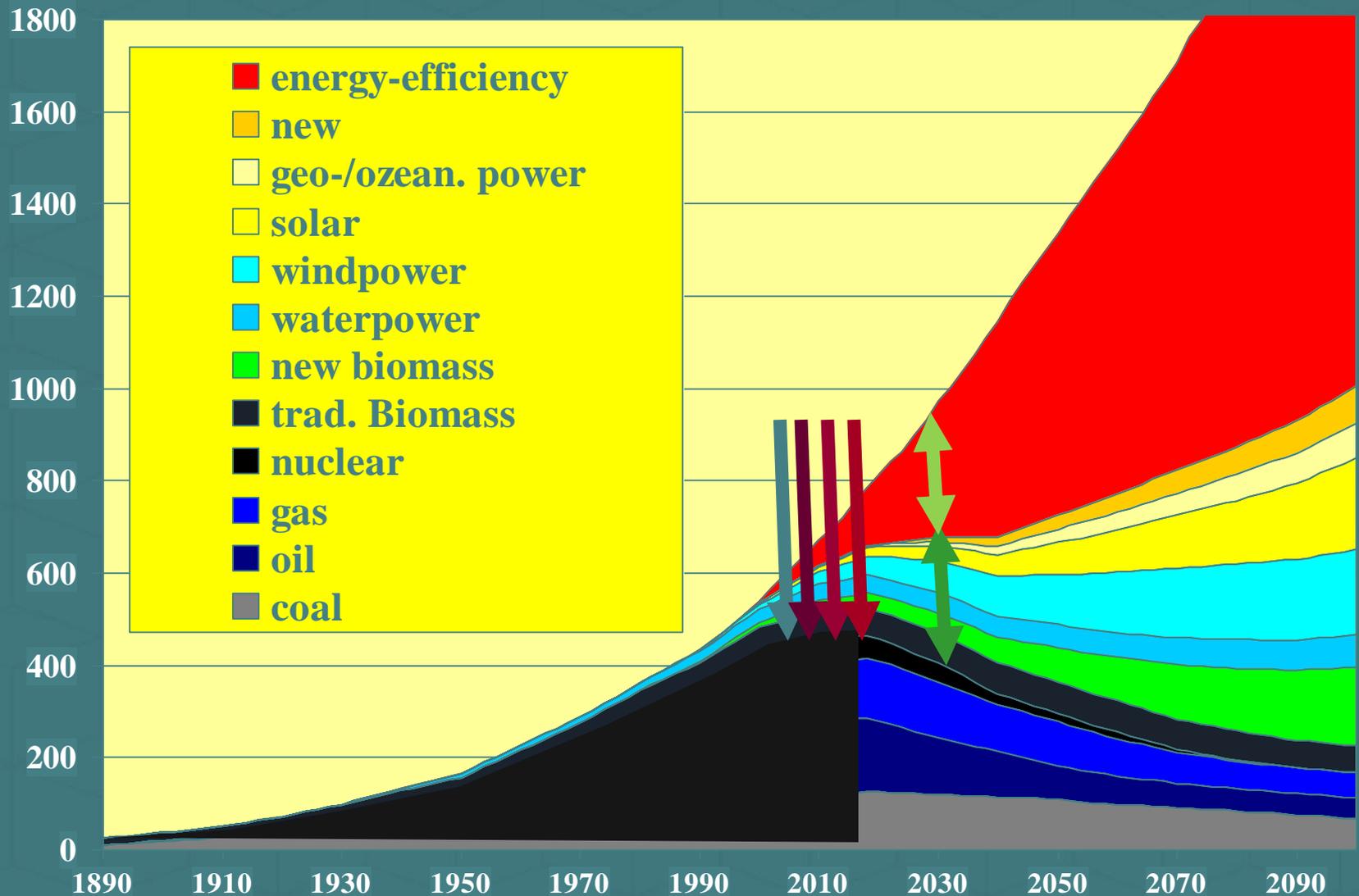


AFFORDABLE MULTIFAMILY PASSIVE HOUSING

SUPPORTED BY:

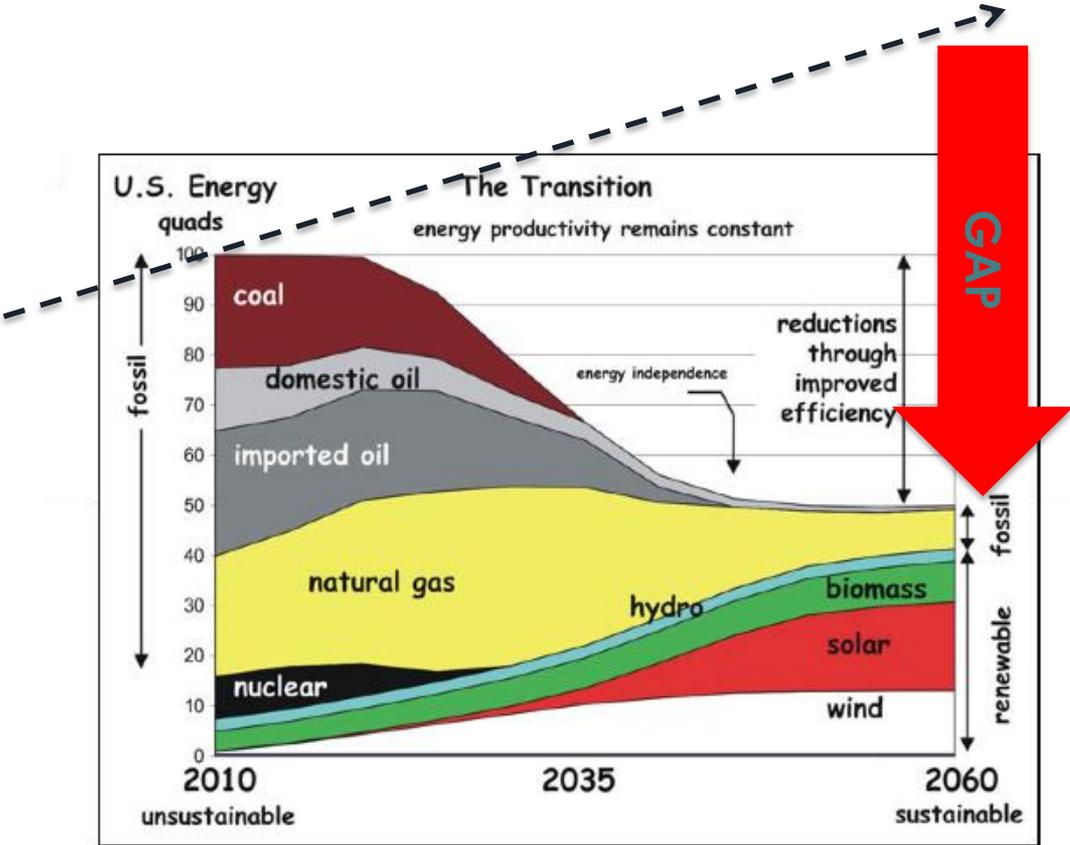
MacArthur
Foundation

FUTURE WORLDWIDE TRANSITION

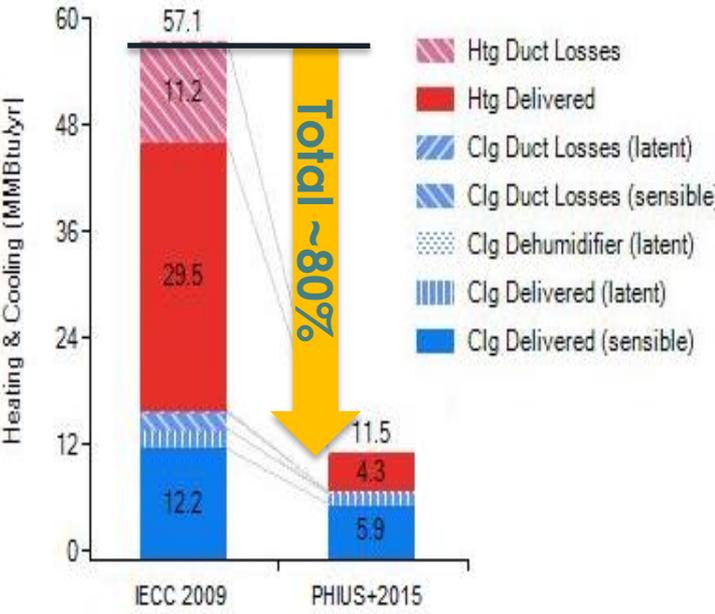


Reference: Shell-Study (till 2005), Scenario with high efficiency and regenerative usage of energy

PASSIVE BUILDING IS **EFFECTIVE** IN REDUCING ENERGY: ~ FACTOR 8-10



Heating energy reduction in passive buildings:
~**80-90%**



Graphic from Article: J. Douglas Balcomb, Ph.D., "The Energy Road Ahead", Solar Today Magazine, Apr 2010

PASSIVE STANDARDS PERFORM TODAY AT 80% OF THE 2030 CHALLENGE

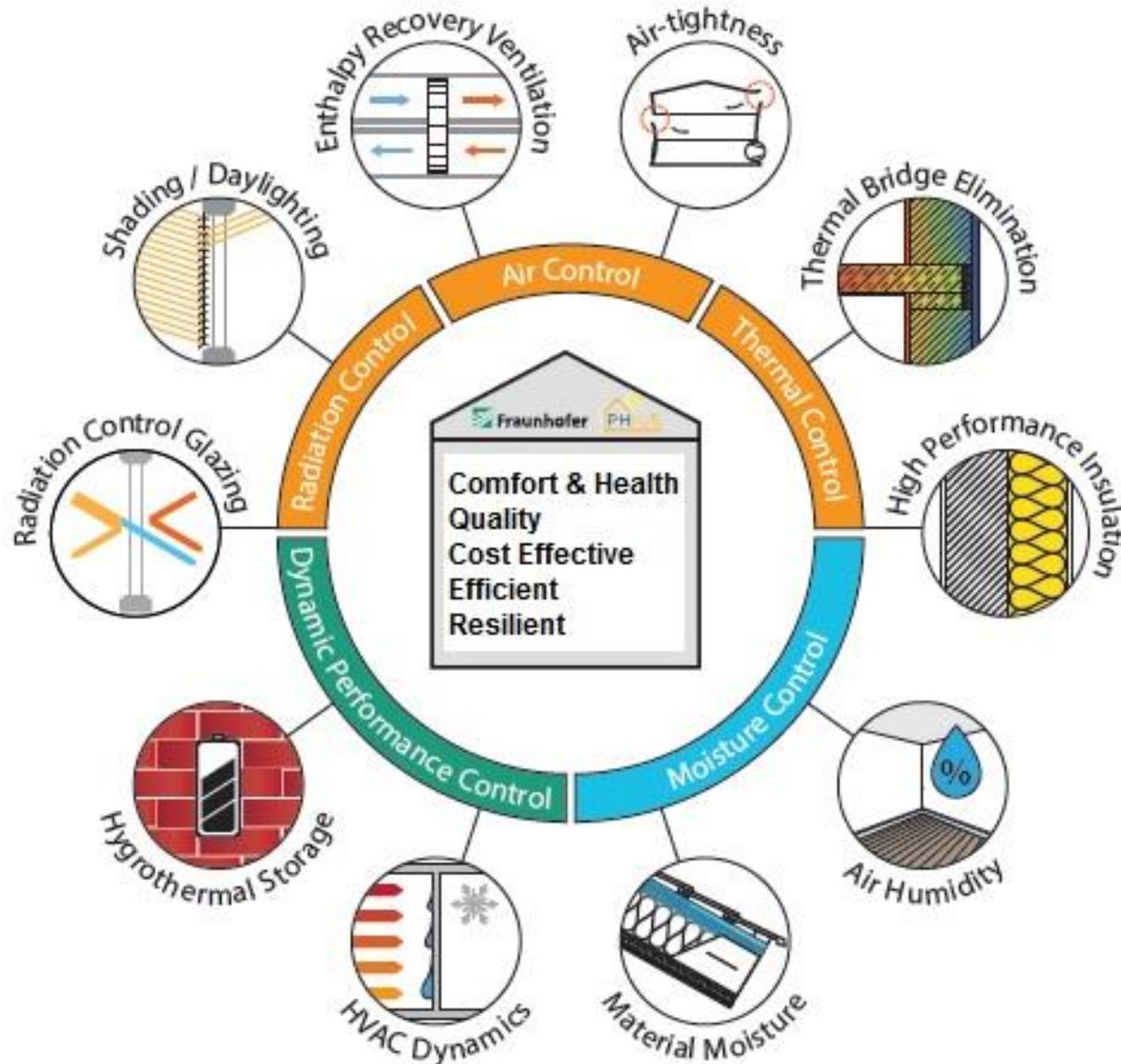
U.S. Averages for Site Energy Use and 2030 Challenge Energy Reduction Targets by Space/Building Type¹

From the Environmental Protection Agency (EPA): Use this chart to find the site fossil-fuel energy targets

Primary Space / Building Type ²	Available in Target Finder ³	Average Source EUI ⁴ (kBtu/Sq.Ft./Yr)	Average Percent Electric	Average Site EUI ⁴ (kBtu/Sq.Ft./Yr)	2030 Challenge Site EUI Targets (kBtu/Sq.Ft./Yr)				
					50% Target	60% Target	70% Target	80% Target	90% Target
Residential Space / Building Type^{6,7}									
Single-Family Detached		76.6	-	43.8	21.9	17.5	13.1	8.8	4.4
Single-Family Attached		70.7	-	43.7	21.9	17.5	13.1	8.7	4.4
Multi-Family, 2 to 4 units		93.2	-	58.2	29.1	23.3	17.5	11.6	5.8
Multi-Family, 5 or more units		99.4	-	49.5	24.8	19.8	14.9	9.9	5.0
Mobile Homes		153.2	-	73.4	36.7	29.4	22.0	14.7	7.3

Source: www.architecture2030.org

PASSIVE BUILDING PRINCIPLES



LEGISLATION & INCENTIVE PROGRAMS



- **City of Seattle, WA** – City Ordinance 124608 refers to PHIUS+ certified MF buildings to qualify for a higher FAR (adopted July 2015) **and** PHIUS+ projects qualify for expedited permitting under the Priority Green Program
- **City of San Francisco, CA** – Passive house projects qualify for expedited permitting
- **Enterprise Green Communities Criteria** – PHIUS+2015 certified projects get 10 points awarded in the energy section

AFFORDABLE MF & HOUSING AGENCIES



Homes and Community
Renewal

PHFA

- **Illinois Housing & Development Authority, IL**, Qualified Allocation Plan awards extra points for passive house projects.
- **NY State Homes and Community Renewal Agency (HCR)**- Passive house projects are encouraged
- **Pennsylvania Housing Finance Agency** RFP awards extra points for passive house projects – requires the consultant to have at least two projects certified, emphasis on third party onsite verification

EXAMPLE PROJECTS

80 UNIT SRO
MULTIFAMILY BUILDING
RETROFIT



UPTOWN LOFTS - AFFORDABLE DEVELOPMENT IN PITTSBURGH



Uptown Lofts, Pittsburgh, PA

FIRST AFFORDABLE FULLY CERTIFIED 24 UNIT BUILDING

HABITAT FOR HUMANITY – EMPOWER HOUSE DUPLEX AND TOWNHOUSES



WASHINGTON DC



Orenco Station, Portland, OR

LARGEST DEVELOPMENT TO DATE WITH 57 UNITS

© 2016 PHIUS

RECENTLY COMPLETED



Weinberg Commons, Washington DC

AFFORDABLE RETROFIT PROJECT IN WASHINGTON DC



UNDER CONSTRUCTION

276 UNIT AFFORDABLE DEVELOPMENT



CHOM Village Center, Brewer, ME



UNDER CONSTRUCTION - DEVELOPMENT WITH 47 UNITS

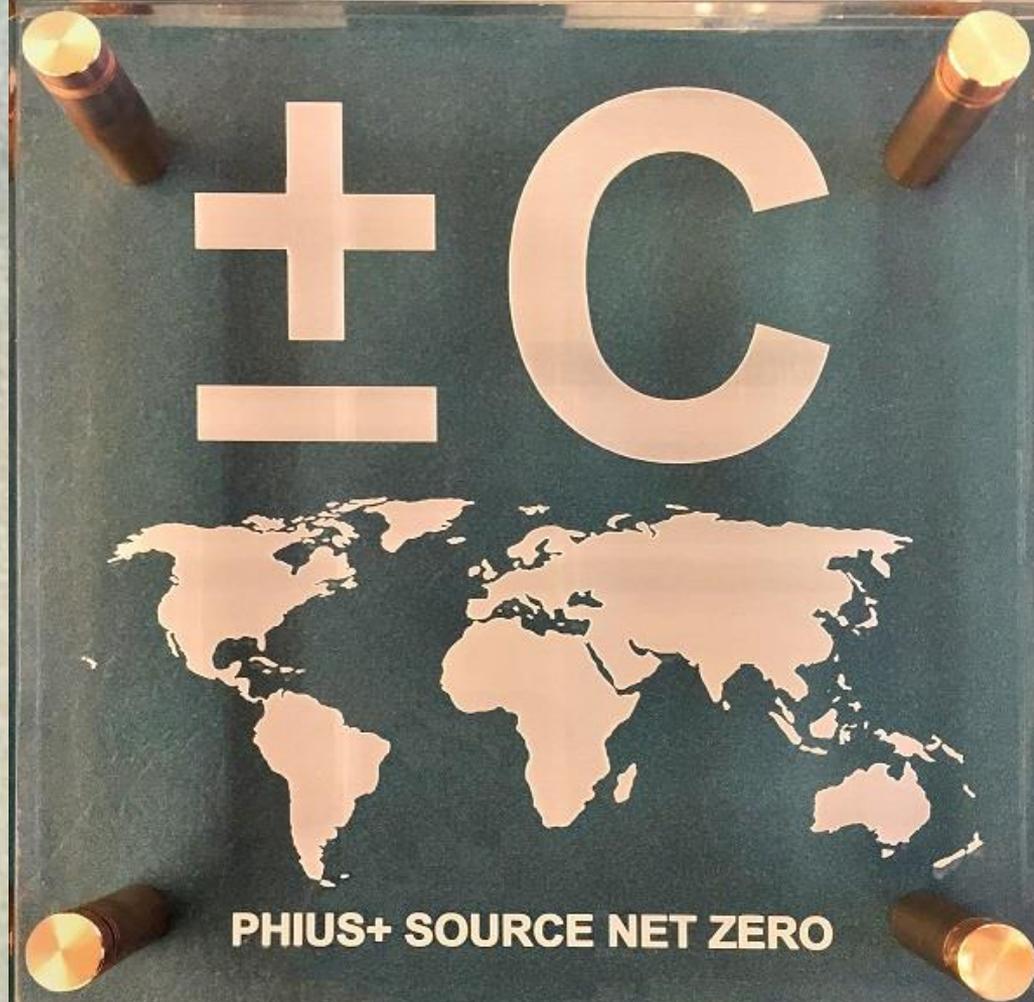


Beach Green North, New York, NY



LARGE DEVELOPMENT UNDER CONSTRUCTION WITH 101 UNITS

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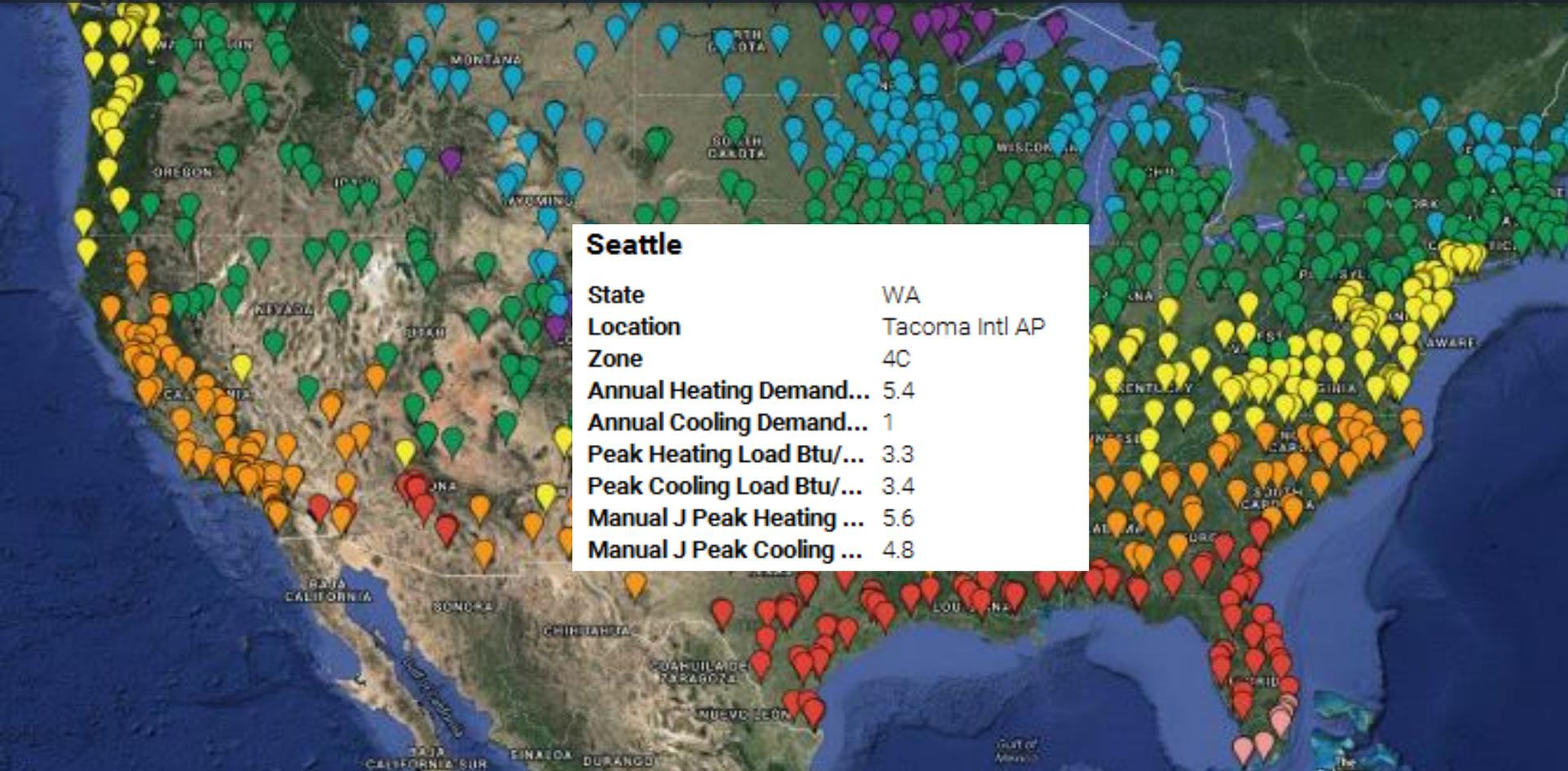


PHIUS+ CERTIFICATIONS:

1. *Certified to Passive Building Standards*
2. *Source Net Zero Certified*

CLIMATE SPECIFIC, COST-OPTIMIZED PERFORMANCE GOALS

PASSIVE STANDARDS FOR VARYING CLIMATES



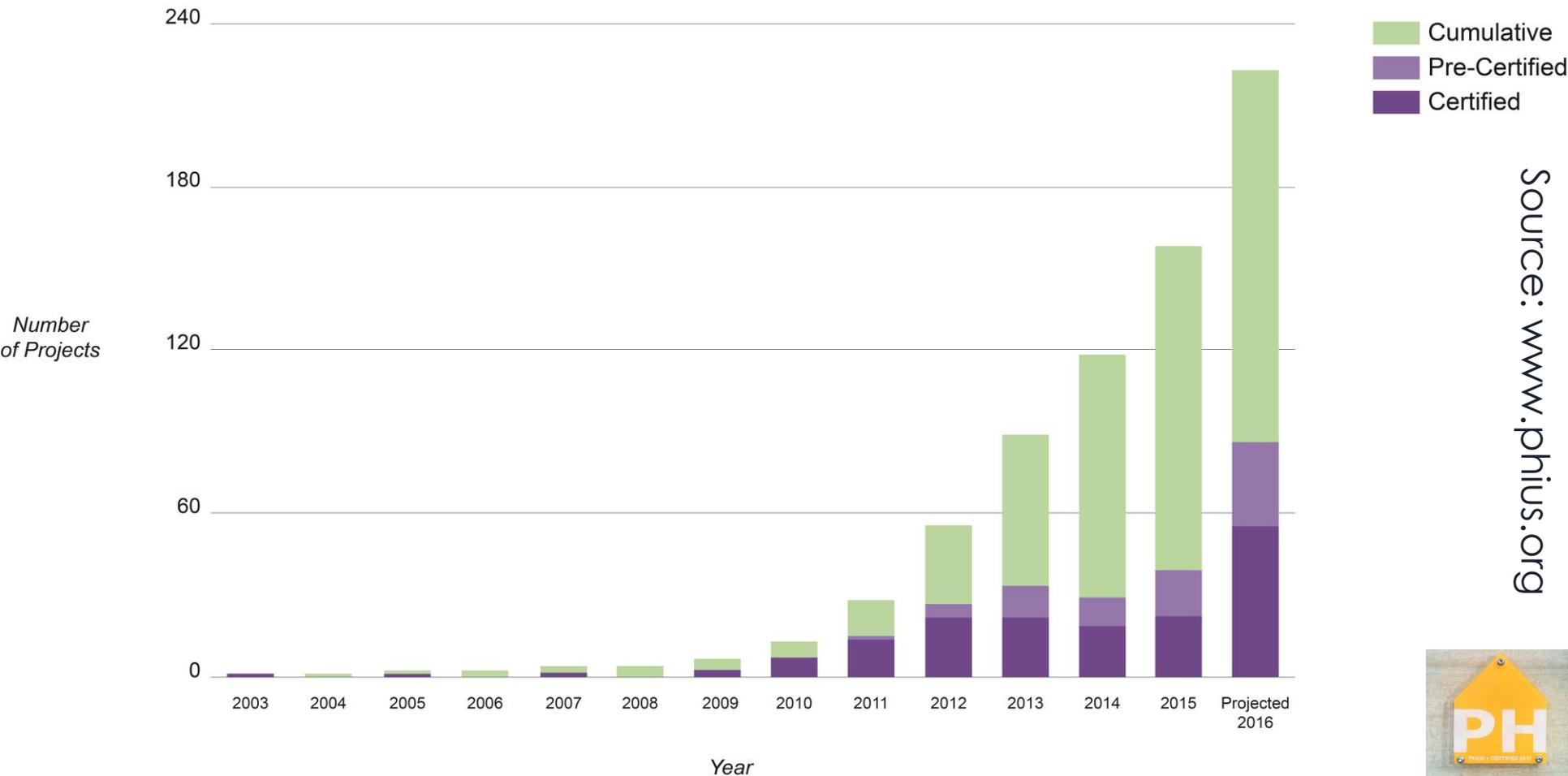
PROJECT CERTIFICATION

High-Performance Home Staircase



PASSIVE HOUSE US DATABASE

PHIUS+ Project Count



PHIUS/ZERH CERTIFIED PROJECTS

THANK YOU



Katrin Klingenberg, Executive Director PHIUS

www.PHIUS.org/www.PHAUS.org