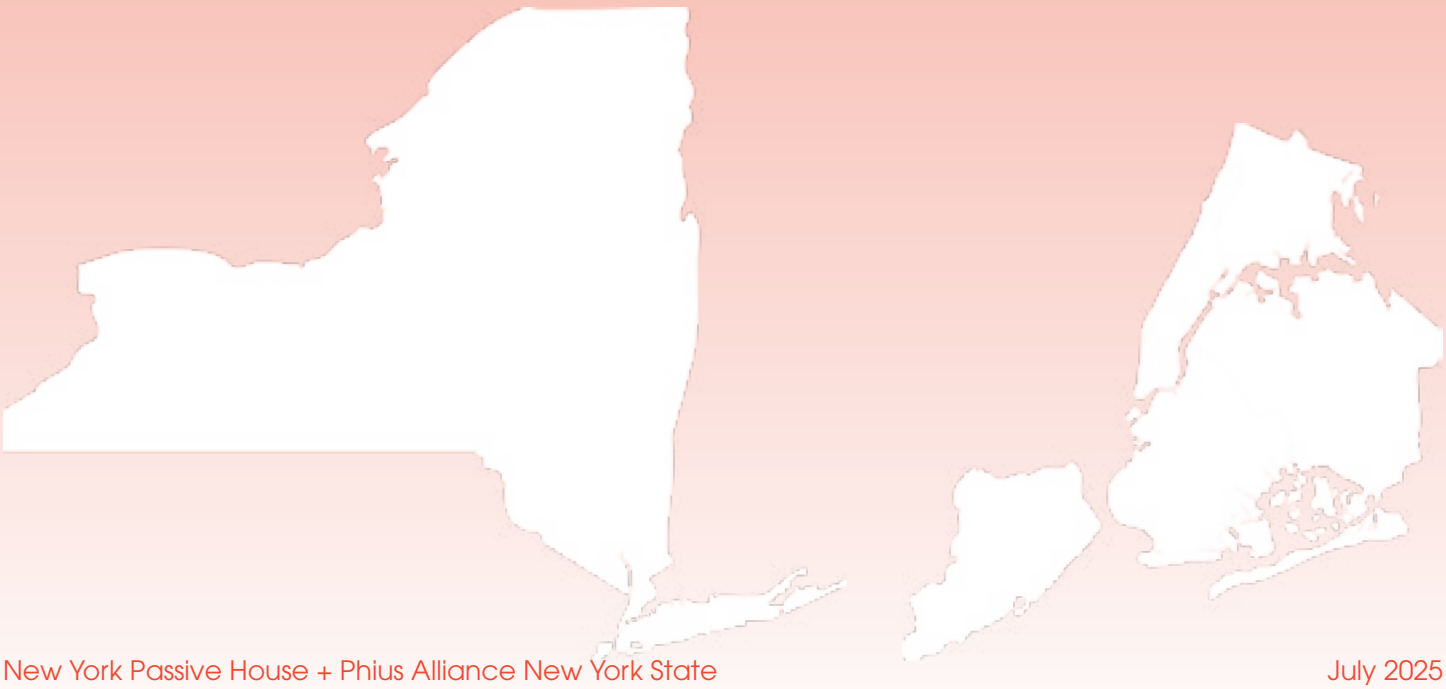
New York Passive House
Policy Advocacy Brief

A pathway to expand Passive House adoption across New York City & State



New York Passive House + Phius Alliance New York State

July 2025

Introduction

We are the Passive House Practitioners of New York State. We are architects, engineers, contractors, consultants, manufacturers, and policy advocates. Through our various practices, we've demonstrated that designing to the Passive House standard is financially and technically feasible, and provides tangible benefits that directly support New York's goals to improve community health and resiliency, electrify buildings and infrastructure, and dramatically reduce the utility costs and carbon emissions associated with building operations.

Background

The NYS Climate Leadership & Protection Act (CLCPA) of 2019 requires New York to achieve net zero emissions statewide by 2050. The Climate Action Council's 2022 Scoping Plan "...recommends adopting zero-emission State codes as an important policy lever that can contribute to… rapid transformation" (Section 12.2.B1). The Scoping Plan details the benefits of advanced building codes including improved efficiency, resiliency, and advancing equitable outcomes and electrification.

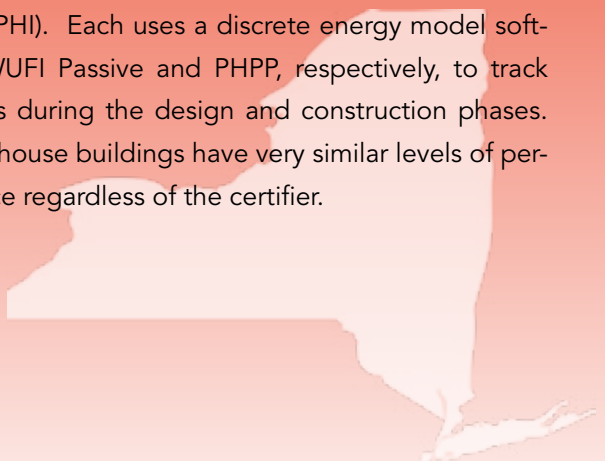
The CLCPA's building sector strategies are aligned with other jurisdictions, agencies, and organizations; many of which have incorporated Passive House into codes, incentives, and certification pathways. Examples include Massachusetts, Washington State, City of Denver, Canadian provinces including British Columbia & Ontario, NYC Dept. of Housing, Preservation, & Development (HPD), the USGBC, and several state housing finance agencies including Illinois and Pennsylvania.

What is Passive House?

Passive House is a building certification that uses established building science principles to set limits for building energy demand and peak heating/cooling loads, while improving occupant comfort. The standard is designed to support innovation while remaining applicable to any building typology. It does not require proprietary technology or unconventional techniques, instead focusing on optimization of existing construction practices with thorough detailing and systematic quality control protocols focused on the following strategies.

Who Certifies Passive House?

There are two independent organizations that certify Passive House buildings; Phius and Passive House Institute (PHI). Each uses a discrete energy model software, WUFI Passive and PHPP, respectively, to track progress during the design and construction phases. Passive house buildings have very similar levels of performance regardless of the certifier.



Policy Objectives

Integrating Passive House standard into future versions of the Energy Conservation Construction Code of New York State (ECCC NYS), the Energy Conservation Code of New York City (NYC ECC) and the New York Stretch Energy Code (NY Stretch) is a proven-effective method for accelerating industry transformation toward a zero-emission building sector as mandated by the CLCPA. To that end, we advocate for the following:

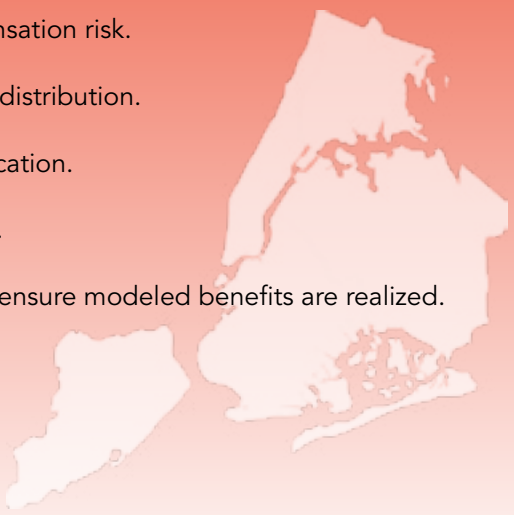
1. **Align provisions of ECCC NYS, NY Stretch, and NYC ECC with the Passive House standards.**

2. **Add Passive House certification as an alternative compliance pathway in NY Stretch & NYC ECC.**

3. **Increasing incentives to broaden Passive House adoption across multiple sectors.**

How to Achieve Passive House?

1. Continuously insulated enclosures with high-performance glazing and minimal thermal bridges.
2. Comprehensive air-sealing strategy to minimize thermal loss and condensation risk.
3. High-efficiency heating, cooling, and hot water production systems and distribution.
4. Continuous mechanical ventilation with energy recovery and dehumidification.
5. Incorporation of renewable and energy recovery systems where feasible.
6. A comprehensive testing and inspection process during construction to ensure modeled benefits are realized.



The Case for PH in Codes

To mitigate the worst effects of climate change, we must accelerate our transition to zero-emissions energy codes. Passive House buildings offer a practical, achievable pathway for meaningful reductions in operational energy and broader adoption will accelerate decarbonization without being cost-prohibitive. Benefits for building owners, occupants, and public utilities are directly aligned with the priorities of the CLCPA and ECCC NYS including:

Energy Efficiency & Cost Savings

Thermal energy demand is reduced by 50% or greater[1] supporting the outcomes targeted by the CLCPA and New York City's Local Law 97 (LL97).

Reduced cost of electrification

- Less energy for heating and cooling in peak seasons reduces electricity demand and the scale of grid infrastructure upgrades[1] while ensuring building's do not exceed LL97 emissions thresholds.
- Passive House thermal energy reduction combined with cold-weather heat pumps allow heating and cooling from a single system, eliminating the cost and coordination of a separate heating system.

Resiliency & Health

- Filtered ventilation, in addition to operable windows, provides healthy indoor air at all times, regardless of outdoor air quality conditions.
- Studies have shown "survivable" indoor temperatures during blackout lasting days in a Passive House instead of hours.[2]

Equitable Outcomes

Making healthy, comfortable spaces the baseline instead of a premium for all building occupants.

- Insulated, airtight facades improve comfort without cranking up the thermostat and the utility bills.
- Enhanced indoor air quality provides filtered fresh air to all habitable rooms.
- Compartmentalization between residential units reduces odor migration.
- High-performance windows and highly insulated walls improve interior acoustics.

Durability

- An airtight facade reduces the risk of condensation within a building envelope when detailed and installed properly.
- Balanced ventilation and compartmentalization reduces pressure on the building air barrier.

[1] Commonwealth of Massachusetts, Building Energy Study to Inform the Development of 2023 Commercial Energy Stretch Code, 2022
[2] Rocky Mountain Institute, Hours of Safety in Cold Weather: A Framework for Considering Resilience in Building Envelope Design & Construction, February 2020

Objections We Hear

Passive House is too expensive...

Information collected from dozens of Passive House buildings at various scales has shown a marginal increase in first cost, most recent analysis has shown 2% or lower[1]. That premium continues to reduce with market exposure[2]. In smaller buildings, the first cost increase is near zero, with increased envelope costs offset by smaller HVAC systems, and the utility savings are immediate resulting in a rapid ROI. Most importantly, the cost of specific measures to create passive buildings are minor compared to their impact. Evidence that is both anecdotal and analytical has shown passive house buildings are cheaper to operate[3], more resilient, and result in greater occupant comfort.

Passive House requires a third party to certify....

The most important takeaway here - the goal is not that every project is required to certify Passive House. This effort is focused on getting the building science that lies at the foundation of Passive House represented in the code. Critical to that effort is to continue to drive the industry forward by promoting certification through an alternative compliance pathway and incentives for buildings that do certify. We understand that the certification process adds complexity and soft costs to a Project, but it is also the best tool currently available for ensuring a building performs as designed. Promoting certification, by proxy, promotes the key verification and testing protocols that are included within the certification process and supports industry transition toward a day when those protocols are included in the code.

Passive House requires an unrealistic level of performance....

Our group has been directly involved in the design and construction of thousands of passive house certified housing units, from single-family homes to hundreds of affordable apartments in a 35-story high-rise. Passive House has been incorporated into energy codes in the Massachusetts, the City of Vancouver, and several European jurisdictions. All the components required to construct a passive house are readily available and thousands of certified passive house dwelling units can be found across the State.

[1] Elnecave, Isaac, Phius Memo: "Summary of Cost Data Research on Multi-Family buildings built to the Phius Standard", September 1, 2022
[2] Barry, Bronwyn, "Is Cost the Barrier to Passive House Performance?", May 2021
[3] Building Energy Exchange, "Multifamily Passive House: Connecting Performance to Financing", March 2021February 2020

Detailed Policy Objectives

1 Align provisions of ECCC NYS and NYC ECC with the Passive House standards.

Closing the Gap

Passive House certification has clear holistic benefits for buildings that certify through one of the certification bodies. However, certification includes the added cost and uncertainty of introducing a third-party certifier into the design and construction process. Therefore, we believe the most effective pathway for elevating the performance of all new construction in New York is not to require Passive House certification, but to embed the standard into the Energy Conservation Construction Code (ECCC) of NYS. The following are high impact measures that if adopted will close the gap between Passive House and code compliance.

Continuous Insulation Prescriptive Thermal Requirements

Continuous exterior insulation improves opaque wall thermal performance and reduces condensation risk. It also helps mitigate the impact of thermal bridges in building envelopes.

Recommendation:
Prescriptive insulation R-values should be increased to the ASHRAE 90.1-2022 standard + approximately 25% in all continuous insulation (ci) values.

Mitigate Thermal Bridging

Current versions of New York State and City codes set minimum performance requirements for thermally-broken connections at parapets and balconies. Calculations are required for masonry shelf angles, fenestration perimeters, balconies, parapets, and floor slabs, and must be incorporated into energy models. While this is a good first step, it leaves several unmitigated thermal bridges in a typical building. This source of significant energy loss increases operational emissions and condensation potential.

Recommendation:
Expand requirement to provide calculations for all thermal bridges that are greater than 12 in^2 in area or greater than 6" in length, including transitions at openings like windows and doors. Calculations should be provided that demonstrate thermal performance that exceeds established prescriptive limits. Prescriptive limits should be determined by a technical advisory group and included in the energy code.

Air Leakage Compliance

Leaky building envelopes are a significant source of energy loss, pest and allergen infiltration, and moisture migration resulting in increased incidences of interstitial condensation, corrosion, mold growth, and air contamination. Completed large-scale PH buildings have demonstrated that airtightness values 80% tighter than code minimums are attainable without a cost premium.

Recommendation:
The measured air leakage of the building thermal envelope to be limited to 0.10 cfm/sf at 50Pa.

Whole Building Air Leakage Testing

Commonly referred to as "blower-door testing", air leakage tests are increasingly common and a critical tool for verifying performance and creating accountability. The reliability of which supports more accurate and potentially smaller mechanical system sizes. This has been standard practice in Washington State and other jurisdictions for years.

Recommendation:
For all buildings, the thermal envelope shall be tested by an approved third party in accordance with ASTM E3158 or an equivalent approved method. A phased of partial testing approach can be determined for buildings larger than 100,000 gsf.

Balanced Ventilation with Energy Recovery in buildings >10,000sf

Mechanical supply/makeup ventilation is already required in several high-density building occupancies, but there is an exception for R-2 multi-family residential buildings that allows the use of operable windows as the source of ventilation when apartment exhaust is below 75 cfm. Operable windows are a necessity for resident's well-being and quality of life, however, they are not a reliable source of ventilation (nor are trickle vents). Occupants close windows for thermal comfort, acoustics or other reasons leaving apartments with no outdoor air except from uncontrolled and unfiltered air leaks. Mechanical ventilation also allows for filtration providing significant health and resiliency benefits.

Recommendations:
+ All buildings greater than 10,000 gsf should have mechanical ventilation that is balanced (supply & exhaust flows within 10% of each other) and includes heat recovery and MERV 13 filtration.

+ Enhanced duct sealing, prescriptive threshold to be determined by technical advisory group, required for all ductwork providing ventilation air. This reduces losses through leaks and seams and prevents smells, allergens, and pests from communicating between spaces.

Detailed Policy Objectives

2 Add Passive House certification as an alternative compliance pathway in NY

The Path to Passive House Codes in New York City

New York City adopts an amended version of the NY Stretch Code developed by the New York State Energy Research and Development Authority (NYSERDA). In order to get an alternative compliance pathway codified for New York City buildings, our advocacy efforts will focus on adoption of the alternative compliance pathway in the next edition of the NY Stretch code, both residential and commercial. From there we will work on advocating for it to remain in the version of Stretch that is adopted as the NYC Energy Conservation Code (NYC ECC).

An Alternative Compliance path will benefit all New Yorkers

1. Expand adoption of passive house and education around its benefits by providing a process-based incentive for pursuing the standard (certification = code compliance).
2. Reduce cost and complexity for design teams that want to pursue passive house by no longer requiring management of two discrete energy models.
3. Allow individual jurisdictions that adopt NY Stretch to incorporate alternative compliance pathways in their codes, most notably New York City.
4. Establish a foundation for expanded incentive programs and funding for training building officials, contractors, and design practitioners.
5. Streamline commissioning and inspections during construction.

There are two key issues to navigate in our advocacy...

1. The Department of State does not currently recognize PH energy models (PHPP and Wufi Passive) as approved methods for demonstrating code compliance.

   Our Approach:
   Assessing and addressing regulators concerns should be the focal point of early-stage policy advocacy efforts. Including promoting research that has validated WUFI Passive as producing results that fall within the acceptable range of DOE 2.1E models per ASHRAE 140[1].

2. It is understood that NYC energy code stakeholders have expressed concern regarding the involvement of a third-party, proprietary certification protocol in the energy code review process. For this, Massachusetts' Passive House alternative compliance pathway in the MA Stretch Code will be a valuable precedent. Strategies include:

   Our Approach:
   + Propose a Designer of Record certify that the design meets PH criteria in order to get permit reducing the burden on AHJs.

   + Study the feasibility of developing a standardized reporting form (like the excel EN1 sheet that NYC has developed) for WUFI Passive and PHPP.

   + Address concerns of regulators regarding training for building officials by studying what has been done in other jurisdictions and exploring programs and partnerships that support and fund expanded training.

   + Setting expectations with Passive House certifiers regarding processing timeline and alignment with AHJ permit approval and TCO process.

[1] Garland, Jasmine, et al, "WUFI Passive V.3.2.0.1 validation using ANSI/ASHRAE Standard 140-2017", October 29, 2019

Detailed Policy Objectives

3 Support incentives to expand Passive House certification across multiple sec-

Expanding Adoption

Incentives are a direct way to overcome market inertia. They build industry capacity, expand product supply chains, and strengthen market confidence in delivering Passive House projects within NYS. There are examples of past and present incentives for Passive House in NYC, but there is much room to grow or replicate these programs in other regions of the State and apply them to more market sectors.

Direct Project Incentives for Training and Gap Funding

Grants or other forms of direct financial support can be provided for adoption of Passive House certification by utility providers or State or local government. Grants should be designed for tradespeople and building departments, as well as design and construction professionals.

+ MassSave, a collaborative of Massachusetts utility and electric service providers has a Passive House specific program offering significant financial support for professional training, preliminary modeling and feasibility, and first cost construction subsidies.

+ Future Housing Initiative in NYC was a joint HPD and NYSERDA program providing gap funding to cover the premium for HPD projects to pursue Passive House certification.

Our Approach:
Advocate that NYS utilities use MassSave's programs as a model for implementation across NYS.

Municipality-specific & Zoning Incentives

Several jurisdictions have promoted high performance building development by offering floor area bonuses in Zoning texts.

+ The Ultra-Low Energy Building (new construction) and Electrified Building (retrofit) floor area deductions were added to the NYC Zoning text as part of the City of Yes for Carbon Neutrality initiative. They offer a 5% floor area bonus for meeting certain performance requirements. Passive House, while not explicitly stated in the text, will result in a building that meets the performance requirements and gains additional floor area.

Our Approach:
Develop model text for municipal zoning codes that grant density or other bonuses when a project is Passive House certified.

Qualified Allocation Plans for Federal LIHTC

States are allowed to establish their own set of requirements and priorities for determining which projects are awarded Low Income Tax Credit (LIHTC) funds. This criteria is known as a Qualified Allocation Plan (QAP) and usually awards "points" for certain design features like being a "green building". Incorporating Passive House into the QAP has driven adoption in multiple states.

+ Pennsylvania projects can get 10 points of a potential 100 maximum for certifying Passive House.

+ Illinois projects can get up to 13 points for certifying Passive House

Our Approach:
Advocate for New York State to modify it's QAP to match the Illinois model with 10 points provided for Passive House certification and 13 provided with Passive House certification and pursuing Net Zero[1].

[1] Net Zero should be defined by QAP admistrators. Recommend using the definition in the Illinois QAP (linked above) as a reference.

State & Local Policy Working Group

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