

PHIUS+ Certification Takes You One Step Closer Towards NGBS Green



PASSIVE HOUSE OVERVIEW

A passive house can be defined as a house/building that is energy efficient, comfortable, affordable, and ecological at the same time. To be more precise, a passive house is a building, for which thermal comfort can be achieved solely by post-heating or post-cooling of the fresh air mass, which is required to achieve sufficient indoor air quality conditions – without the need for additional recirculation of air. Passive design is a construction concept where most of the heat comes from solar radiation or from the body heat of the residents entering the house. The (active) heating system of the house is designed to minimize the heating energy required.

PASSIVE HOUSE INSTITUTE (PHI) AND PHIUS

The Passive House Institute (PHI) is an independent research institute that has played an especially crucial role in the development of the Passive House concept - the only internationally recognized, performance-based energy standard in construction.

PHIUS (Passive House Institute US, Inc.) is a non-profit organization committed to making high-performance passive building the mainstream market standard.

PHIUS+ CERTIFICATION OVERVIEW

The PHIUS+ Certification Program is the leading passive building certification program in North America that combines a thorough passive house design verification protocol with a stringent Quality Assurance/Quality Control (QA/QC) program performed onsite by highly skilled and specialized PHIUS+ Raters and Verifiers.

PHIUS+ requires the following “co-requisites” for certification. While these additional requirements make PHIUS+ certification more than simply an energy efficiency program, but the combination is still not as rigorous and robust as NGBS Green certification.

- RESNET HERS Rating
- U.S. EPA ENERGY STAR Certification
- U.S. Department of Energy (DOE) Zero Energy Ready Home (ZERH) certification
- U.S. EPA Indoor air-PLUS label

PHIUS+ ALIGNMENT WITH NGBS

PHIUS and NGBS complement each other well. PHIUS+ homes are well-positioned to earn NGBS Green certification, because the PHIUS co-requisites align very closely with the NGBS requirements.

The **NGBS-ZERH Bronze Cookbook** identifies ENERGY STAR, Indoor air-PLUS, and ZERH provisions that help meet mandatory practices and achieve points toward NGBS Green certification and features additional practices to bridge the gap to achieve Bronze-level compliance. This resource demonstrates how the PHIUS+ co-requisites contribute toward NGBS compliance.

www.homeinnovation.com/-/media/Files/Certification/Green_Building/2015-NGBS-Bronze-Cookbook.xlsx

THE NGBS: A MORE COMPREHENSIVE GREEN RATING SYSTEM

PHIUS+ recognizes buildings that are extremely high performing in terms of energy use and address some additional requirements related to comfort and indoor air quality.

NGBS is a more extensive certification, with energy efficiency requirements balanced equally with other green building components. For a home or building to be certified, a building must be higher performing across six key areas: Site Design; Resource Efficiency; Energy Efficiency; Indoor Environmental Quality; and Building Operation & Maintenance.

The result is that NGBS Green certified homes are much more comprehensively “green” than passive homes. NGBS certification gives the buyers a stronger promise of healthy living, lower operating costs, and sustainable lifestyle features.

	NGBS Green	PHIUS+
Above Code	Yes	Yes
Independent Verification	Required	Required
Advanced Thermal Enclosure	Required	Required
Water Management	Required	Required
HVAC Sizing, Installation, and Commissioning	Required	Required
Ducts in Conditioned Space	Required	Required
HERS Index Score	Avg HERS Score is 58	HERS score between 35-45
ENERGY STAR	Required*	Required
Indoor Environmental Quality	Required	Indoor airPLUS Required**
Efficient Hot Water Distribution	Required	Required
Solar Ready	Optional for Higher Certification Levels	Required
Balance Ventilation	Mandatory Based on Building Tightness	Required
Renewable Energy Systems	Optional for Higher Certification Levels	Required
Low-Impact Lot Construction	Required	None
Durable, Efficient, & Resilient Construction	Required	None
Efficient Water Fixtures & Appliances	Required	None
Sustainable Landscaping	Required	None
Homeowner Education & Training	Required	Required

*ENERGY STAR is one of several compliance options for Energy Efficiency compliance.

**PHIUS+ requires achievement of Indoor airPLUS. The NGBS IEQ requirements are much more robust.

HIGHLIGHTS

- PHIUS+ homes are well-positioned to earn NGBS Green certification, because the PHIUS co-requisites align very closely with the NGBS requirements
- NGBS Green certified homes are much more comprehensively “green” than passive homes

SOURCES

<https://passivehouse.com/>







<https://www.passipedia.org/basics/what-is-a-passive-house>

<https://www.phius.org/what-is-passive-building/passive-house-principles>

<https://www.mymove.com/home-inspiration/decoration-design-ideas/passive-houses-reasons-future-will-dominated-new-pioneering-trend/>

<https://www.heatspring.com/courses/passive-vs-conventional-floor-planning-passive-house-sample-design/>

Step Up to Green Building Certification: Comparing Energy Efficiency Programs to NGBS Green

							Homeowner Education & Training
							Sustainable Landscaping
							Efficient Water Fixtures and Appliance
							Durable, Efficient, & Resilient Construction
							Low-Impact Lot Construction
					Balanced Ventilation HRV/ERV		Local Exhaust Mandatory; Whole-Building Ventilation dependent on Air Tightness
				Solar Ready, depending on climate zone	Solar Ready, always		Solar Ready and Renewable Energy Systems Optional
				Eff. Comps & H2O Distribution	Eff. Comps & H2O Distribution		Eff. Comps & H2O Distribution
				EPA Indoor airPLUS	EPA Indoor airPLUS		NGBS Green IAQ requirements are more comprehensive than Indoor airPLUS
				Ducts in conditioned space	Ducts in conditioned space		Duct System per IECC; Testing Mandatory when ducts are in unconditioned space
		HVAC QI w WHV	HVAC QI w WHV	HVAC QI w WHV	Micro-load HVAC QI		HVAC QI optional for points
		Water Management	Water Management	Water Management	Water Management		Water Management
		Independent Verification	Independent Verification	Independent Verification	Independent Verification		Independent Verification
IECC 2009 Enclosure	IECC 2012 Enclosure	IECC 2009 Enclosure	IECC 2012 Enclosure	IECC 2012/15 Enclosure/ES Windows	Ultra-Efficient Enclosure		IECC 2018 Enclosure
HERS 85-90	HERS 70-80	HERS 65-75	HERS 65-55	HERS 55-48	HERS 35-45		Avg. HERS Score is 58
IECC 2009 	IECC 2012 	ENERGY STAR v3 	ENERGY STAR v3.1 	DOE ZERH 	PHIUS+ 	NGBS Green 