

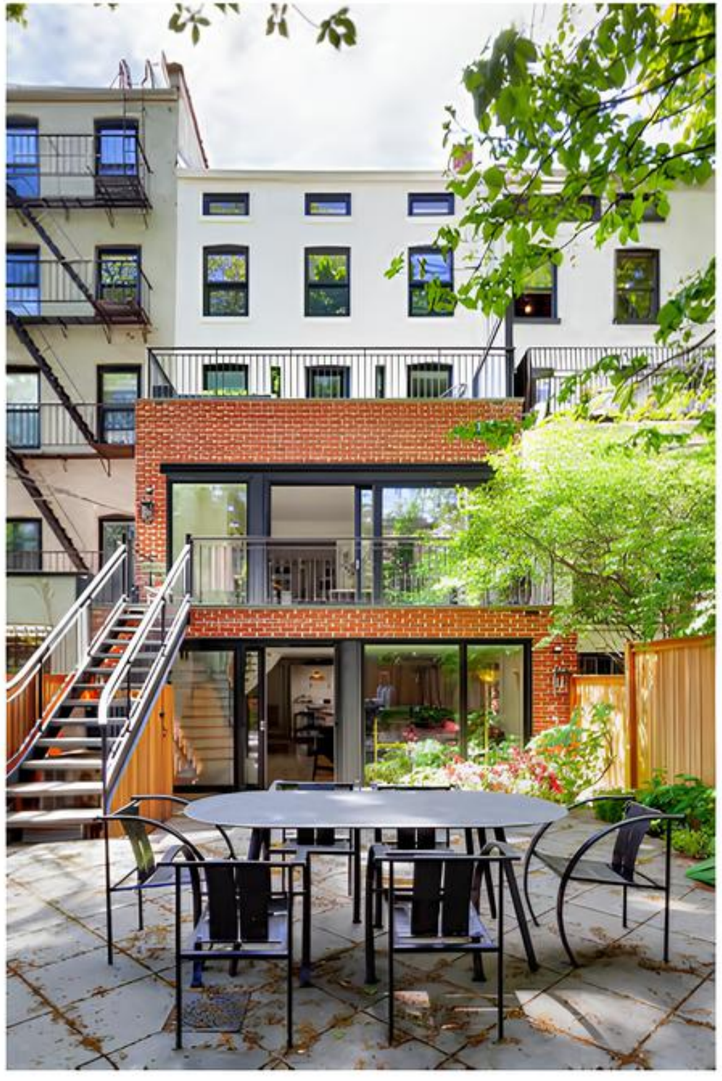
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FROM NICHE TO NECESSARY:
Scaling Passive House for a Resilient Future

MICHAEL INGUI, Ingui Architecture

PRESIDENT, INGUI ARCHITECTURE







www.inguiarchitecture.com

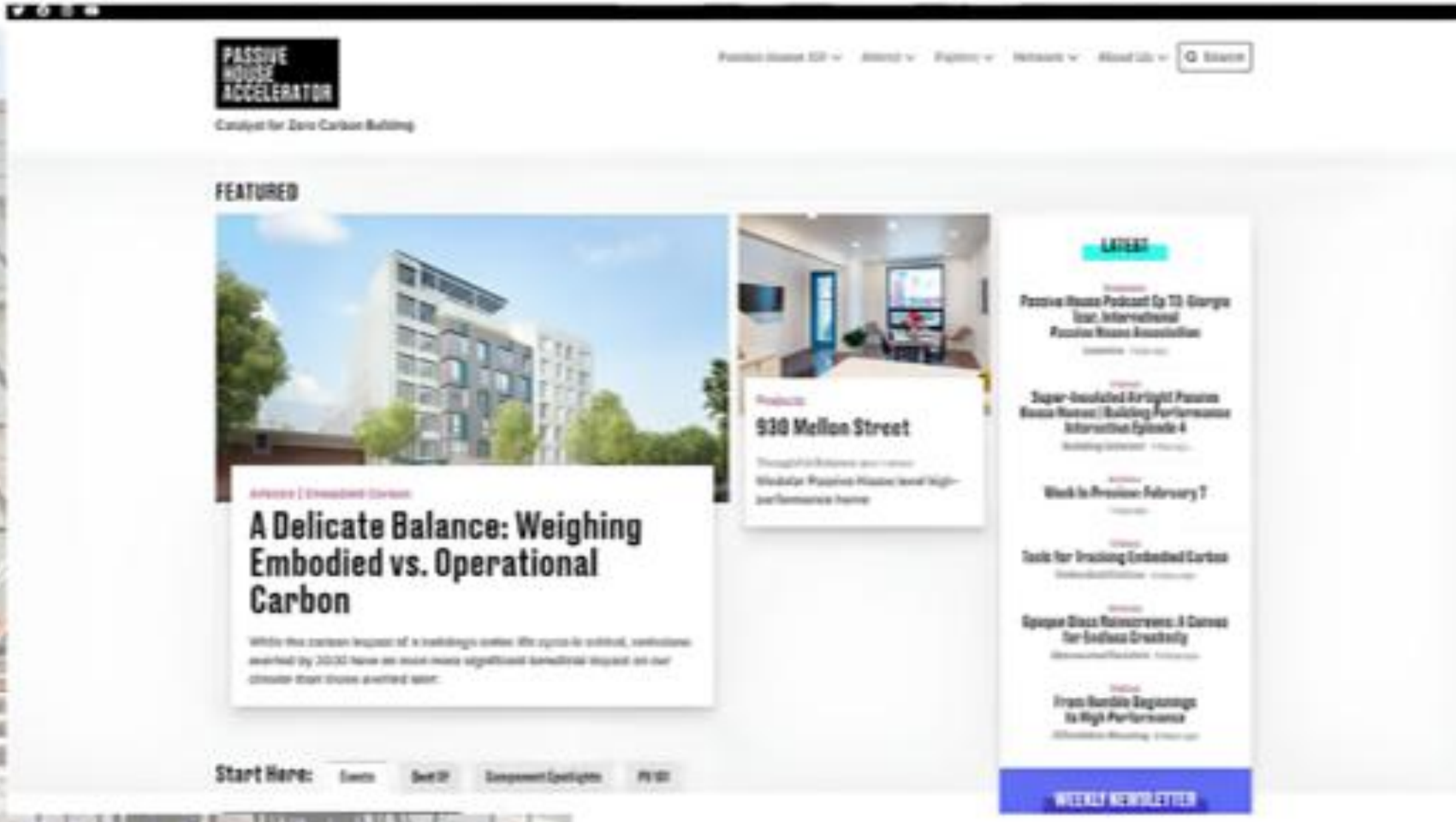
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COFOUNDER, PASSIVE HOUSE ACCELERATOR

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www.passivehouseaccelerator.com

PASSIVE HOUSE ACCELERATOR

COFOUNDER, SOURCE 2050

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www.source2050.com

SOURCE 2050

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Historic Preservation - Adaptive Reuse and Passive House





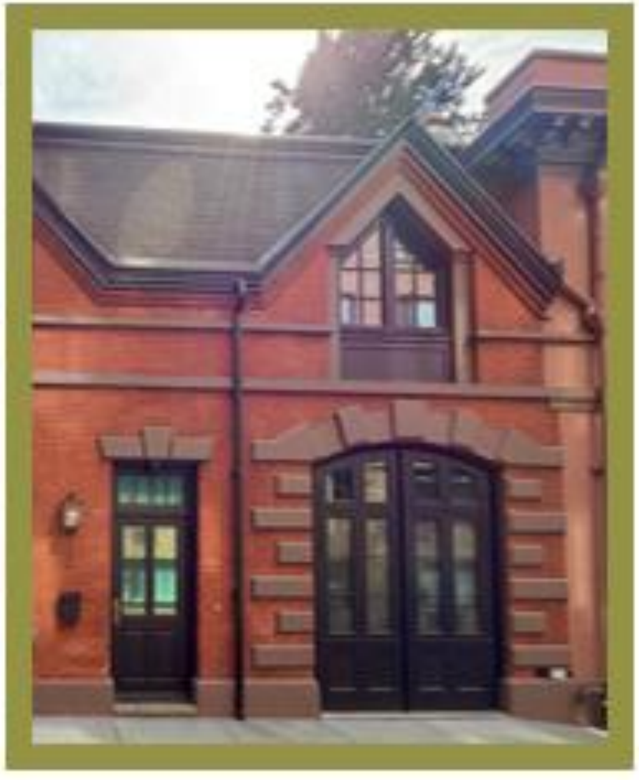

Which carriage houses are passive houses?

NO LABELS. NO HINTS. TAKE A GUESS.

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Historic Preservation - Adaptive Reuse and Passive House



Which carriage houses are passive houses?

IF YOU CAN IDENTIFY A PASSIVE HOUSE BY ITS ARCHITECTURE, WE MAY BE DOING SOMETHING WRONG.

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Which townhouse is the passive house?

SAME GAME – NOW THERE'S JUST ONE TOWNHOUSE...

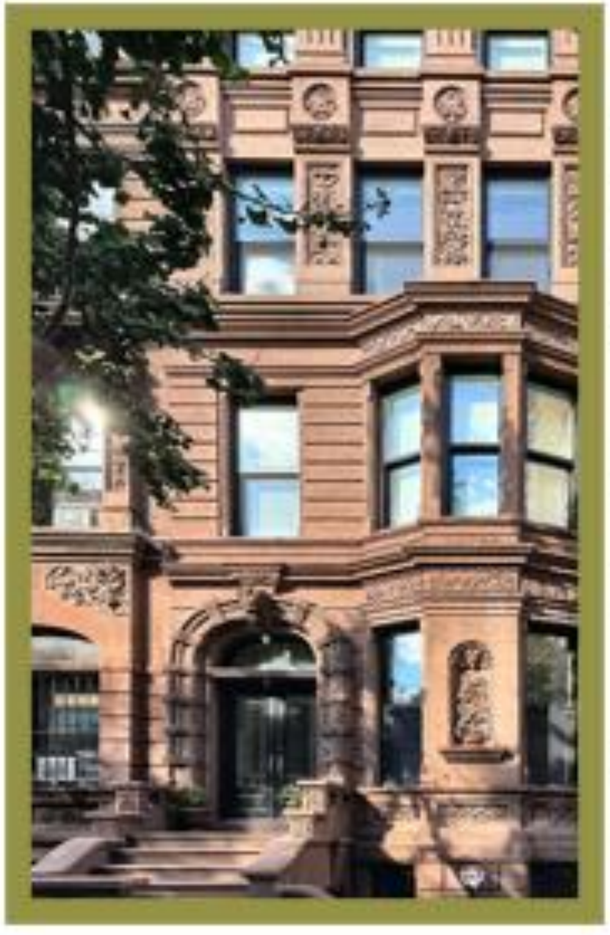





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Which townhouse is the passive house?

SAME GAME - NOW THERE'S JUST ONE TOWNHOUSE...









Which one of these should be a Passive House?



mosart

Which one of these should be a Passive House?

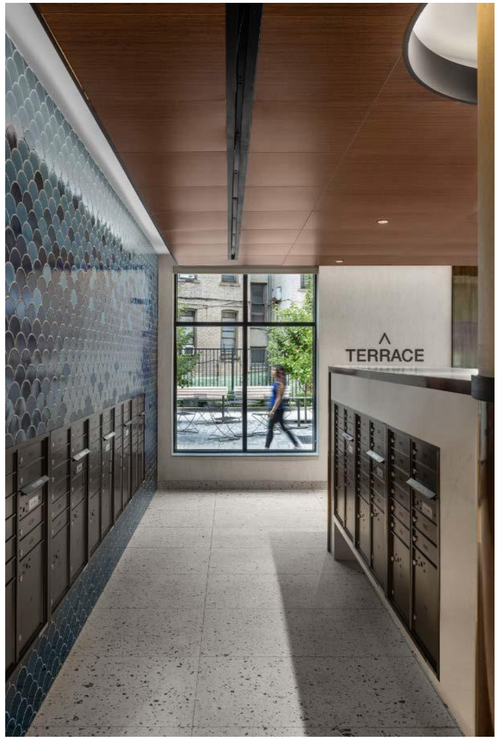
ALL OF THEM!



mosart

Passive House Projects in Every Building Type

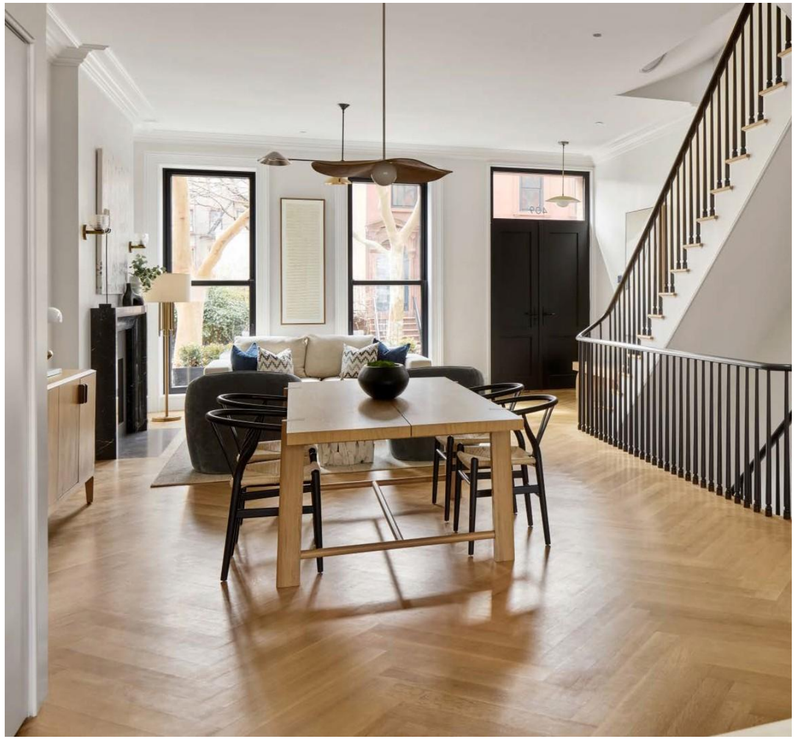
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Vital Brookdale
Dattner Architects
Affordable and supportive housing.
Photography: Pavel Bendov



Harmony Commons at the University of Toronto
Handel Architects
Student housing.
Photography: Ryan Fung



Carroll Gardens Passive House
Ingui Architecture
Single-family residential.
Photography: Allyson Lubow

Passive House projects are now appearing in every building type.

Different Scale, Same Principles

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Wilmcote House, *ECD Architects*
Largest occupied building to target EnerPHit in the world, containing 111 affordable housing flats.
Photography: Timothy Soar



MCM ReEnvisioned, *Essential Habitat Architecture*
Single family residence in California.
Photography: Agnieszka Jakubowicz Photography

Passive House Projects at Every Scale

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Harmony Commons at the University of Toronto, *Handel Architects*
The largest completed Passive House project in Canada, delivering 746 beds to first-year students at University of Toronto Scarborough Campus.
Photography: Fengate Asset Managment

Same Thinking, Different Restraints

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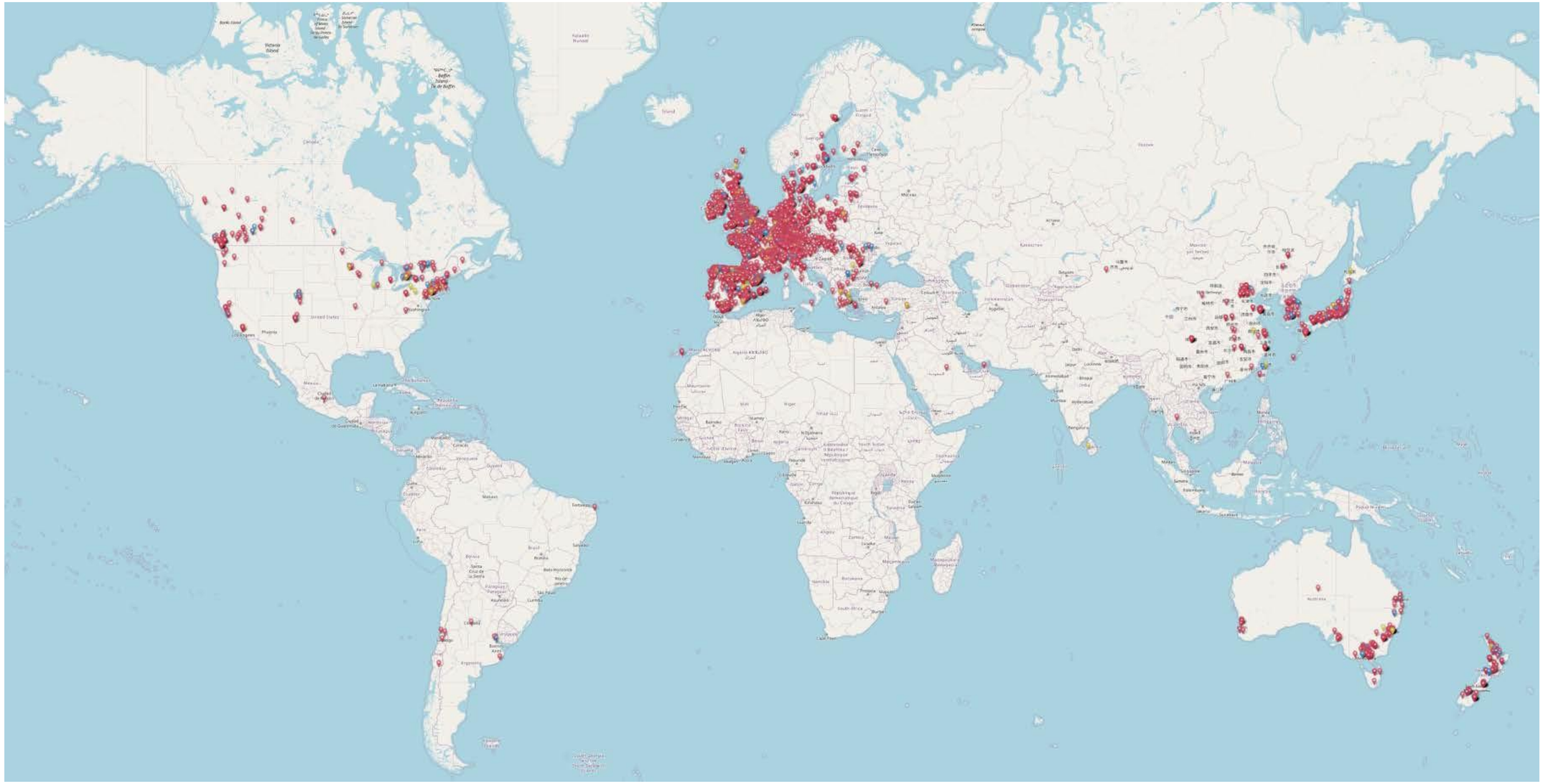
Engine 16, *Ingui Architecture*
Mixed use adaptive reuse firehouse with four residential apartments.
Photography: Adam Kane Macchia



Rubin Hall, *FXCollaborative (Architect), SGH (Consultant)*
Passive House certified Residence Hall, housing nearly 700 freshman at New York University.
Photography: Karsten Moran

Passive Houses are all across Europe

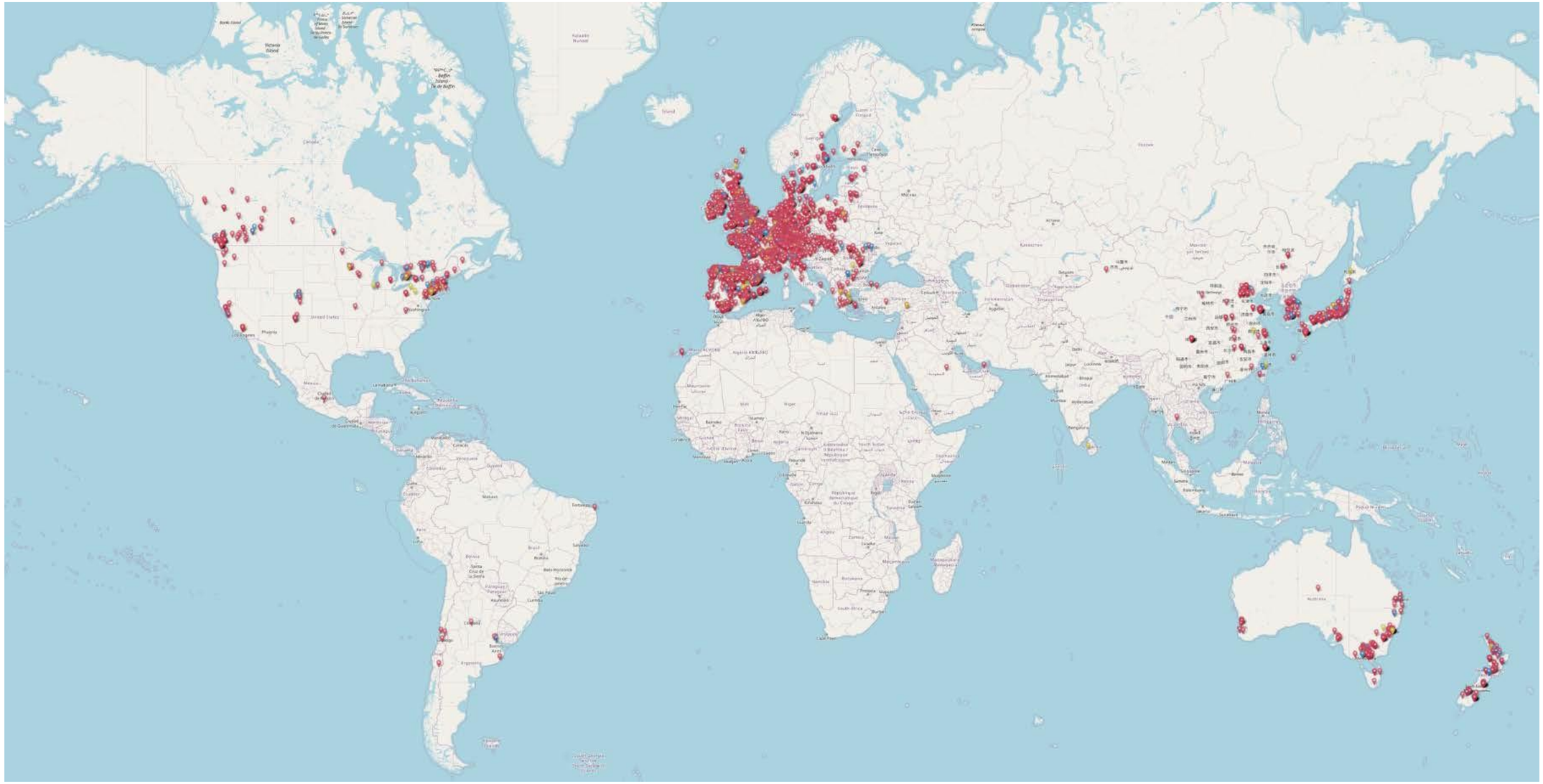
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Certified Buildings Map courtesy Passivhaus Institut

And spreading quickly throughout the globe.

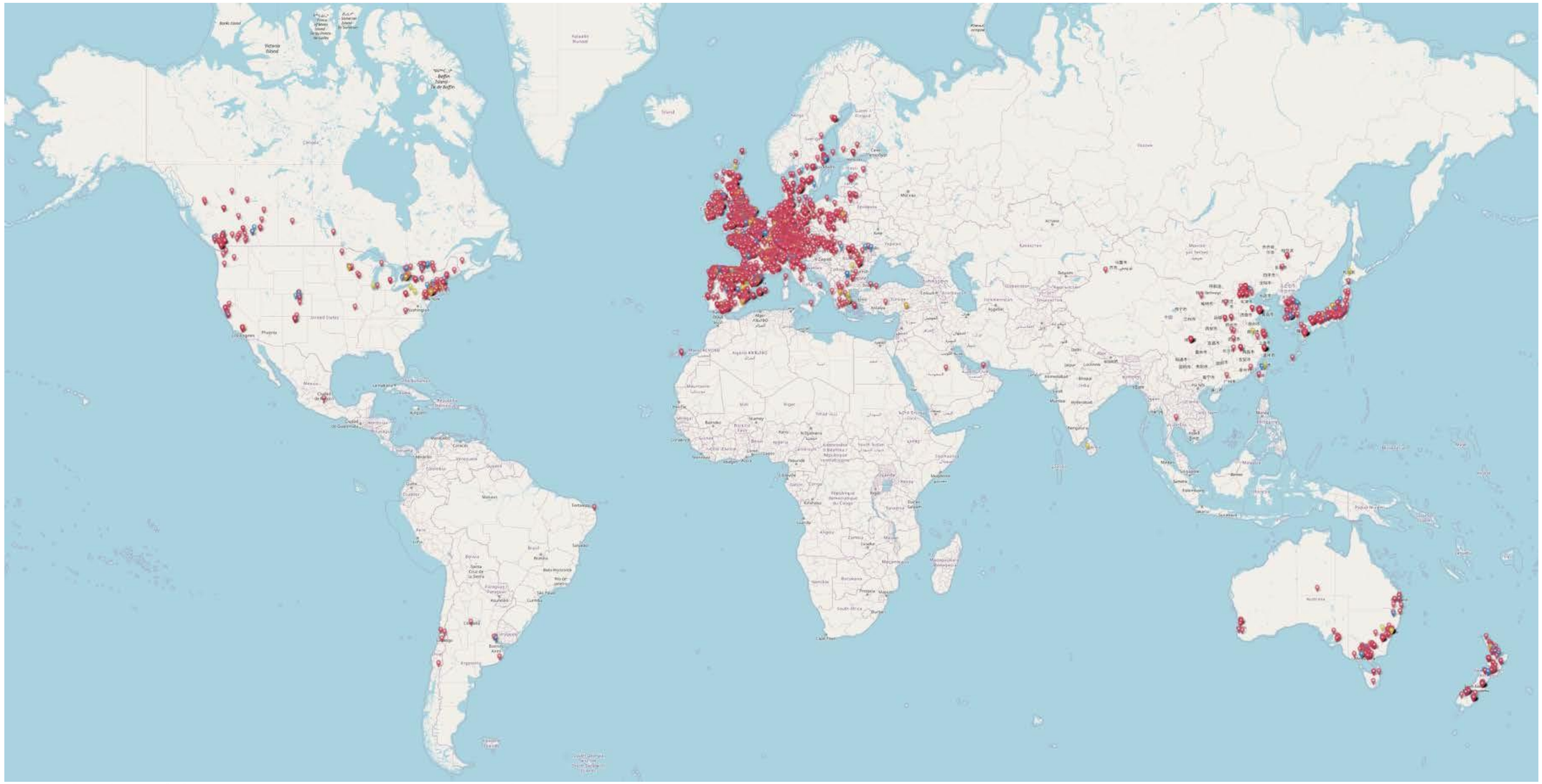
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Certified Buildings Map courtesy Passivhaus Institut

The challenge is no longer just scaling.

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Certified Buildings Map courtesy Passivhaus Institut

Passive House must become a global industry standard.

Technical Capability has Outpaced Market Demand

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Passive House Adoption Gap	
We have a handle on Technical Capabilities	Now we need to focus on Market Demands
PHPP modeling tools	Client understanding
Certified designers	Financing structures
Proven assemblies	Broker awareness
Contractor experience	Policy alignment
Thousands of completed projects	Builder confidence

We don’t have a technology problem; we have a translation problem.

Adjusting Market Perspectives

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From a decade ago...

The New York Times

BEYOND FOSSIL FUELS

Can We Build in a Brighter Shade of Green?

By Tom Zeller Jr.
Sept. 25, 2010

The New York Times

The Passive House: Sealed for Freshness

By Sandy Keenan
Aug. 14, 2013

The New York Times

The Passive House in New York

By Alison Gregor
March 27, 2015

NEW YORK POST

REAL ESTATE

The green home craze that's saving New Yorkers money

By Avinash Rajagopal
Published Sep. 30, 2015, 8:41 p.m. ET

Adjusting Market Perspectives

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...To today.



Forbes

REAL ESTATE

Passive House Designs A Growing Differentiator In NYC

By Jeffrey Steele, Contributor

Published Jul 10, 2023, 09:00am EDT, Updated Jul 11, 2023, 11:13am EDT



the River
HUDSON VALLEY NEWSROOM
ARTS FOOD & DRINK HOME & GARDEN HV TOWNS LIFESTYLE HOROSCOPES WELLNESS CANNABIS THE RIVER EVENTS READERS' CHOICE

Environment, The River Newsroom

Is This the Moment for Passive House Design in New York?

How an idealistic, 70s-era building trend may help the state transition away from fossil fuels.

by Lissa Harris February 18, 2022



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What is Passive House Design? An Eco-Friendly Architeture Trend in NYC

WILL FAINARU SEPTEMBER 26 2024 10 MIN READ



NEW YORK POST
Lifestyle Weird But True Health Sex & Relationships Viral Trends Human Interest Astrology Parenting Fashion & Beauty Food & Drink Shopping Travel

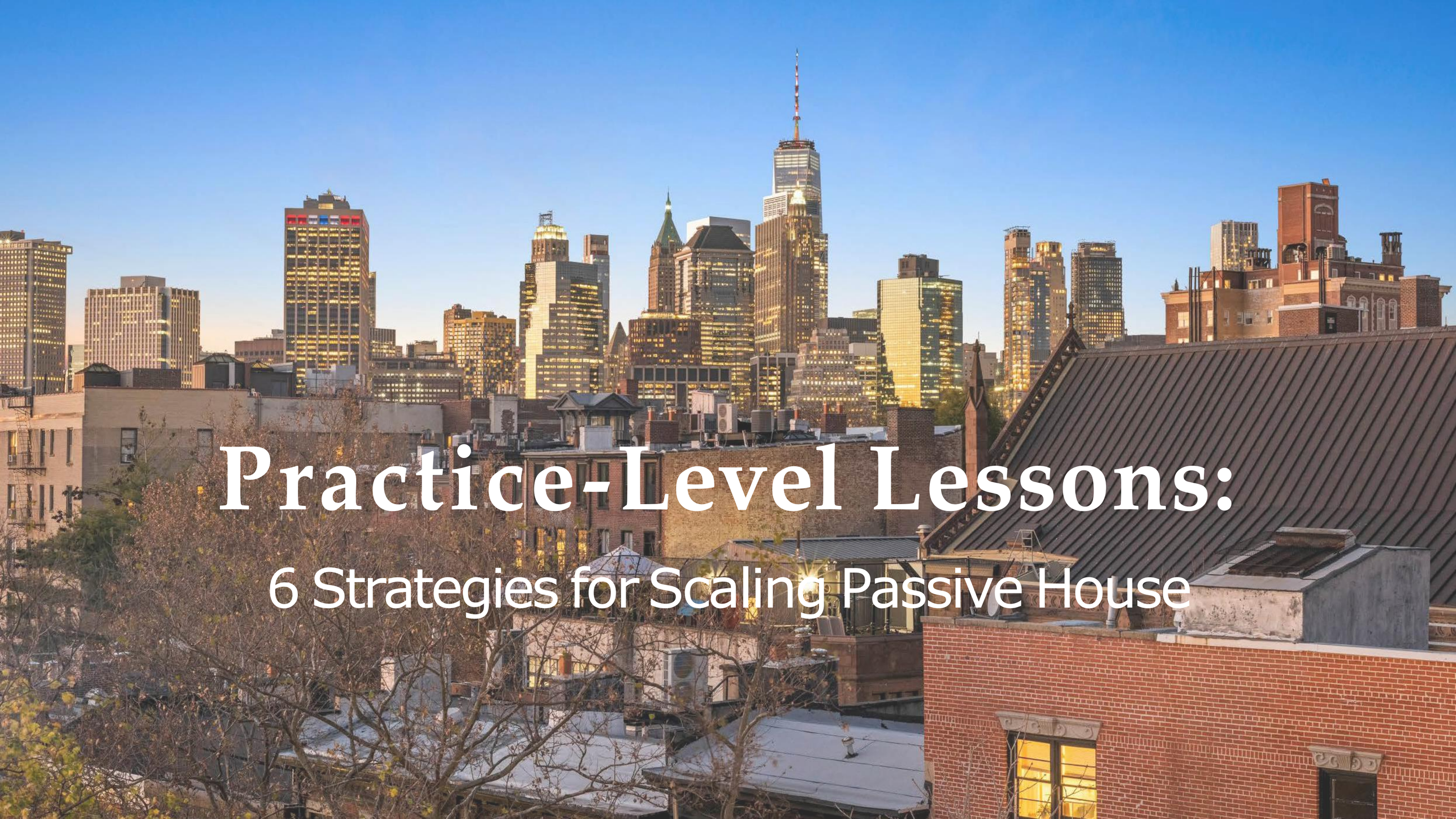
LIFESTYLE

Is 'passive' design the future of architecture?

By Sam Lubell

Published July 7, 2024 8:00 a.m. ET

In all that time, the conversation hasn't changed much.



Practice-Level Lessons:

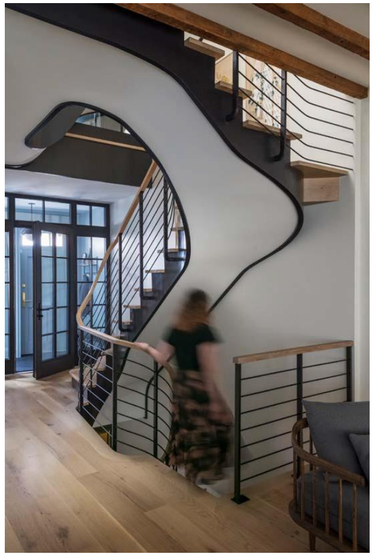
6 Strategies for Scaling Passive House

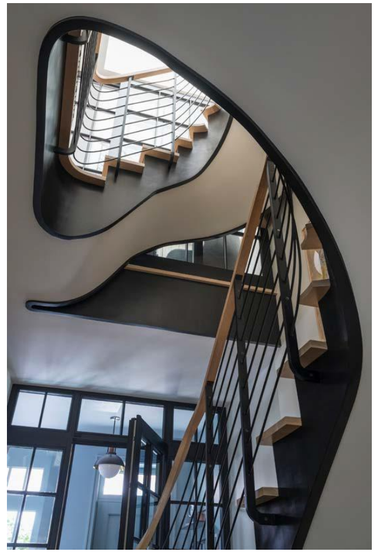
1. The Power of Storytelling

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Projects don’t scale; ideas do. And *stories scale ideas*.

2. Comfort Before Carbon

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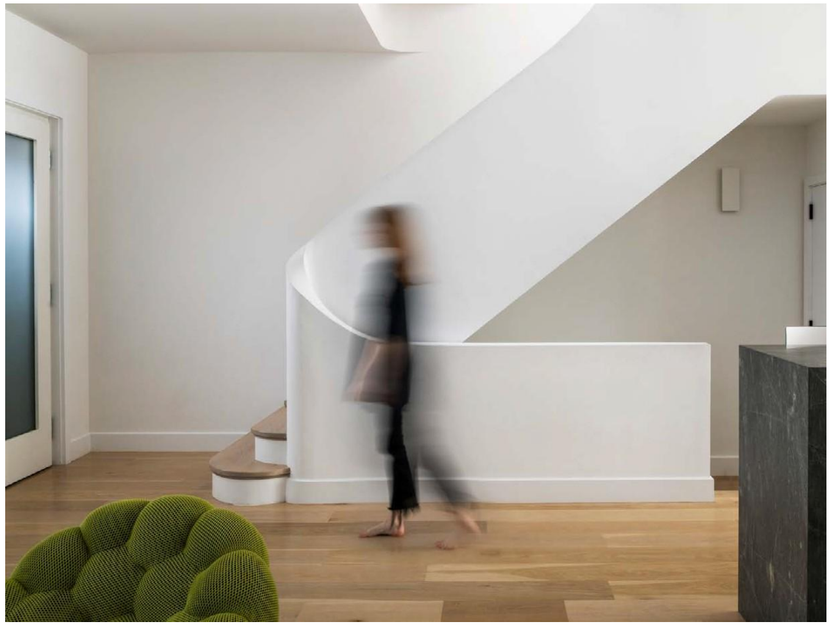


The average person

- Doesn’t know how a building works
- Doesn’t know that 40% of carbon emissions come from the built environment
- Doesn’t understand the consequences of high-carbon buildings

2. Comfort is the Entry Point to Climate Action

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Our clients often prioritize health and wellness from the top floor to the cellar. Passive House construction makes this possible, providing opportunities to connect with yourself and with the outdoors.

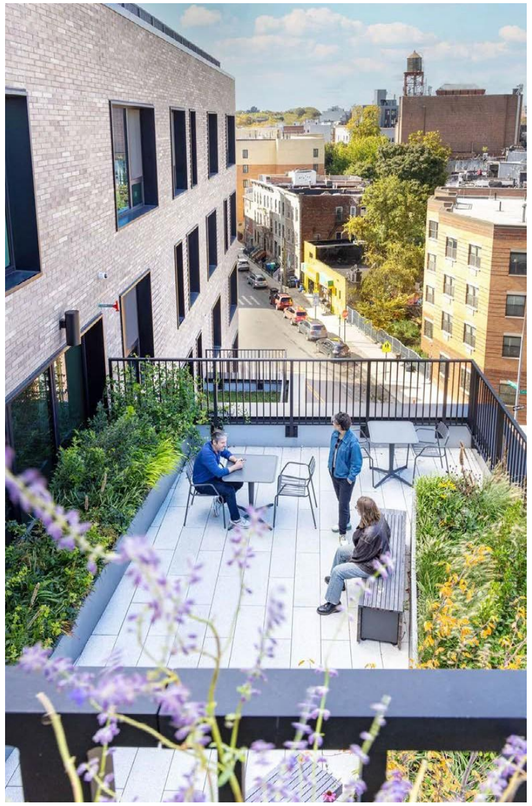
Architecture by Ingui Architecture, Photography (left to right): Adam Kane Macchia, Peter Peirce, Peter Peirce

Our clients ask for quiet, fresh air, comfort, and health (not carbon).

2. Comfort Before Carbon

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The Rise is a mixed-use development that offers supportive and affordable housing for justice-involved families and low-income households. Along with Passive House certification, the development employs Active Design and Trauma-informed Design principles to improve the social, physical, and mental wellbeing of occupants.

Architecture by Magnusson Architecture and Planning, Photography by David Sundberg

Passive House can be used as an intentional tool to achieve comfort goals.

3. Incentives Help, but They Don't Carry Projects

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Incentives have helped markets cross the adoption gap.

Incentives were essential to create the infrastructure necessary and provide the proof needed to scale high-performance building.

Long-term adoption must stand without incentives.

NEW YORK STATE OF OPPORTUNITY. NYSERDA

COLORADO Energy Office

VERMONT DEPARTMENT OF PUBLIC SERVICE Clean Energy Development Fund

OREGON DEPARTMENT OF ENERGY

New Jersey BPU Board of Public Utilities

CALIFORNIA ENERGY COMMISSION 50 YEARS OF ENERGY LEADERSHIP

Illinois Department of Commerce & Economic Opportunity

CONNECTICUT GREEN BANK SM

MASSACHUSETTS CLEAN ENERGY CENTER

3. Passive House as a Risk-Reduction Strategy

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Passive House as Risk Reduction	
Conventional Construction	Passive House Construction
Energy volatility	Energy stability
Moisture issues	Durable envelopes
Comfort complaints	Comfort and reliability
Complex mechanical systems	Smaller mechanical systems

Developers, insurers, and financers respond to risk.
Passive House is a survivability technique that reduces risk.

This makes Passive House a risk-reduction tool for developers.

4. Build Champions Beyond Architecture



SUPERCOOL Podcast
Hosted by climate entrepreneur Josh Dorfman



Insider Trading Podcast
Hosted by Ravi Kantha of SERHANT



Real Cost of Renovation Panel
Hosted by Ravi Kantha of SERHANT

Passive House cannot scale exclusively inside our ecosystem.

5. Translate Performance into Benefits

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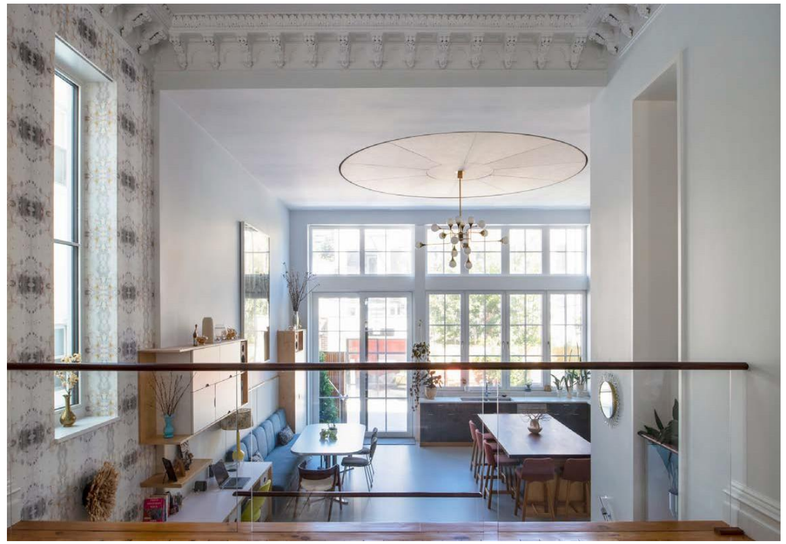
CREATING A BETTER HOME FOR YOU AND YOUR FAMILY WHILE SAVING THE PLANET - IT IS A WIN - WIN!

The Five Principles of Passive House	*Focusing on the Amenities these Principles Provide*
Airtightness	Sealed from all bugs, dust, and unwanted moisture
Balanced ventilation with heat recovery	Healthy filtered fresh air 24/7
High performance windows and doors with proper solar management	Windows that create a safe, warm, and serene environment
Thermal bridge free design	Warm walls and floors
Continuous insulation	Warm and comfortable buildings

Passive House principles provide tangible benefit to occupants.
Make sure owners and developers are aware of these benefits.

6. Built Proof

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People believe what they experience.

6. Built Proof: People Believe What they Experience

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We have to show them what Passive House looks like,
from construction to completion.



From Individual Projects to Systemic Adoption

A Unified Narrative

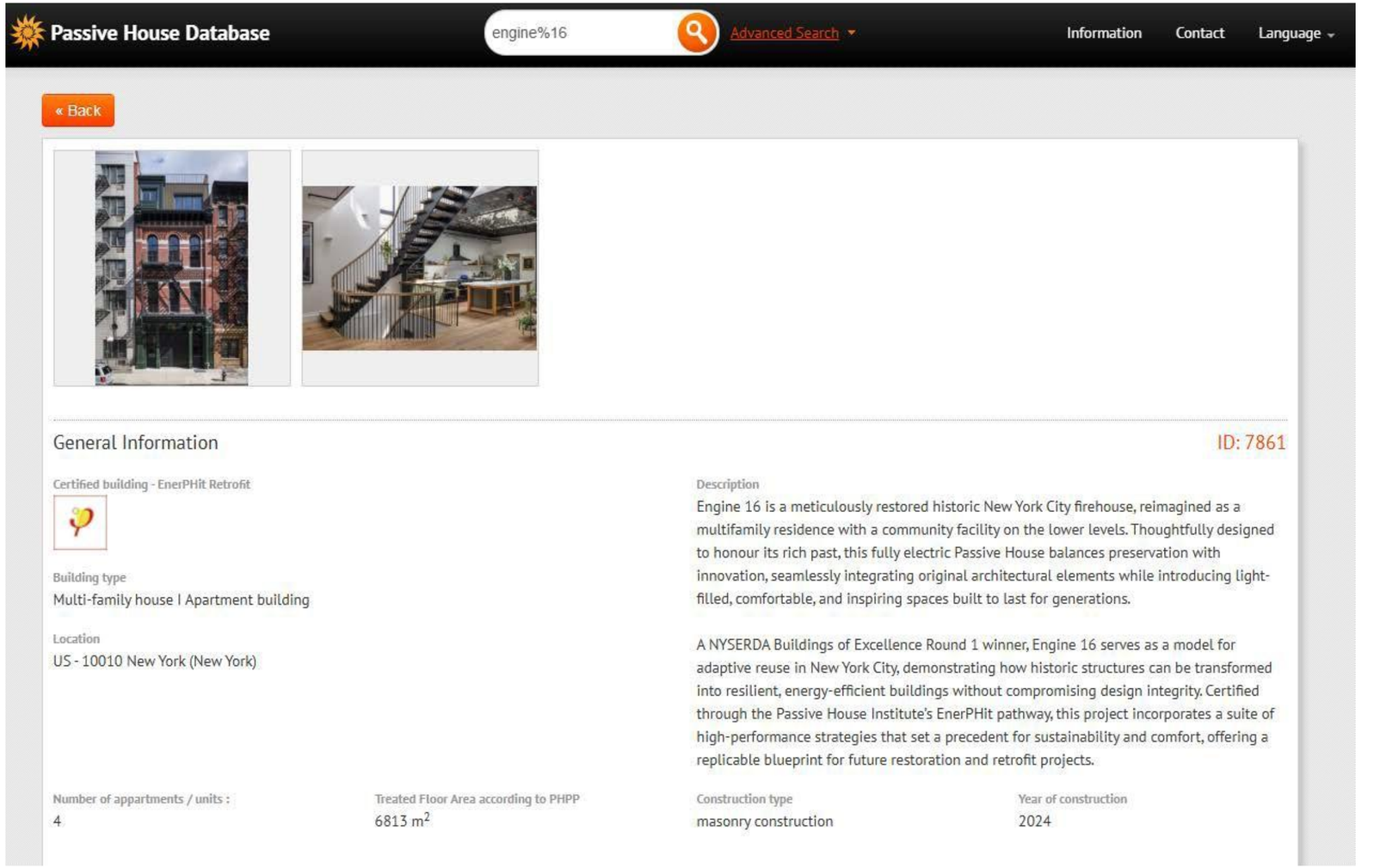
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The industry needs a shared language around performance.



Open Data and Collective Proof

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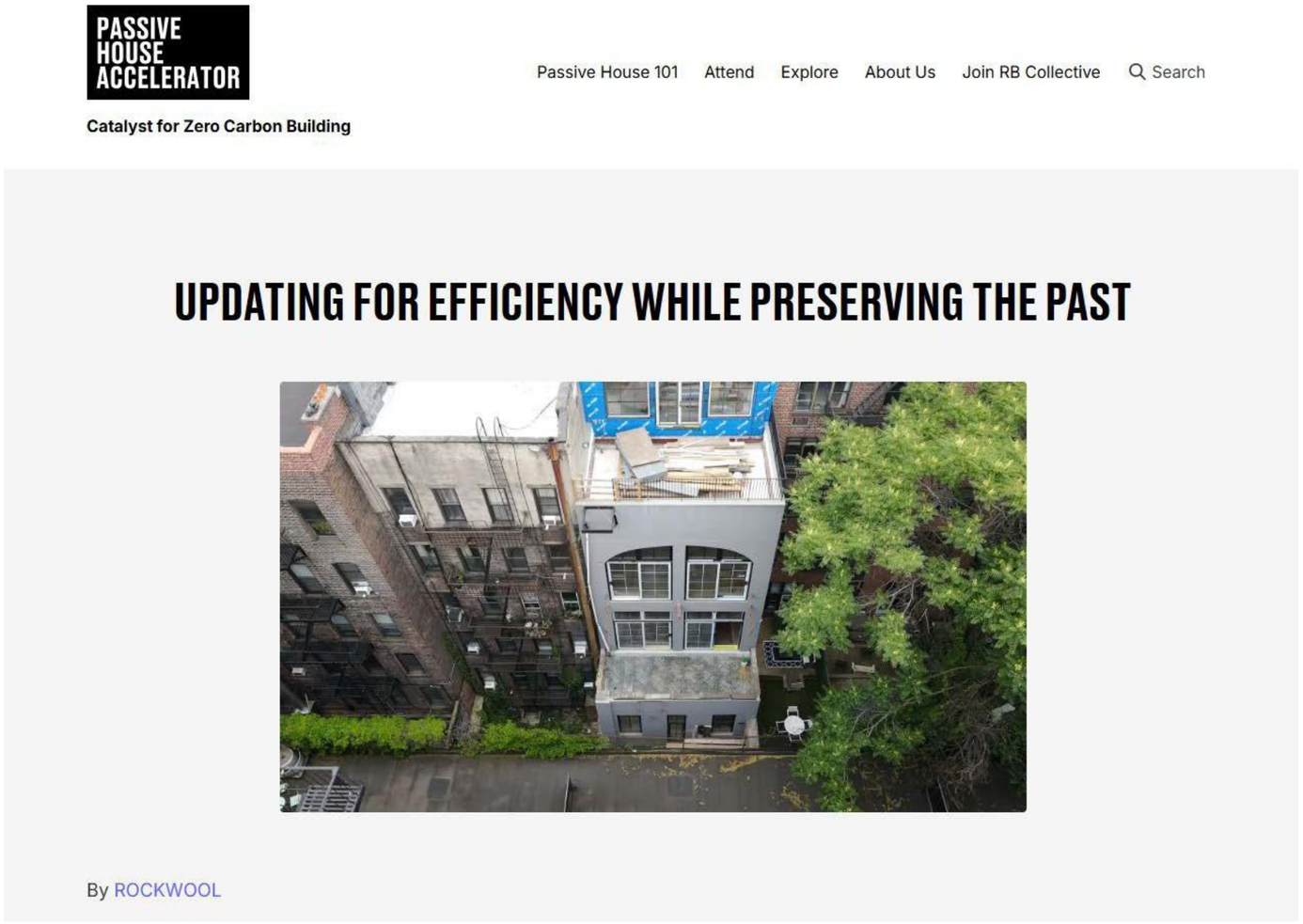


Engine 16, *Passive House Database entry*

Performance Data +

Open Data and Collective Proof

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Engine 16, *Passive House Accelerator case study*

Performance Data + Case Studies =

Open Data and Collective Proof

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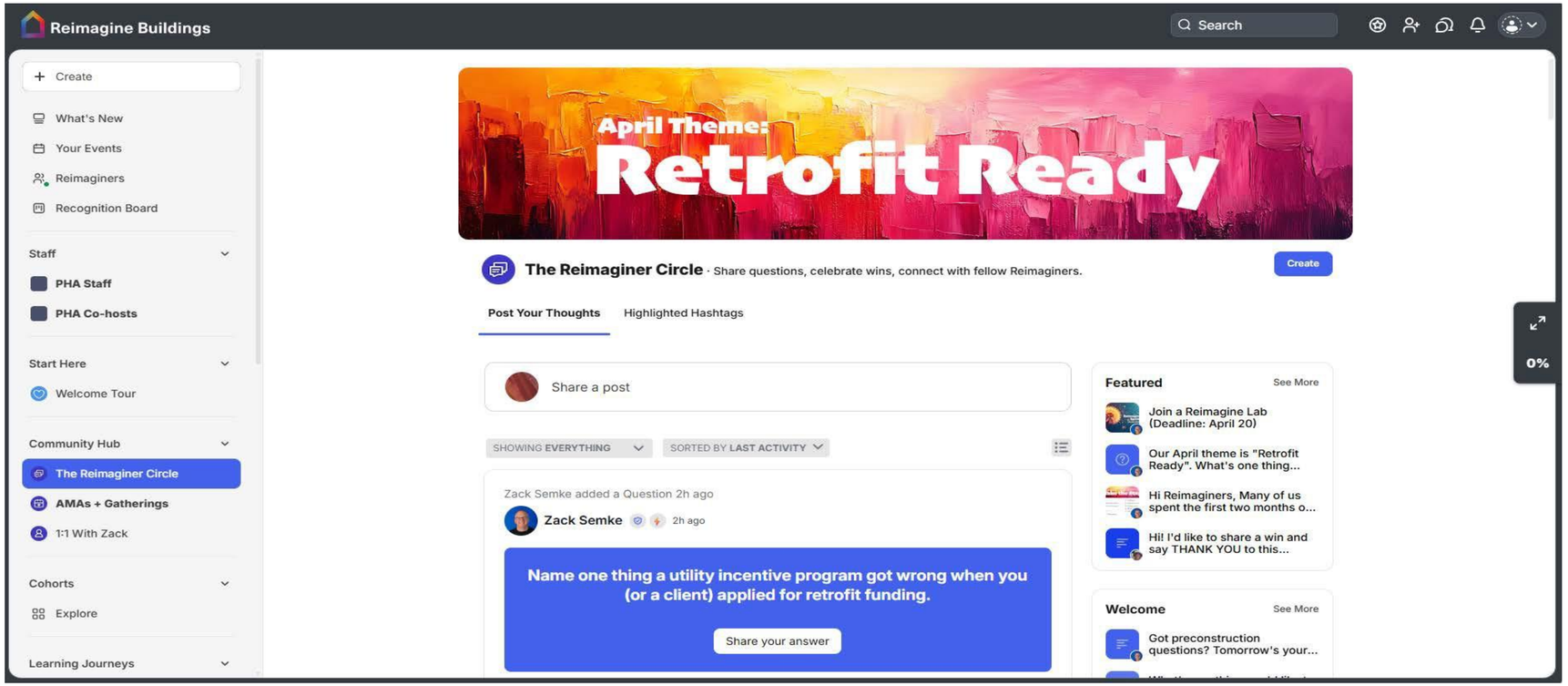
Engine 16, *Completed project*

Performance Data + Case Studies = Shared Knowledge

Architects and developers believe what they see.

New Models of Collaboration

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- Cohorts
- Learning Journeys
- Courses
- Weekly Events
- Conferences

...and more!

Heat Pump Solutions Symposium

Oct. 23 / 12–3 PM ET

Reimagine Buildings '26: The Solutions

Nov. 6 / 10am – 9pm (EDT)

Reimagine Buildings Collective

What's Next for Us?

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- What are you seeing that I'm not?
- How are you scaling your Passive House practice?
- What's working in your projects?
- What else should be part of this conversation?



THANK YOU!

MICHAEL INGUI, mingui@inguiarchitecture.com